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A catalogue of aphid parasitoids (Hymenoptera: Braconidae: Aphidiinae) from India

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A catalogue of aphid parasitoids (Hymenoptera: Braconidae:
Aphidiinae) from India

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A catalogue of aphid parasitoids (Hymenoptera: Braconidae: Aphidiinae) from India

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Abstract. A catalogue of aphidiine parasitoids (Hymenoptera: Braconidae: Aphidiinae) associated with various aphids species occurring in India was compiled. The present catalogue with 125 species under 22 genera has been further reinforced with not only all the latest taxonomic changes but also host names, host plants, distribution in India etc.

Keywords. Aphid, Aphidiinae, Catalogue, Distribution, India

Introduction

Aphid pest problems are known worldwide (Stary and Ghosh 1983). This is complicated by many well-known reasons, *viz.*, their biological peculiarities along with intensification of agriculture and introduction of new plant varieties, along with extensive, injudicious and indiscriminate use of agricultural chemicals. Most of the aphid parasitoids belong to the subfamily Aphidiinae, family Braconidae. Members of this subfamily can be distinguished structurally by their medium body size usually about 1.5-3.5 mm long; females with short ovipositor; metasomal tergum weakly sclerotized; antenna short with 10 to 28 segments; ovipositor sheath or hypopygium in females often modified; a single, large median cell in the fore wing in most species; smooth scutellar sulcus present; cross vein cu-a absent in the hind wing and occipital carina present (at least laterally) (Stary 1970; Achterberg 1997).

Approximately 400 species placed under 60 genera of subfamily Aphidiinae have been described (Stary 1988; Dolphin and Quicke 2001). The members of this subfamily are known to occur in all the major habitats of the world. This subfamily was traditionally represented by four tribes, *viz.*, Ephedrini, Praini, Aphidiini and Trioxini (Mackauer 1968; Belshaw and Quicke 1997) but molecular phylogenetic analysis have proved to be inconclusive, indicating the presence of three *viz.*, Ephedrini, Praini and Aphidiini (Smith et al. 1999; Sanchis et al., 2000) or five *viz.*, Ephedrini, Praini, Monoctonini, Trioxini and Aphidiini (Sanchis et al. 2000) tribes. To facilitate research on aphid parasitoids in India, this catalog was created.

Methods

Host data for Indian records are compiled for each species. Host data are generally presented with in order of the host aphid (Homoptera; Aphididae) on the host plant, when host plant is available, followed by the reference citing that association. Distributional data are presented for Indian provinces only.

Catalogue

The Indian Aphidiinae (Hymenoptera: Braconidae) is presently represented by 125 species belonging to 22 genera. The details of which are as follows:

I. Genus *Adialytus* Foerster

Adialytus Foerster, 1862: 249, 250. Type species: *Adialytus tenuis* Foerster.

1. *Adialytus ambiguus* (Haliday)

Aphidius (*Aphidius*) *ambiguus* Haliday, 1834: 104-105.

Lysiphlebus (*Adialytus*) *arvicola* Stary, 1961.

Host. *Macrosiphum* sp. on *Rosa* sp. (Bhagat and Ahmad 1991); *Sipha maydis* (Passerini) on *Cynodon dactylon* (Shuja-Uddin 1978a).

Distribution. Himachal Pradesh and Jammu and Kashmir (Shuja-Uddin 1978a).

2. *Adialytus salicaphis* (Fitch)

Trioxys salicaphis Fitch, 1855: 841.

Trioxys populaphis Fitch, 1855: 841.

Lipolexis salicaphis Ashmead, 1889: 671.

Aphidius (*Diaeretus*) *laticephalus* Telenga, 1953: 172-173.

Host. *Chaitophorus* sp. on *Salix caprea* (Shuja-Uddin 1978a).

Distribution. Jammu and Kashmir (Shuja-Uddin 1978a).

II. Genus *Aphidius* Nees

Aphidius Nees, 1819: 302. Type species: *Aphidius avenae* Haliday .

Theracmion Holmgren, 1872: 99. Type species: *Theracmion arcticus* Holmgren.

Aphidius Nees, 1819, subg. *Lysaphidus* Smith, 1944: 72. Type species: *Aphidius* (*Lysaphidus*) *adelocarinus* Smith.

Aphidius Nees, 1819, subg. *Euaphidius* Mackauer, 1961a: 110. Type species: *Aphidius pterocommae* Ashmead.

3. *Aphidius absinthii* Marshall

Aphidius absinthii Marshall, 1896: 605-606.

? *Aphidius cardui* Marschal var. *artemisiae* Ivanov, 1927: 429.

Host. *Macrosiphoniella yomogifoliae* (Shinji) on *Artemisia* sp. (Agarwala et al. 1980; Raychaudhuri et al. 1982); *M. kikungshana* (Takahashi) on *Artemisia* sp. (Das and Chakrabarti 1991a); *M. pseudoartemisiae* Shinji (Dharmadhikari and Ramaseshiah 1970) on *Artemisia vulgaris* (Raychaudhuri et al. 1982); *M. sanborni* Gilette (Dharmadhikari and Ramaseshiah 1970) on *Chrysanthemum* sp. (Raychaudhuri et al. 1982); *Macrosiphoniella* sp. on *Chrysanthemum* sp. (Das and Chakrabarti 1991a; Bhagat and Ahmad 1991); Unidentified aphids (Stary and Ghosh 1983; Das and Chakrabarti 1991a).

Distribution. Jammu and Kashmir (Bhagat and Ahmad 1991); Karnataka, Meghalaya (Stary and Ghosh 1983); Sikkim (Agarwala et al. 1980); Uttar Pradesh (Das and Chakrabarti 1991a; Raychaudhuri et al. 1982); West Bengal (Raychaudhuri et al. 1982).

4. *Aphidius areolatus* Ashmead

Aphidius areolatus Ashmead, 1906: 189-190.

Host. Without host records.

Distribution. Jammu and Kashmir (Rishi and Bhagat 1980).

5. *Aphidius cingulatus* Ruthe

Aphidius cingulatus Ruthe, 1859: 315.

Aphidius cingulatus Takada, 1968: 95.

Host. *Pterocomma populeum* (Kaltenbach) on *Populus tremuloides* (Takada and Rishi 1980); *Pterocomma* sp. on *Populus ciliata* and *Salix tetrasperma* (Das and Chakrabarti 1991a).

Distribution. Jammu and Kashmir (Takada and Rishi 1980); Uttar Pradesh (Das and Chakrabarti 1991a).

6. *Aphidius colemani* Viereck

Aphidius colemani Viereck, 1912: 141.

Host. *Aphis nerii* Boyer de Fonscolombe on *Calotropis* sp. (Takada and Rishi 1980); *A. solanella* Theobald (Stary and Ghosh 1983); *A. gossypii* Glover (Stary 1975) on *Vitis* sp. (Stary and Ghosh 1978); *Aphis* sp. on *Rumex* sp. (Das and Chakrabarti 1990), Tobacco (Krishnamurti and Usman 1954); *Dysaphis* sp. (Saha et al. 1982); *Hyalopterus pruni* Geoffroy on *Prunus persicae* (Raychaudhuri et al. 1979, 1982; Das and Chakrabarti 1991a; Subhrani et al. 2006); *Lipaphis erysimi* (Kaltenbach) on *Brassica oleracea* var. *capitata* (Subhrani et al. 2006); *Myzus persicae* (Sulzer) (Rajagopal and Kareem 1979; Sharma and Subba Rao 1964; Stary and Ghosh 1983; Stary 1975); on *Brassica oleracea* var. *capitata* (Singh et al. 1979), *Solanum tuberosum* (Subhrani et al. 2006); *M. varians* Davidson on *Prunus domestica* (Subhrani et al. 2006); *Rhopalosiphum maidis* (Fitch) (Viswanathan 1972); *R. nymphae* (Stary 1975).

Distribution. Himachal Pradesh (Saha et al. 1982); Jammu and Kashmir (Takada and Rishi 1980); Karnataka (Krishnamurti and Usman 1954; Viswanathan 1972; Stary and Ghosh 1983); Manipur (Subhrani et al. 2006), Meghalaya (Stary and Ghosh 1978, 1983); Nagaland (Raychaudhuri et al. 1979, 1982); Tamil Nadu (Rajagopal and Kareem 1979); Uttar Pradesh (Das and Chakrabarti 1991a).

7. *Aphidius eglanteriae* Haliday

Aphidius eglanteriae Haliday, 1834: 102.

Host. *Myzus sorbi* Bhattacharya and Chakrabarti on *Sorbaria tomentosa*; *Macrosiphoniella pseudoartemisiae* on *Artemisia vulgaris*; *Capitophorus formosartemisiae* (Takahashi) on *Artemisia* sp. (Das and Chakrabarti 1990).

Distribution. Uttar Pradesh (Das and Chakrabarti 1990).

8. *Aphidius erysimi* (Stary)

Lysaphidus erysimi Stary, 1960d: 361-363.

Host. Unknown (Rishi 1976).

Distribution. Jammu and Kashmir (Rishi 1976).

9. *Aphidius gifuensis* Ashmead

Aphidius gifuensis Ashmead, 1906: 188.

?*Lysiphlebus hungaricus* Gyorfi, 1958: 133.

Host. *Aphis gossypii* on *Capsicum frutescens* (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006).

10. *Aphidius hortensis* Marshall

Aphidius hortensis Marshall, 1896: 590-591.

Aphidius (*Aphidius*) *berberidis* Smith, 1944: 54-55.

Host. *Lipaphis erysimi* on *Brassica juncea* var. *rugose* (Subhrani et al. 2006); *Liosomaphis himalayensis* Basu on *Berberis pseudambulata* (Takada and Rishi 1980); *Myzus persicae* on *Brassica oleracea* var. *capitata* (Subhrani et al. 2006).

Distribution. Jammu and Kashmir (Takada and Rishi 1980); Manipur (Subhrani et al. 2006).

11. *Aphidius matricariae* Haliday

Aphidius (*Aphidius*) *matricariae* Haliday, 1834: 103.

Aphidius (*Aphidius*) *cirsii* Haliday, 1834: 101.

Aphidius (*Aphidius*) *arundinis* Haliday, 1834: 106.

Aphidius phorodontis Ashmead, 1889: 662.

Aphidius polygonia Marshall, 1896: 602-603.

Aphidius polygonia Marshall, 1896: 607.

Aphidius affinis Quilis, 1931: 48-50.

Aphidius arundinis Haliday var. *obscuriformi* Quilis, 1931: 50-51.

Aphidius renominatus Hincks, 1943: 44.

Aphidius nigriteleus Smith, 1944: 61-62.

Host. *Aphis craccivora* Koch on *Solanum nigrum* (Bhagat and Ahmad 1991); *A. fabae* Scopoli on *Rumex nepalensis* (Bhagat and Ahmad 1991; Saha et al. 1982); *A. gossypii* on *Hibiscus esculentus* (Agarwala et al. 1980), *Solanum melongena* (Subhrani et al. 2006); *A. nasturtii* Kaltenbach (Saha et al. 1982); *A.*

solanella (Stary and Ghosh 1983); *A. spiraecola* Patch on *Bidens pilosa*, *Gynura angustosa* (Agarwala et al. 1980) *Brachycaudus cardui* (Linnaeus) on *Carduus delbergii* (Raychaudhuri et al. 1982); *B. helichrysi* (Kaltenbach) on *Ageratum conyzoides* (Agarwala et al. 1980; Bhagat and Ahmad 1991) *Prunus amygdalus*, *P. persicae* (Das and Chakrabarti 1990) *Prunus* sp. (Stary and Ghosh 1975) *Brachycaudus* sp. (Stary and Bhagat 1978) on *Carduus* sp. (Raychaudhuri et al. 1982); *Brevicoryne brassicae* (Linnaeus) on *Brassica* sp. (Stary and Ghosh 1975); *Capitophorus carduinus* (Walker) (Saha et al. 1982); *C. formosartemisiae* on *Artemisia* sp. (Saha et al. 1982); *C. hippophaeus indicus* on *Polygonum chinense* (Stary and Ghosh 1978); *Diphorodon cannabis* (Borner) on *Cannabis sativa* (Raychaudhuri et al. 1982; Saha et al. 1982); *Diphorodon* sp. on *Cannabis sativa* (Raychaudhuri et al. 1982); *Lipaphis erysimi* on *Brassica napus* (Stary and Ghosh 1978); *Myzus cerasi* (Fabricius) on *Phlox dummondii* (Bhagat and Ahmad 1991); *M. dycei* Carver (Stary and Ghosh 1975) on *Urtica* sp. (Saha et al. 1982); *M. ornatus* Laing on *Sonchus* sp. (Saha et al. 1982) *Macrosiphoniella pseudoartemisiae* on *Artemisia* sp. (Saha et al. 1982); *Myzus persicae* (Stary and Ghosh 1975) on *Brassica napus* (Agarwala et al. 1980); *Brassica oleracea* var. *capitata* (Subhrani et al. 2006) *Solanum tuberosum* (Subhrani et al. 2006) *Descorina sofia* (Takada and Rishi 1980) *Lysoperslicon esculentum* and *Triticum aestivum* (Singh et al. 1999); *M. umifoliae* (Shinji) on *Rubia cardifolia* (Bhagat and Ahmad 1991) *Myzus* sp. on Rubiaceae Plants (Stary and Ghosh 1978); *Phorodon cannabis* (Stary and Bhagat 1978; Stary and Ghosh 1983) on *Cannabis sativa* (Takada and Rishi 1980), *Phorodon* sp. (Stary and Bhagat 1978); *Shinjia pteridifoliae* (Shinji) on *Pteridium* sp. (Stary and Ghosh 1979); *Sipha burakowskii* Holman et Szelegiewicz on grass (Saha et al. 1982).

Distribution. Himachal Pradesh (Saha et al. 1982; Stary and Ghosh 1983); Jammu and Kashmir (Stary and Bhagat 1978; Takada and Rishi 1980; Raychaudhuri et al. 1982; Bhagat and Ahmad 1991); Manipur (Subhrani et al. 2006); Meghalaya (Stary and Ghosh 1975, 1978, 1979); Sikkim (Agarwala et al. 1980); Uttar Pradesh (Das and Chakrabarti 1990; Singh et al. 1999).

12. *Aphidius picipes* (Nees)

Bracon picipes Nees, 1811: 28.

Aphidius avenae Haliday, 1834: 99.

Aphidius granarius Marshall, 1896: 579-580.

Host. *Aphis gossypii*, *Hyadaphis coriandri* (Das) on *Coriandrum sativum* (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006).

13. *Aphidius polycostulari* Das and Chakrabarti

Aphidius polycostulari Das and Chakrabarti, 1991a: 409-413.

Host. *Macrosiphum* (*Sitobion*) sp. on *Rosa* sp. (Das and Chakrabarti 1991a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991a).

14. *Aphidius qadrii* (Shuja-Uddin)

Lysaphidus qadrii Shuja-Uddin, 1976: 314-315.

Host. *Brachycaudus helichrysi* on *Anaphalis* sp., *Brachycaudus* sp. on *Gnaphalium* sp., *Capitophorus* sp. on *Anaphalis cinnamomea* (Das and Chakrabarti 1991a); *Myzus ornatus* (Stary and Ghosh 1983); Unidentified aphid on *Artocarpus heterophyllus* (Shuja-Uddin 1976).

Distribution. Himachal Pradesh (Stary and Ghosh 1983); Uttar Pradesh (Shuja-Uddin 1976; Das and Chakrabarti 1991a).

15. *Aphidius rhopalosiphi* DeStefani

Aphidius rhopalosiphi DeStefani, 1902: 633.

Host. *Myzus numecola* on *Prunus amygdalus* (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006).

16. *Aphidius rosae* Haliday

Aphidius (*Aphidius*) *rosae* Haliday, 1833: 261.

Aphidius rosarum Nees, 1834: 19.

Aphidius aphidivorus Ratzeburg, 1844: 50, 52.

Aphidius cancellatus Buckton, 1876: 111.

Host. *Macrosiphum rosaeformis* Das on *Rosa* sp. (Raychaudhuri et al. 1979; Agarwala and Raychaudhuri 1981); *M. rosae* (Linnaeus) on *Rosa* sp. (Raychaudhuri et al. 1979; Agarwala 1983a; Das and Chakrabarti 1991a).

Distribution. Sikkim (Raychaudhuri et al. 1979); Uttar Pradesh (Raychaudhuri et al. 1979; Das and Chakrabarti 1991a); West Bengal (Raychaudhuri et al. 1979; Agarwala and Raychaudhuri 1981; Agarwala 1983a).

17. *Aphidius salignae* Watanabe

Aphidius salignae Watanabe, 1939: 13-14.

Host. *Tuberolachnus salignus* (Gmelin) (Bhagat and Ahmad 1991).

Distribution. Jammu and Kashmir (Bhagat and Ahmad 1991).

18. *Aphidius setiger* Mackauer

Aphidius setiger Mackauer, 1961b: 273-275.

Host. Without host records (Rishi and Bhagat 1980).

Distribution. Jammu and Kashmir (Rishi and Bhagat 1980).

19. *Aphidius similis* Stary and Carver

Aphidius similis Stary and Carver, 1979: 337-341.

Host. *Aphis gossypii* on *Hibiscus esculentus*, *A. spiraecola* on *Bidens pilosa* (Agarwala et al. 1980); *Brachycaudus helichrysi* on *Ageratum conyzoides* (Agarwala et al. 1980) *Gynura angutosa* (Raychaudhuri et al. 1982); *Myzus persicae* on *Brassica napus* (Agarwala et al. 1980) *Gynura angutosa* (Raychaudhuri et al. 1982; Agarwala et al. 1980) *Solanum tuberosum* (Agarwala et al. 1980) *Lysoperslicon esculentum* (Subhrani et al. 2006).

Distribution. Sikkim (Agarwala et al. 1980; Raychaudhuri et al. 1982); Manipur (Subhrani et al. 2006).

20. *Aphidius smithi* Sharma and Subba Rao

Aphidius (Aphidius) smithi Sharma and Subba Rao, 1959: 183-187.

Host. *Acyrtosiphon pisum* (Harris) (Rao et al. 1969, 1970, 1971; Singh et al. 1999) on *Pisum sativum* (Raychaudhuri et al. 1982), *Medicago sativa*, *Vicia faba* (Singh et al. 1999) *Lathyrus odoretus* (Takada and Rishi 1980).

Distribution. Himachal Pradesh (Sharma and Subba Rao 1959; Stary and Ghosh 1983); Jammu and Kashmir (Takada and Rishi 1980; Stary and Ghosh 1983); Punjab (Raychaudhuri et al. 1982); Uttar Pradesh (Rao et al. 1969, 1970, 1971; Raychaudhuri et al. 1982; Singh et al. 1999); West Bengal (Raychaudhuri et al. 1982).

21. *Aphidius staryi* Das and Chakrabarti.

Aphidius staryi Das and Chakrabarti, 1990: 399-414.

Host. *Myzus cornutus* Medda and Chakrabarti on *Prunus cornuta* (Das and Chakrabarti 1990).

Distribution. Uttar Pradesh (Das and Chakrabarti 1990).

22. *Aphidius transcaspicus* Telenga

Aphedius transcaspicus Telenga, 1958: 55-56.

Host. *Aphis* sp. on *Prunus domestica* (Bhagat and Ahmad 1991).

Distribution. Jammu and Kashmir (Bhagat and Ahmad 1991).

23. *Aphidius urticae* Haliday

Aphidius urticae Haliday, 1834: 100.

Host. *Acyrtosiphon* sp. on *Euphorbia pilosa* (Das and Chakrabarti, 1990); *Neoacyrtosiphon (Pseudoacyrtosiphon) holsti* (Takahashi) on *Rhododendron* sp. (Agarwala et al. 1981a); Unidentified aphid on *Pteris aquilina* (Stary and Ghosh 1983).

Distribution. Uttar Pradesh (Das and Chakrabarti 1990); West Bengal (Agarwala et al. 1981a; Stary and Ghosh 1983).

24. *Aphidius uzbekistanicus* Luzhetzki

Aphidius uzbekistanicus Luzhetzki, 1960: 122-123.

Host. *Acyrtosiphon* sp. on *Bothriochloa* sp. (Das and Chakrabarti 1989a); *Macrosiphum miscanthi* Takahashi on *Hordeum vulgare* (Singh et al. 1999); *Rhopalosiphum maidis* on *Hordeum vulgare* (Agarwala et al. 1980); *Schizaphis* sp. on Grass (Das and Chakrabarti 1989a); *Macrosiphum miscanthi* (Shuja-Uddin 1977; Das and Chakrabarti 1989a) on Grass (Saha et al. 1982), *Triticum aestivum* (Agarwala et al. 1980); *Sitobion* sp. on *Avena sativa* (Das and Chakrabarti 1989a), Grass (Shuja-Uddin 1975b; Stary and Bhagat 1978), *Penisetum falccidum* (Das and Chakrabarti 1989a); *Sitobion? alopecuri* (Takahashi) on Grass (Saha et al. 1982).

Distribution. Himachal Pradesh (Saha et al. 1982); Jammu and Kashmir (Stary and Ghosh. 1983; Das and Chakrabarti. 1989a); Sikkim (Agarwala et al. 1980); Uttar Pradesh (Shuja-Uddin 1975b; Das and Chakrabarti 1989a; Singh et al. 1999).

25. *Aphidius* sp.

Host. *Acyrtosiphon pisum* (Rao et al. 1969); *Aphis craccivora* (Dharmadhikari and Ramaseshiah 1970); *A. gossypii* (Raja Rau 1954); *A. ruborum longisetosus* Basu, *A. solanella* (Stary and Ghosh 1983); *A. spiraeicola* (Stary and Ghosh 1975); *Aulacorthum* sp. (Stary and Ghosh 1983); *Brachycaudus helichrysi* (Raychaudhuri et al. 1979); *Chaetosiphon gracilicorne* David, Rajasing and Narayanan on *Rosa webbiana* (Takada and Rishi 1980); *Hyalopterus pruni* on *Prunus cerasus*; *Lachnus tropicalis* (Van der Goot) (Raychaudhuri et al. 1979); *Lipaphis erysimi* on *Eruca sativa* (Bakhetia and Sharma 1979; Singh 1980); *Macrosiphoniella sanborni* (Dharmadhikari and Ramaseshiah 1970) on *Chrysanthemum* sp. (Bhagat and Ahmad 1991); *Myzus ornatus* (Stary and Ghosh 1983); *M. persicae* (Anonymous 1969; Rao et al. 1969, 1970; Stary and Ghosh 1983); *Neomyzus circumflexus* (Buckton) (Stary and Ghosh 1983); *Rhopalosiphum maidis* on *Hordeum vulgare* (Raychaudhuri et al. 1982); *Schizaphis rotundiventris* (Signoret) on *Pyrus* sp. (Stary and Ghosh 1978); *Macrosiphum rosae* (Stary and Ghosh 1983); *M. rosaeformis* (Stary and Ghosh 1975); *Sitobion* sp. on *Avena sativa*, *Triticum aestivum*, *Penisetum falccidum* (Raychaudhuri et al. 1982).

Distribution. Himachal Pradesh (Stary and Ghosh 1983); Jammu and Kashmir (Takada and Rishi 1980; Bhagat and Ahmad 1991; Rao et al. 1969, 1970; Raychaudhuri et al. 1982); Karnataka (Rao et al. 1969, 1970; Raja Rau, 1954); Meghalaya (Stary and Ghosh 1975, 1983); Nagaland (Raychaudhuri et al. 1979); Punjab (Bakhetia and Sharma 1979); Sikkim (Bakhetia and Sharma 1979; Singh 1980; Raychaudhuri et al. 1982; Stary and Ghosh 1983); Uttar Pradesh (Raychaudhuri et al. 1982); West Bengal (Stary and Ghosh 1983).

III. Genus *Archaphidus* Stary and Schlinger

Archaphidus Stary and Schlinger, 1967: 30. Type species: *Archaphidus greenideae* Stary and Schlinger

26. *Archaphidus greenideae* Stary and Schlinger

Archaphidus greenideae Stary and Schlinger, 1967: 30-32.

Host. *Greenidea ficicola* Takahashi on *Psidium guajava* (Ahmad and Singh 1995); *G. formosana heeri* Raychaudhuri, Ghosh, Raychaudhuri and Agarwala on *Syzygium guajava* (Singh et al. 1999).

Distribution. Uttar Pradesh (Ahmad and Singh 1995; Singh et al. 1999).

IV. Genus *Areopraon* Mackauer

Areopraon Mackauer, 1959a: 849-850. Type species: *Praon lepellei* Waterston

27. *Areopraon lepellei* (Waterston)

Praon lepellei Waterston, 1926: 237.

Host. *Eriosoma ulmi* (Linnaeus) on *Ulmus laevigata* (Bhagat 1982a); *Eriosoma* sp. (Rishi and Bhagat 1980); *Schizoneurella indica* Hille Ris Lambers on *Ulmus wallichiana* (Bhagat 1982a).

Distribution. Jammu and Kashmir (Bhagat 1981a; Rishi and Bhagat 1980; Bhagat 1982a).

28. *Areopraon* sp.

Host. *Eriosoma* sp. (Rishi 1976).

Distribution. Jammu and Kashmir (Rishi 1976).

V. Genus *Betuloxys* Mackauer

Betuloxys Mackauer, 1960b: 136. Type species: *Trioxys compressicornis* Ruthe.

29. *Betuloxys assamensis* (Stary)

Trioxys (Betuloxys) assamensis Stary, in Stary and Ghosh, 1975: 346-347.

Host. *Betacallis querciphaga* Basu, Ghosh and Raychaudhuri (Stary and Ghosh 1975).

Distribution. Meghalaya (Stary and Ghosh 1975).

30. *Betuloxys hortorum* (Stary)

Trioxys (Betuloxys) hortorum Stary, 1960c: 365-367.

Trioxys (Betuloxys) affinis Mackauer, 1960a: 96-98.

Host. Unidentified Aphids (Rishi 1976)

Distribution. Jammu and Kashmir (Rishi 1976)

31. *Betuloxys intermedius* (Shuja-Uddin)

Trioxys (Betuloxys) intermedius Shuja-Uddin, 1975a: 415-420.

Host. *Capitophorus formosartemisiae* on *Artemisia vulgaris* (Das and Chakrabarti 1991a); *Capitophorus* sp. on *Centaurea iberica* (Shuja-Uddin 1975a), *Artemisia* sp. (Das and Chakrabarti 1991a)

Distribution. Jammu and Kashmir (Shuja-Uddin 1975a); Uttar Pradesh (Das and Chakrabarti 1991a)

32. *Betuloxys takecallis* (Stary)

Trioxys (Betuloxys) takecallis Stary, in Stary and Raychaudhuri, 1978: 365-367.

Host. *Takecallis arundinariae* (Essig) on *Bamboosa* sp. (Stary and Raychaudhuri 1978).

Distribution. Meghalaya (Stary and Raychaudhuri 1978).

VI. Genus *Binodoxys* Mackauer

Trioxys Haliday, 1833, subg. *Binodoxys* Mackauer, 1960b: 141. Type species: *Aphidius (Trioxys) angelicae* Haliday.

33. *Binodoxys acalephae* (Marshall)

Aphidius acalephae Marshall, 1896: 608-609.

Trioxys (Trioxys) urticae Mackauer, 1959b: 171-173.

Host. *Aphis craccivora* on *Vicia faba*; *A. gossypii* on *Cyanotis axillaries* (Subhrani et al. 2006); *Capsicum frutescence* (Dharmadhikari and Ramaseshiah 1970); *Phorodon* sp. (Stary and Bhagat 1978); *Toxoptera odinae* on *Rhus similiata* (Subhrani et al. 2006).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978); Karnataka (Dharmadhikari and Ramaseshiah 1970); Manipur (Subhrani et al. 2006).

34. *Binodoxys basicurvus* (Shuja-Uddin)

Trioxys (Binodoxys) basicurvus Shuja-Uddin, 1973: 9-11.

Host. *Aphis gossypii* on *Rubus* sp. (Shuja-Uddin 1973).

Distribution. Jammu and Kashmir (Shuja-Uddin 1973).

35. *Binodoxys brevicornis* (Haliday)

Aphidius (Binodoxys) brevicornis Haliday, 1833: 491.

Aphidius (Binodoxys) minutus Haliday, 1833: 491.

Host. *Lipaphis erysimi* (Stary and Ghosh 1983); *Mysus persicae* (Stary and Ghosh 1983; Sharma and Subba Rao 1964).

Distribution. Himachal Pradesh (Sharma and Subba Rao 1964); Karnataka (Stary and Ghosh 1983).

36. *Binodoxys centaureae* (Haliday)

Aphidius (*Binodoxys*) *centaureae* Haliday, 1833: 490.

Binodoxys uroleucon Takada and Rishi, 1980: 234-240.

Host. *Macrosiphoniella* sp. (Stary and Bhagat 1978); *Uroleucon* sp. on *Chrysanthimum molifolium* (Takada and Rishi 1980), *Senecio* sp. (Das and Chakrabarti 1991a).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978; Takada and Rishi 1980); Uttar Pradesh (Das and Chakrabarti 1991a).

37. *Binodoxys ceratovacunae* (Agarwala, Saha and Mahapatra)

Trioxys (*Binodoxys*) *ceratovacunae* Agarwala, Saha and Mahapatra, 1987: 329-333.

Host. *Ceratovacuna silvestrii* (Takahashi) on Bamboo plant (Agarwala et al. 1987).

Distribution. Sikkim (Agarwala et al. 1987).

38. *Binodoxys equatus* (Samanta, Tamili and Raychaudhuri)

Trioxys (*Binodoxys*) *equatus* Samanta, Tamili and Raychaudhuri, 1985: 4, 118-120.

Host. *Aphis gossypii* on *Urtica* sp. (Samanta et al. 1985).

Distribution. Meghalaya (Samanta et al. 1985).

39. *Binodoxys eutrichosiphi* (Stary)

Trioxys (*Binodoxys*) *eutrichosiphi* Stary in Stary and Ghosh, 1975: 343-349.

Host. *Eutrichosiphum* sp. on *Litsaca* sp. (Stary and Ghosh 1975).

Distribution. Meghalaya (Stary and Ghosh 1975).

40. *Binodoxys indicus* (Subba Rao and Sharma)

Trioxys (*Trioxys*) *indicus* Subba Rao and Sharma, 1958: 199-201.

Host. *Aphis citricola* Van der Goot on *Cajanus cajan*, *Cestrum diurnum*, *Sonchus* sp. (Singh et al. 1999); *A. craccivora* (Singh and Sinha 1979, 1980a, 1980b, 1980c; Stary and Bhagat 1978) on *Ageratum conyzoides* (Singh et al. 1979), *Cajanus cajan* (Singh et al. 1999), *Dolichos lab lab* (Agarwala et al. 1983; Subhrani et al. 2006; Singh et al. 1999), *Hibiscus rosasinensis* (Singh et al. 1999), *Vicia faba* (Raychaudhuri et al. 1978), *Legenaria vulgaris*, *Solanum melongena* (Singh et al. 1999), Leguminosae plants (Stary and Ghosh 1975); *A. fabae* (Singh et al. 1979) on *Rubus ellipticus* (Saha et al. 1982), *Solanum nigrum* (Das and Chakrabarti 1990), *Vicia faba* (Agarwala 1983); *A. solanella* on *Maesa* sp. (Stary and Ghosh 1975); *A. gossypii* (Ramaseshiah 1972; Rao et al. 1969, 1970; Sharma and Farooqi 1963; Stary and Bhagat 1978), *Bidens pilosa* (Agarwala 1983), Brinjal (Narayanan et al. 1958; Subba Rao and Sharma 1958), *Cajanus cajan* (Singh et al. 1999), *Capsicum frutescens* (Singh et al. 1999; Subhrani et al. 2006), *Capsicum* sp. (Agarwala 1983), *Cestrum nocturnum* (Agarwala 1983), *Chrysanthemum* sp., *Coccinia cardifolia* (Shuja-Uddin 1973), *Colocasia* sp. (Raychaudhuri et al. 1978), *Cucumis melo* (Shuja-Uddin 1973), *Cucurbita maxima* (Subhrani et al. 2006), *Cucurbita maxima* (Singh et al. 1999), *Cuscuta reflexa* (Shuja-Uddin 1973), *Cyphomendra betaceae* (Agarwala 1983), *Dolichos lab lab* (Subhrani et al. 2006), *Durant* sp. (Shuja-Uddin 1973), *Eupatorium odoratum* (Agarwala 1983), *Gossypium herbaceum* (Shuja-Uddin 1973; Singh et al. 1999), *G. hirsutum* (Shuja-Uddin 1973), *Gynura angutosa* (Agarwala 1983), *Hibiscus rosasinensis* (Agarwala 1983; Stary and Ghosh 1975), *Luffa cylindrica*, *Lysoperslicon esculentum*, *Monordia charantia* (Singh et al. 1999), *Psidium guajava* (Raychaudhuri et al. 1978; Shuja-Uddin 1973), *Sechium edule* (Agarwala et al. 1980), *Solanum melongena* (Agarwala et al. 1983; Shuja-Uddin 1973; Singh et al. 1999; Subhrani et al. 2006), *S. nigrum* (Saha et al. 1982), *Tinospora* sp. (Shuja-Uddin 1973); *A. nasturtii* (Stary and Ghosh 1983) on *Capsicum frutescens* (Singh et al. 1999), *Hibiscus rosasinensis*, *Syzygium guajava* (Singh et al. 1999); *A. neri* on *Calotropis gigantia* (Singh et al. 1999) *Calotropis procera* (Agarwala et al. 1983; Shuja-Uddin 1973; Singh et al. 1999); *A. ruborum longisetosus* on *Rubus* sp. (Stary and Ghosh 1975); *A. spiraeicola* on *Spiraea* sp. (Stary and Ghosh 1975) *Aphis* sp. on *Solanum* sp. (Das and Chakrabarti 1990); *Aulacorthum magnoliae* (Essig and Kuwana) on *Sechium edule* (Agarwala et al. 1980); *Aulacorthum* sp. (Stary and Ghosh 1983); *Brachycaudus helichrysi* on *Gynura crepidioides* (Stary and Ghosh 1978), *Prunus persicae* (Agarwala et al. 1983), *Pyrus* sp. (Das and Chakrabarti 1990); *Ceratovacuna silvestrii* on *Bamboosa arundinacea* (Agarwala et al. 1983); *Hysteroneura setariae* (Thomas) on *Cyperus rotendus* (Singh et al. 1999); *Lipaphis erysimi* (Rao et al. 1969) on *Brassica campestris*, *Calotropis procera* (Singh

et al. 1999); *Myzus persicae* (Rao et al. 1969; Stary and Ghosh 1975) on *Cajanus cajan* (Singh et al. 1999), *Sechium edule* (Agarwala et al. 1980), *Solanum melongena*, *S. tuberosum* (Singh et al. 1999); *Prociphilus* sp. on *Populus* sp. (Saha et al. 1982); *Sinomegoura citricola* (van der Goot) on *Ardisia* sp. (Stary and Ghosh 1975); *Macrosiphum miscanthi* (Saha et al. 1982); *Toxoptera aurantii* (Boyer de Fonscolombe) on *Artocarpus heterophyllus*, *Citrus* sp. (Agarwala et al. 1983), *Ilex* sp. (Stary and Ghosh 1975), *Bougainvillea spectabilis* (Singh et al. 1999); *T. citricidus* (Kirkaldy) (Rishi and Bhagat 1980; Stary and Ghosh 1983) on *Citrus* sp., *Zanthoxylum* sp. (Stary and Ghosh 1975); Unidentified Aphids (Stary and Ghosh 1983).

Distribution. Delhi (Narayanan et al. 1958; Subba Rao and Sharma 1958); Himachal Pradesh (Saha et al. 1982; Singh and Sinha 1980a; Stary and Ghosh 1983); Jammu and Kashmir (Rishi and Bhagat 1980; Stary and Ghosh 1983; Stary and Bhagat 1978); Karnataka (Ramaseshiah 1972; Rao et al. 1969, 1970); Manipur (Raychaudhuri et al. 1978; Stary and Ghosh 1975); Meghalaya (Stary and Ghosh 1975, 1978); Punjab (Subba Rao and Sharma 1962); Sikkim (Agarwala 1983; Agarwala et al. 1980; Stary and Ghosh 1983); Tripura (Agarwala 1983; Agarwala et al. 1983); Uttar Pradesh (Agarwala et al. 1983; Das and Chakrabarti 1990; Shuja-Uddin 1973; Singh and Sinha 1979, 1980a; Singh et al. 1979, 1999); West Bengal (Agarwala 1983; Agarwala et al. 1983; Rao et al. 1969; Singh and Sinha 1980a; Stary and Ghosh 1983).

41. *Binodoxys jaii* (Bhagat)

Trioxys (Binodoxys) jaii Bhagat, 1982c: 321-324.

Host. *Shivaphis celti* Das on *Celtis australis* (Bhagat 1982c).

Distribution. Jammu and Kashmir (Bhagat 1982c).

42. *Binodoxys joshimathensis* (Das and Chakrabarti)

Trioxys (Binodoxys) joshimathensis Das and Chakrabarti, 1989a: 265-372.

Host. *Macrosiphum miscanthi* on *Bothriochloa* sp. (Das and Chakrabarti 1989a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1989a).

43. *Binodoxys kashmirensis* Takada and Rishi

Binodoxys kashmirensis Takada and Rishi, 1980: 234-240.

Host. *Microlophium* sp. on *Rosa bruianna* (Takada and Rishi 1980).

Distribution. Jammu and Kashmir (Takada and Rishi 1980).

44. *Binodoxys kumaonensis* (Stary and Raychaudhuri)

Trioxys (Binodoxys) kumaonensis Stary and Raychaudhuri, 1982: 297-304.

Host. *Greenidea kumaoni* Chakrabarti & Raychaudhuri on *Berberis* sp. (Stary and Raychaudhuri 1982).

Distribution. Himachal Pradesh (Stary and Raychaudhuri 1982).

45. *Binodoxys longispinus* (Shuja-Uddin)

Trioxys (Binodoxys) longispinus Shuja-Uddin, 1983: 36-38.

Host. *Aphis farinosa* Gmelin on *Salix caprea* (Shuja-Uddin 1983).

Distribution. Jammu and Kashmir (Shuja-Uddin 1983).

46. *Binodoxys mackaueri* (Das and Chakrabarti)

Trioxys (Binodoxys) mackaueri Das and Chakrabarti, 1989a: 365-372.

Host. *Melanaphis meghalayensis meghalayensis* Raychaudhuri and Banerjee on Bamboo (Das and Chakrabarti 1989a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1989a).

47. *Binodoxys oregama* (Agarwala, Saha and Mahapatra)

Trioxys (Binodoxys) oregama Agarwala, Saha and Mahapatra, 1987: 329-333.

Host. *Ceratovacuna* sp.? *perglandulosa* Basu, Ghosh and Raychaudhuri on Grass (Agarwala et al. 1987).

Distribution. Sikkim (Agarwala et al. 1987).

48. *Binodoxys rubicola* (Shuja-Uddin)

Trioxys (Binodoxys) rubicola Shuja-Uddin, 1973: 9-14.

Host. *Aphis gossypii* on *Solanum melongena*, *Capsicum frutescens* (Subhrani et al. 2006), *Rubus* sp. (Shuja-Uddin 1973); *A. ruborum longisetosus* on *Rubus ellipticus* (Das and Chakrabarti 1989a).

Distribution. Jammu and Kashmir (Shuja-Uddin 1973); Uttar Pradesh (Das and Chakrabarti 1989a); Manipur (Subhrani et al. 2006).

49. *Binodoxys shillongensis* (Stary)

Trioxys (Binodoxys) shillongensis Stary in Stary and Ghosh, 1978: 78-79.

Host. *Sinomegoura pyri* Ghosh and Raychaudhuri (Stary and Ghosh 1978).

Distribution. Meghalaya (Stary and Ghosh 1978).

50. *Binodoxys sinensis* (Mackauer)

Trioxys (Binodoxys) sinensis Mackauer, 1962: 40-42.

Host. *Aphis citricola* and *A. gossypii* on *Cestrum nocturnum* (Rao 1969).

Distribution. Uttar Pradesh (Rao 1969)

51. *Binodoxys tomentosae* (Das and Chakrabarti)

Trioxys (Binodoxys) tomentosae Das and Chakrabarti, 1990: 399-414.

Host. *Myzus sorbi* on *Sorbaria tomentosa* (Das and Chakrabarti 1990).

Distribution. Uttar Pradesh (Das and Chakrabarti 1990).

52. *Binodoxys uroleucon* Takada and Rishi

Binodoxys uroleucon Takada and Rishi, 1980: 234-240.

Host. *Uroleucon* sp. on *Chrysanthemum morifolium* (Takada and Rishi 1980).

Distribution. Jammu and Kashmir (Takada and Rishi 1980).

VII. Genus *Cristicaudus* Stary and Remaudiere

Cristicaudus Stary and Remaudiere, 1982: 110. Type species: *Cristicaudus bicolor* Stary and Remaudiere.

53. *Cristicaudus nepalensis* (Takada)

Binodoxys nepalensis Takada 1970: 42-43.

Host. *Aphis citricola* (Stary and Ghosh 1979).

Distribution. Meghalaya (Stary and Ghosh 1979).

54. *Cristicaudus garhwalensis* Das and Chakrabarti

Cristicaudus garhwalensis Das and Chakrabarti, 1991b: 305-309.

Host. *Capitophorus formosartemisiae* on *Artimisia vestita* (Das and Chakrabarti 1991b).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991b).

55. *Cristicaudus indicus* Das and Chakrabarti

Cristicaudus indicus Das and Chakrabarti, 1991b: 305-309.

Host. *Aphis* sp. on *Glochoin velutinum* (Das and Chakrabarti 1991b).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991b).

VIII. Genus *Diaeretiella* Stary

Diaeretiella Stary, 1960a: 242-243. Type species: *Aphidius rapae* M'Intosh.

56. *Diaeretiella rapae* (M'Intosh)

? *Aphidius vulgaris* Bouche, 1834: 161-162.

Aphidius rapae M'Intosh, 1855: 194.

Aphidius (Trionyx) rapae Curtis, 1860: 73-74.

Diaeretus chenopodii Foerster, 1867: 125.

Trioxys piceus Cresson, 1880: 260.

Lipolexis chenopodiaphidis Ashmead, 1889: 671.

Aphidius brassicae Marshal, 1896: 597-598.

Diaeretus californicus Baker, 1909: 25.

Diaeretus nipponensis Viereck, 1911: 182.

Diaeretus obsoletus Kurdjumov, 1913: 41.

Diaeretus napus Quilis, 1931: 71-72.

Diaeretus croaticus Quilis, 1934: 8-9.

Diaeretus plesiorapae Blanchard, 1940: 45-48.

Diaeretus aphidum Mukerji and Chatterjee, 1950: 4-6.

Host. *Aphis craccivora* (Atwal et al. 1969) on *Solanum tuberosum* (Bhagat and Ahmad 1991); *A. gossypii* (Sethumadhavan and Dharmadhikari 1969); *A. ruborum longisetosus* on *Punica granatum* (Saha et al. 1982); *Brachycaudus helichrysi* on *Prunus amygdalus* (Das and Chakrabarti 1990); *Brevicoryne brassicae* (Rao et al. 1970; Sethumadhavan and Dharmadhikari 1969) on Brassicaceae plant (Bhagat and Ahmad 1991), Cabbage (Batra and Wahdi 1962), *Brassica nigra*, *B. oleracea*, *Raphanus sativus* (Saha et al. 1982), *Brassica* sp. (Stary and Ghosh 1975), *Descorina sofia* (Takada and Rishi 1980), *Raphanus sativus* (Singh et al. 1999); *Hayhurstia atriplicis* (Linnaeus) (Sethumadhavan and Dharmadhikari 1969) on *Chenopodium album* (Das and Chakrabarti 1990); *Lipaphis erysimi* (Atwal et al. 1971; Kundu et al. 1966; Rao et al. 1969; Subhrani et al. 2006) on *Brassica campestris* (Bhagat and Ahmad 1991) var. cauliflower (Singh et al. 1999), *Brassica juncea* var. M27, *rugose*, *capitata* (Subhrani et al. 2006), *B. napus* (Stary and Ghosh 1978), *B. oleracea* (Agarwala et al. 1980), Mustard (Akhtar et al. 2006), *Brassica* sp. (Saha et al. 1982); *Macrosiphoniella pseudoartemisae* on *Brassica* sp. (Saha et al. 1982); *Metopolophium (Metopolophium) dirhodum* (Walker) (Anonymous 1968) on Grass (Saha et al. 1982); *Myzus persicae* (Atwal et al. 1969; Rao et al. 1970; Sethumadhavan and Dharmadhikari, 1969) on *Mirabilis jalapa*, *Raphanus sativa* (Saha et al. 1982), *Descorina sofia* (Takada and Rishi 1980); *Sitobion avenae eleusinae* (Theobald) (Atwal et al. 1969), *Macrosiphum rosaeformis* on *Rosa* sp. (Saha et al. 1982); Unidentified Aphids (Bhagat and Ahmad 1991).

Distribution. Assam (Rao et al. 1969); Himachal Pradesh (Saha et al. 1982; Batra and Wahdi 1962); Jammu and Kashmir (Bhagat and Ahmad 1991; Rao et al. 1970; Takada and Rishi 1980); Karnataka (Sethumadhavan and Dharmadhikari 1969; Rao et al. 1969, 1970); Manipur (Subhrani et al. 2006); Meghalaya (Stary and Ghosh 1975, 1978); Punjab (Atwal et al. 1969, 1971); Sikkim (Agarwala et al. 1980); Uttar Pradesh (Anonymous 1968; Rao et al. 1970; Singh et al. 1999; Das and Chakrabarti 1990; Akhtar et al. 2006).

IX. Genus *Diaeretus* Foerster

Diaeretus Foerster, 1862: 249. Type species: *Aphidius leucopterus* Haliday.

57. *Diaeretus leucopterus* (Haliday)

Aphidius leucopterus Haliday, 1834: 103.

Aphidius expectatus Gautier and Bonnamour, 1936: 74.

Host. *Eulachnus thunbergii* Wilson on *Pinus* sp. (Stary and Ghosh 1975).

Distribution. Meghalaya (Stary and Ghosh 1975).

X. Genus *Ephedrus* Haliday

Ephedrus Haliday, 1833: 261, 485. Type species: *Bracon plagiator* Nees.

Elassus Wesmael 1835: 248. Type species: *Aphidius parvicornis* Nees.

Ephedrus Haliday subg. *Ephedrus* s. str., Stary 1958: 66-67. Type species: *Ephedrus (Ephedrus) plagiator* (Nees).

Ephedrus Haliday subg. *Lysephedrus* Stary, 1958: 64. Type species: *Ephedrus (Lysephedrus) validus* (Haliday).

58. *Ephedrus cerasicola* Stary

Ephedrus (Ephedrus) cerasicola Stary, 1962: 92.

Host. *Aphis gossypii* on *Solanum melongena* (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006).

59. *Ephedrus dioscoreae* Bhagat

Ephedrus dioscoreae Bhagat, 1982b: 113-117.

Host. *Acyrtosiphon pisum* on *Pisum sativum* (Subhrani et al. 2006); *Aphis* sp. on *Dioscorea deltoidea* (Bhagat 1982b).

Distribution. Jammu and Kashmir (Bhagat 1982b); Manipur (Subhrani et al. 2006).

60. *Ephedrus lacertosus* (Haliday)

Aphidius (*Ephedrus*) *lacertosus* Haliday, 1833: 486.

Host. *Dactynotus minatii* Das, Raychaudhuri and Raychaudhuri on *Delphinium* sp. (Saha et al. 1982); *Myzus persicae*, *Neomyzus circumflexus* (Rao 1969); *Macrosiphum miscanthi* (Saha et al. 1982; Stary and Ghosh 1983); *Takecallis himalayensis* Chakrabarti on Bamboo (Das and Chakrabarti 1989a); Unidentified aphid (Sharma and Subba Rao 1964).

Distribution. Himachal Pradesh (Saha et al. 1982); Uttar Pradesh (Stary and Ghosh 1983; Das and Chakrabarti 1989a).

61. *Ephedrus laevicollis* (Thomson)

Aphidius (*Elassus*) *laevicollis* Thomson, 1895: 2332.

Ephedrus laevicollis Dalla Torre, 1898: 16. (Misspelled).

Ephedrus minor Stelfox, 1944: 235-236.

Host. *Cavariella aegopodii* (Scopoli) on *Salix hastate* (Das and Chakrabarti 1991a); *Cavariella* sp. on *Salix alba* (Takada and Rishi 1980); *Lipaphis erysimi* on *Brassica Juncea* var. *rugose* (Subhrani et al. 2006).

Distribution. Jammu and Kashmir (Takada and Rishi 1980); Manipur (Subhrani et al. 2006); Uttar Pradesh (Das and Chakrabarti 1991a).

62. *Ephedrus nacheri* Quilis

Ephedrus nacheri Quilis, 1934: 17-19.

Host. *Hayhurstia atriplicis* on *Chenopodium album*, *Melanaphis arundinariae* (Takahashi) on *Pyrus pashia* (Das and Chakrabarti 1990).

Distribution. Uttar Pradesh (Das and Chakrabarti 1990).

63. *Ephedrus niger* Gautier, Bonnamour and Gaumont

Ephedrus niger Gautier, Bonnamour and Gaumont, 1929: 200-201.

Ephedrus (*Ephedrus*) *campestris* Stary, 1962: 87-91.

Host. *Macrosiphoniella sanborni* (Shuja-Uddin 1978b) on *Chrysanthemum* sp. (Stary and Ghosh 1975; Ghosh and Agarwala 1982); *Uroleucon pseudotanaceti* (Verma) on *Chrysanthemum* sp. (Stary and Ghosh 1975); *Uroleucon* sp. on *C. morifolium* (Takada and Rishi 1980); Unidentified aphids (Rishi 1976).

Distribution. Meghalaya (Stary and Ghosh 1975); Jammu and Kashmir (Rishi 1976; Shuja-Uddin 1978b; Takada and Rishi 1980; Ghosh and Agarwala 1982).

64. *Ephedrus persicae* Froggatt

Ephedrus persicae Froggatt, 1904: 611-612.

Ephedrus nevadensis Baker, 1909: 23.

Ephedrus nitidus Gahan, 1917: 195.

Ephedrus vidali Quilis, 1931: 72-74.

Ephedrus pulchellus Stelfox, 1941: 133-139.

Ephedrus interstitialis Watanabe, 1941: 139-140.

Ephedrus impressus Granger, 1949: 412.

Ephedrus (*Ephedrus*) *holmani* Stary, 1958: 63.

Ephedrus (*Ephedrus*) *palaestinensis* Mackauer, 1959b: 867-868.

Host. *Aphis craccivora* (Stary and Bhagat 1978); *A. gossypii*, *A. ruborum longisetosus* *Hyperomyzus lactucae* (Linnaeus), *Myzus persicae* (Stary and Ghosh 1983); *M. sorbi* on *Sorbaria tomentosa* (Das and Chakrabarti 1990); Unidentified aphids (Rishi 1976).

Distribution. Himachal Pradesh (Stary and Ghosh 1983); Jammu and Kashmir (Rishi 1976; Stary and Bhagat 1978); Meghalaya (Stary and Ghosh 1983).

65. *Ephedrus plagiator* (Nees)

Bracon plagiator Nees, 1811: 17.

Aphidius parvicornis Nees, 1834: 16.

Ephedrus japonicus Ashmead, 1906: 187.

Host. *Acyrtosiphon pisum* on *Pisum sativum* (Agarwala et al. 1980; Subhrani et al. 2006); *Aphis craccivora* on *Dolichos lablab* (Subhrani et al. 2006); *A. citricola* on *Bidens pilosa* (Rao et al. 1969); *A. fabae* on *Urtica* sp. (Saha et al. 1982); *A. gossypii* (Rao et al. 1969; Stary and Ghosh 1978) on *Tagetes erecta* (Singh et al. 1999), *Spiraea* sp. (Stary and Ghosh 1978); *A. spiraeicola* on *Spiraea* sp., *Brachycaudus helichrysi* on *Gynura crepidioides* (Stary and Ghosh 1978); *Ceratovacuna silvestrii* on *Saccharum officinarum* (Raychaudhuri et al. 1979); *Hyperomyzus carduellinus* (Theobald) on *Emilia sonchifolia* (Saha et al. 1982); *Lipaphis erysimi* on *Brassica oleracea* var. *capitata* (Subhrani et al. 2006); *Myzus persicae* on *Solanum tuberosum* Agarwala et al. 1980); *S. nigrum* (Agarwala 1983b), *Brassica oleracea* (Raychaudhuri et al. 1979); *Antirrhinum majus* and Phlox (Stary and Ghosh 1978); *Prociphilus* sp. on *Lonicera quinquelocularis* (Bhagat 1982a); *Macrosiphum rosaeiformis* on *Rosa* sp. (Agarwala et al. 1980); *Macrosiphum rosae* on *Rosa cania* (Raychaudhuri et al. 1978), *Tetraneura* sp. on *Ailantus altissima* (Bhagat 1982a).

Distribution. Bihar (Stary and Ghosh 1983); Himachal Pradesh (Saha et al. 1982); Jammu and Kashmir (Bhagat 1982a; Rishi 1976); Manipur (Subhrani et al. 2006); Meghalaya (Stary and Ghosh 1978, 1983); Sikkim (Agarwala et al. 1980; Raychaudhuri et al. 1979; Stary and Ghosh 1983); Uttar Pradesh (Singh et al. 1999); West Bengal (Agarwala 1983b; Rao et al. 1969; Raychaudhuri et al. 1978, 1979).

66. *Ephedrus srinagarensis* Stary and Bhagat

Ephedrus srinagarensis Stary and Bhagat, 1978: 388-390.

Host. *Aphis gossypii* on *Solanum melongena* (Subhrani et al. 2006); *Myzus* sp on *Lonicera quinquelocularis* (Stary and Bhagat 1978); *Prociphilus* sp. on *Lonicera quinquelocularis* (Bhagat 1982a; Das and Chakrabarti 1990); Unidentified aphids on *Cotoneaster* sp. (Das and Chakrabarti 1990).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978; Bhagat 1982a); Manipur (Subhrani et al. 2006); Uttar Pradesh (Das and Chakrabarti 1990).

67. *Ephedrus urticae* Bhagat

Ephedrus urticae Bhagat, 1982b: 113-117.

Host. *Microlophium carnosum* (Buckton) on *Urtica dioica* (Bhagat 1982b).

Distribution. Jammu and Kashmir (Bhagat 1982b).

68. *Ephedrus* sp.

Host. *Aphis citricola* (Stary and Ghosh 1983); *Aphis ruborum longisetosus* on *Rubus ellipticus* (Stary and Ghosh 1975); *A. solanella*, *A. spiraeicola* on *Spiraea* sp. *Aulacorthum* sp. (Stary and Ghosh 1983); *Lipaphis erysimi* (Stary and Ghosh 1983) on *Brassica oleracea* var. *capitata* (Subhrani et al. 2006); *Myzus dycei* on *Utricaceae* sp.; *Toxoptera aurantii* (Stary and Ghosh 1983); Unidentified aphids (Rishi 1976).

Distribution. Himachal Pradesh (Stary and Ghosh 1983); Jammu and Kashmir (Rishi 1976); Manipur (Subhrani et al. 2006); Meghalaya (Stary and Ghosh 1975, 1983); Sikkim (Stary and Ghosh 1983).

XI. Genus *Indaphidius* Stary

Indaphidius Stary, 1979: 34-37. Type species: *Indaphidius curvicaudatus* Stary.

69. *Indaphidius curvicaudatus* Stary

Indaphidius curvicaudatus Stary, 1979: 34-37.

Indaphidius carvicaudatus Stary in Raychaudhuri et al. 1979: 163-166. (Misspelled).

Host. *Mollitrichosiphum* (*Metatrichosiphon*) *nandii* Basu on *Alnus nepalensis* (Raychaudhuri et al. 1979); *M. alni* Ghosh, Ghosh and Raychaudhuri on *A. nepalensis* (Agarwala 1983b); *Mollitrichosiphum*

sp. (Stary 1979); *Macrosiphum rosae* (Stary 1979) on *Rosa* sp. (Raychaudhuri et al. 1979; Agarwala 1983b)

Distribution. Sikkim (Raychaudhuri et al. 1979); West Bengal (Stary 1979; Raychaudhuri et al. 1979; Agarwala 1983b; Stary and Ghosh 1983).

XII. Genus *Indoephedrus* Samanta, Pramanik and Raychaudhuri

Indoephedrus Samanta, Pramanik and Raychaudhuri 1983a: 1-8. Type species: *Indoephedrus neoficicola* Samanta, Pramanik and Raychaudhuri.

70. *Indoephedrus neoficicola* Samanta, Pramanik and Raychaudhuri

Indoephedrus neoficicola Samanta, Pramanik and Raychaudhuri 1983a: 1-8.

Host. *Greenidea neoficicola* Ghosh, Ghosh and Raychaudhuri on *Psidium guyava* (Samanta et al. 1983a).

Distribution. Meghalaya (Samanta et al. 1983a).

71. *Indoephedrus reticulate* Samanta, Pramanik and Raychaudhuri

Indoephedrus reticulate Samanta, Pramanik and Raychaudhuri 1983a: 1-8.

Host. *Greenidea neoficicola* on *Psidium guyava* (Samanta et al. 1983a).

Distribution. Meghalaya (Samanta et al. 1983a).

XIII. Genus *Kashmiria* Stary and Bhagat

Kashmiria Stary and Bhagat, 1978: 387-393. Type species: *Kashmiria aphidis* Stary and Bhagat.

72. *Kashmiria aphidis* Stary and Bhagat

Kashmiria aphidis Stary and Bhagat, 1978: 387-393.

Host. *Myzus* sp. on *Lonicera quinquelocularis* (Stary and Bhagat 1978); *Prociphilus* sp. on *Lonicera quinquelocularis* (Bhagat 1982a; Das and Chakrabarti 1990).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978; Bhagat 1982); Uttar Pradesh (Das and Chakrabarti 1990).

XIX. Genus *Lipolexis* Foerster

Lipolexis Foerster, 1862: 249. Type species: *Lipolexis gracilis* Foerster.

Gynocryptus Quilis, 1931: 27-28. Type species: *Gynocryptus pieltaini* Quilis.

73. *Lipolexis gracilis* Foerster

Lipolexis gracilis Foerster, 1862: 249.

Gynocryptus pieltaini Quilis, 1931: 27-28.

Aphidius palpator Gautier and Bonnamour, 1931: 166-167.

Lipolexis chinensis Chen, 1980a: 169-172.

Host. *Aphis craccivora* on *Solanum nigrum*, *Robinia pseudoaccia* (Bhagat and Ahmad 1991); *Liosomaphis himalayensis* on *Berberis pseudambulata* (Takada and Rishi 1980) *Lipaphis erysimi* (Sharma and Subba Rao 1964); *Therioaphis trifolii* (Monell) (Stary and Ghosh 1983); Unidentified Aphids on *Cajanus cajan* (Sharma and Subba Rao 1964).

Distribution. Delhi (Sharma and Subba Rao 1964); Jammu and Kashmir (Bhagat and Ahmad 1991; Takada and Rishi 1980; Stary and Ghosh 1983); Punjab (Sharma and Subba Rao 1964).

74. *Lipolexis myzakkaiae* Pramanik and Raychaudhuri

Lipolexis myzakkaiae Pramanik and Raychaudhuri, 1984: 1-4.

Host. *Myzakkaia verbasci* (Chowdhuri, Basu, Chakrabarti and Raychaudhuri) on *Polygonum* sp. (Pramanik and Raychaudhuri, 1984).

Distribution. Nagaland (Pramanik and Raychaudhuri, 1984).

75. *Lipolexis pseudoscutellaris* Pramanik and Raychaudhuri

Lipolexis pseudoscutellaris Pramanik and Raychaudhuri, 1984: 1-4.

Host. *Aphis gossypii* on *Colocasia antiquorum*; *Toxoptera aurantii* on *Rhus similiata*, *T. citricidus* on *Coffea arabica* (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006); Nagaland (Pramanik and Raychaudhuri 1984).

76. *Lipolexis oregmae* (Gahan)

Diaeretus oregmae Gahan, 1932: 736-757.

Lipolexis oregmae (Gahan), Stary, 1960b: 109-111.

Lipolexis scutellaris Mackauer, 1962: 37-45.

Lipolexis oregmae (Gahan), Miller et al. 2002: 83-107.

Host. *Aphis fabae* on *Vicia faba* (Agarwala et al. 1980); *A. citricola* (Anonymous 1967; Dharmadhikari and Ramaseshiah 1970; Ramaseshiah 1979; Rao et al. 1969, 1970); *A. craccivora* (Dharmadhikari and Ramaseshiah 1970; Stary and Bhagat 1978; Stary and Ghosh 1983) on *Benincasa hispida*, *Cassia fistula* (Singh et al. 1999), *Dolichos lablab*, *Vicia faba* (Subhrani et al. 2006); *A. gossypii* (Dharmadhikari and Ramaseshiah 1970; Stary and Ghosh 1983) on *Rumex* sp. (Das and Chakrabarti 1991), *Capsicum frutescens* (Subhrani et al. 2006), *Solanum melongena*, *Syzygium guajava* (Singh et al. 1999), *Cosmos* sp. *Hibiscus rosasinensis*, *Eupatorium* sp. (Stary and Ghosh 1975); *A. nasturtii* on *Luffa cylindrical*, *Tectona grandis* (Singh et al. 1999); *A. nerii* (Dharmadhikari and Ramaseshiah 1970); *A. ruborum longisetosus* on *Rubus ellipticus* (Stary and Ghosh 1975); *A. solanella* (Rao et al. 1969); *A. spiraeicola* (Dharmadhikari and Ramaseshiah 1970) on *Eupatorium odoratum* (Stary and Ghosh 1975); *Aphis* sp. (Dharmadhikari and Ramaseshiah 1970; Stary and Ghosh 1983); *Greenidea formosana* (Maki) (Dharmadhikari and Ramaseshiah 1970); *Lisomaphis himalayensis* on *Berberis* sp. (Das and Chakrabarti 1991a); *Myzus persicae* on *Capsicum frutescens*, *Solanum melongena* (Singh et al. 1999); *Rhopalosiphum maidis* (Dharmadhikari and Ramaseshiah 1970); *Toxoptera aurantii* on *Rhus similiata* (Subhrani et al. 2006); *T. citricidus* on *Citrus* sp., *Zanthoxylum* sp. (Stary and Ghosh 1975), *Coffea arabica* (Subhrani et al. 2006); *T. odinae* (van der Goot) (Stary and Ghosh 1983) on *Erodia trifolia* and *Viburnum foetidum* (Stary and Ghosh 1979); *Tuberolachnus salignus* on *Salix* sp. (Stary and Ghosh 1975).

Distribution. Jammu and Kashmir (Rishi 1976; Stary and Ghosh 1978); Karnataka (Dharmadhikari and Ramaseshiah 1970; Rao et al. 1969, 1970); Manipur (Subhrani et al. 2006); Meghalaya (Stary and Ghosh 1975, 1978, 1979, 1983); Sikkim (Agarwala et al. 1980); Tripura (Stary and Ghosh 1983); Uttar Pradesh (Singh et al. 1999; Anonymous 1968; Das and Chakrabarti 1991a); West Bengal (Rao et al. 1969, 1970; Stary and Ghosh 1983).

XV. Genus *Lysiphlebia* Stary and Schlinger

Lysiphlebia Stary and Schlinger, 1967: 68-69. Type species: *Lysiphlebus japonicus* Ashmead.

77. *Lysiphlebia mirzai* Shuja-Uddin, 1975a

Lysiphlebia mirzai Shuja-Uddin, 1975a: 415-417.

Lysiphlebia sacchari Chen, 1980b: 141-144.

Host. *Hyalopterus pruni* on *Phragmites kerke* (Singh et al. 1999); *Longiunguis sacchari* (Zehntner) on Sugarcane (Shuja-Uddin 1975a); *Melanaphis sacchari* (Zehntner) on *Pennisetum glaucum*, *Saccharum officinarum*, *Sorghum bicolor*, *Zea mays*; *Rhopalosiphum maidis* (Tripathi and Singh 1990) on *Pennisetum glaucum*, *Triticum aestivum*, *Zea mays*; *Schizaphis graminum* on *Pennisetum glaucum*, *Zea mays* (Singh et al. 1999).

Distribution. Uttar Pradesh (Shuja-Uddin 1975a; Tripathi and Singh 1990; Singh et al. 1999).

78. *Lysiphlebia rugosa* Stary and Schlinger

Lysiphlebia rugosa Stary and Schlinger, 1967: 72-73.

Host. *Brachycaudus helichrysi* on *Gnaphalium* sp. (Saha et al. 1982).

Distribution. Himachal Pradesh (Saha et al. 1982).

79. *Lysiphlebia* sp.

Host. *Brachycaudus helichrysi* on *Gnaphalium* sp. (Subhrani et al. 2006).

Distribution. Manipur (Subhrani et al. 2006).

XV. Genus *Lysiphlebus* Foerster

Lysiphlebus Foerster, 1862: 249, 250. Type species: *Aphidius* (= *Bracon*) *dissolutus* (Nees).
Aphidaria Provancher, 1888: 396. Type species: *Aphidaria basilaris* Provancher.

80. *Lysiphlebus confusus* Tremblay and Eady

Lysiphlebus confusus Tremblay and Eady, 1978: 180-184.

Host. *Myzus dycei* on *Urtica* sp. (Saha et al. 1982); Unidentified aphid (Rishi 1976).

Distribution. Jammu and Kashmir (Rishi 1976); Himachal Pradesh (Saha et al. 1982).

81. *Lysiphlebus delhiensis* (Subba Rao and Sharma)

Aphidius (*Lysiphlebus*) *delhiensis* Subba Rao and Sharma, 1960b: 82-83.

Host. *Longiungus sacchari* (Ramaseshiah and Menon 1971) on Sugarcane (Subba Rao and Sharma 1960b), *Melanaphis indosacchari* David (Varma et al. 1978) *M. sacchari* on *Pennisetum glaucum*, *Sorghum bicolor*, *Zea mays* (Singh et al. 1999); *Melanaphis* sp. on Grass (Das and Chakrabarti 1989a); *Rhopalosiphum maidis* on *Pennisetum glaucum*, *Triticum aestivum*, *Zea mays*; *Schizaphis graminum* on *Pennisetum glaucum*, *Zea mays* (Singh et al. 1999).

Distribution. Assam (Ramaseshiah and Menon 1971); Delhi (Subba Rao and Sharma 1960b); Uttar Pradesh (Das and Chakrabarti 1989a; Singh et al. 1999).

82. *Lysiphlebus testaceipes* (Cresson)

Trioxya testaceipes Cresson, 1880: 208.

Aphidius citraphis Ashmead, 1880: 71.

Adialytus maidaphidis Garman, 1885: 31.

Aphidius flavicoxa Ashmead, 1889: 23.

Aphidaria basilaris Provancher, 1888: 396-397.

Lysiphlebus minutus Ashmead, 1889: 663, 664.

Lysiphlebus piciventris Ashmead, 1889: 664.

Lysiphlebus cucurbitaphidis Ashmead, 1889: 665.

Lysiphlebus aragrostaphidis Ashmead, 1889: 665.

Lysiphlebus coquilletti Ashmead, 1889: 665-666.

Lysiphlebus myzi Ashmead, 1889: 666-667.

Lysiphlebus gossypii Ashmead, 1889: 667.

Lysiphlebus abutilaphidis Ashmead, 1889: 667-668.

Lysiphlebus tritici Ashmead, 1889: 668.

Lysiphlebus persicaphidis Ashmead, 1889: 668.

Lysiphlebus gossypii Ashmead, 1889: 667.

Lysiphlebus baccharaphidis Ashmead, 1889: 668-669.

Aphidius persiaphis Cook in Cook and Davis, 1891: 2.

Lysiphlebus coquilletii Gahan, 1910: 183.

Lysiphlebus baccarhaphidis Gahan, 1910: 183, 184.

Aphidius (*Lysiphlebus*) *chrysoaphidis* Smith, 1944: 78-79.

Host. *Aphis craccivora* on *Dolichos lab lab*; *Lipaphis erysimi* (Ramaseshiah et al. 1969).

Distribution. Karnataka (Ramaseshiah et al. 1969).

83. *Lysiphlebus* sp.

Host. *Melanaphis sacchari* (Singh and Shukla 1966); Unidentified Aphids (Narayanan et al. 1958).

Distribution. India (Narayanan et al. 1958; Singh and Shukla 1966).

XVII. Genus *Monoctonus* Haliday

Aphidius Nees, 1819, subg. *Monoctonus* Haliday, 1833: 261, 487. Type species: *Aphidius* (*Monoctonus*) *caricis* Haliday.

Aphidileo Rondani, 1848: 14. Type species: *Aphidius resolutus* Nees.

Monoctonus Haliday, 1833, subg. *Falciconus* Mackauer, 1959c: 180. Type species: *Aphidius pseudoplatani* Marshall.

Harkeria Cameron, 1900: 537. Type species: *Harkeria rufa* Cameron.

Monoctonus Haliday, 1833. subg. *Monoctonus* s. str., Stary, 1959: 241-242. Type species: *Aphidius* (*Monoctonus*) *caricis* Haliday.

Monoctonus Haliday, 1833. subg. *Paramonctonus* Stary, 1959: 238-239. Type species: *Monoctonus* (*Paramonctonus*) *angustivalvus* Stary.

84. *Monoctonus nervosus* (Haliday)

Aphidius (*Monoctonus*) *nervosus* Haliday, 1833: 488.

Monoctonus biroi Gyorfi, 1958: 132.

Monoctonus (*Monoctonus*) *breviantennalis* Stary, 1958: 242-243.

Host. Unidentified Aphids (Agarwala et al. 1981a).

Distribution. Himachal Pradesh (Agarwala et al. 1981a).

85. *Monoctonus* sp.

Host. *Liosomaphis* sp. (Stary and Ghosh 1983); *Macrosiphoniella oblonga* (Mordvilko) on *Artemisia vestite* (Rishi 1976), Unidentified aphids (Takada and Rishi 1980).

Distribution. Jammu and Kashmir (Rishi 1976; Takada and Rishi, 1980; Stary and Ghosh 1983).

XVIII. Genus *Neophedrus* Samanta, Tamili, Saha and Raychaudhuri, 1983

Neophedrus Samanta, Tamili, Saha and Raychaudhuri, 1983b: 93-96. Type species: *Neophedrus helichrysi* Samanta, Tamili, Saha and Raychaudhuri.

86. *Neophedrus helichrysi* Samanta, Tamili, Saha and Raychaudhuri

Neophedrus helichrysi Samanta, Tamili, Saha and Raychaudhuri, 1983b: 93-96.

Host. *Brachycaudus helichrysi* on *Poaceae* Plant (Samanta et al. 1983b).

Distribution. West Bengal (Samanta et al. 1983b).

87. *Neophedrus kalimpongensis* Samanta, Tamili, Saha and Raychaudhuri

Neophedrus kalimpongensis Samanta, Tamili, Saha and Raychaudhuri, 1983b: 93-96.

Host. *Myzus persicae* on *Foeniculum vulgare* (Samanta et al. 1983b).

Distribution. West Bengal (Samanta et al. 1983b).

XIX. Genus *Pauesia* Quilis

Pauesia Quilis, 1931: 67-69. Type species: *Pauesia albuferensis* Quilis.

Aphidius Nees, 1819, subg. *Paraphidius* Stary, 1958: 56, 91. Type species: *Aphidius californicus* Ashmead.

88. *Pauesia antennata* (Mukerji)

Aphidius antennatus Mukerji, 1950: 33-34.

Host. *Rhopalosiphum nymphaeae* (Linnaeus) (Agarwala et al. 1981b).

Distribution. NE India (Agarwala et al. 1981b).

89. *Pauesia arcuata* Stary and Raychaudhuri

Pauesia (*Paraphidius*) *arcuata* Stary and Raychaudhuri, 1982: 297-304.

Host. *Cinara abieticola tenuipes* Chakrabarti and Ghosh on *Pinus* sp. (Stary and Raychaudhuri 1982).

Distribution. Himachal Pradesh (Stary and Raychaudhuri 1982).

90. *Pauesia gulgargensis* Bhagat

Pauesia (*Paraphidius*) *gulgargensis* Bhagat, 1981b: 197-199.

Host. *Cinara* sp. on *Abies pindrow* (Bhagat 1981b).

Distribution. Jammu and Kashmir (Bhagat 1981b).

91. *Pauesia hazratbalensis* Bhagat

Pauesia (*Kashmirpauesia*) *azratbalensis* Bhagat, 1981b: 197-199.

Host. *Lochnus* sp. on *Biota orientalis* (Bhagat 1981b).

Distribution. Jammu and Kashmir (Bhagat 1981b).

92. *Pauesia himalayensis* Bhagat

Pauesia (*Paraphidius*) *himalayensis* Bhagat, 1981b: 197-199.

Host. *Lachnus tropicalis* on *Pinus excelsa* (Bhagat 1981b).

Distribution. Jammu and Kashmir (Bhagat 1981b).

93. *Pauesia indica* Stary

Pauesia (*Paraphidius*) *indica* Stary in Stary and Raychaudhuri, 1977: 233-235.

Host. *Lachnus tropicalis* on *Litsea sebifera* (Raychaudhuri et al. 1978), *Lachnus tropicalis* (Stary and Raychaudhuri 1977).

Distribution. Manipur (Stary and Raychaudhuri 1977; Raychaudhuri et al. 1978)

94. *Pauesia lachniella* Das and Chakrabarti

Pauesia (*Paraphidius*) *lachniella* Das and Chakrabarti, 1989b: 339-343.

Host. *Lachnus tropicalis* on *Quercus dealbata* (Das and Chakrabarti 1989b).

Distribution. Uttar Pradesh (Das and Chakrabarti 1989b).

95. *Pauesia laricis* (Haliday)

Aphidius (*Aphidius*) *laricis* Haliday, 1834: 97.

Host. *Cinara atrotibialis* David & Rajasingh on *Pinus* sp. (Stary and Ghosh 1975).

Distribution. Meghalaya (Stary and Ghosh 1975).

96. *Pauesia mashobrica* Stary and Raychaudhuri

Pauesia (*Pauesia*) *mashobrica* Stary and Raychaudhuri, 1982: 297-304.

Host. *Cinara confinis tenuipes* Chakrabarti and Ghosh on *Pinus* sp. (Stary and Raychaudhuri 1982).

Distribution. Himachal Pradesh (Stary and Raychaudhuri 1982).

97. *Pauesia orientalis* Das and Chakrabarti

Pauesia (*Paraphidius*) *orientalis* Das and Chakrabarti, 1989b: 339-343.

Host. *Cinara maculipes* Hille Ris Lambers on *Pinus excelsa* (Das and Chakrabarti 1989b).

Distribution. Uttar Pradesh (Das and Chakrabarti 1989b).

98. *Pauesia pini* (Haliday)

Aphidius (*Aphidius*) *pini* Haliday, 1834: 96.

Aphidius lachnivorus Ashmead, 1906: 189.

Host. *Cinara lachnirostris* Hille Ris Lambers on *Pinus excelsa* and *P. wallichiana*; *Cinara* sp. on *Pinus* sp. (Bhagat 1981b).

Distribution. Jammu and Kashmir (Rishi and Bhagat 1980; Bhagat 1981b).

XX. Genus *Praon* Haliday

Aphidius Nees, 1819, subg. *Praon* Haliday, 1833: 483. Type species: *Bracon exolentus* Nees.

Bracon Nees, 1811, subg. *Achoristus* Ratzeburg, 1852: 31-32. Type species: *Bracon* (*Achoristus*) *aphidiiformis* Ratzeburg.

Aphidaria Provancher, 1886: 151. Type species: *Aphidaria simulans* Provancher.

Parapraon Stary, 1983: 206. Type species: *Praon gallicum* (Stary).

99. *Praon abjectum* Haliday

Aphidius (*Praon*) *abjectum* Haliday, 1833: 485.

Bracon (*Achoristus*) *aphidiiformis* Ratzeburg, 1852: 11.

Host. *Aphis craccivora* on *Dolichos lab lab* (Dharmadhikari and Ramaseshiah 1970); *Rhopalosiphum nymphaeae* (Stary and Bhagat 1978).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978); Karnataka (Dharmadhikari and Ramaseshiah 1970).

100. *Praon absinthii* Bignell

Praon absinthii Bignell, 1894: 255.

Praon absynthii Dalla Torre, 1898: 16. (Misspelled).

Host. *Aphis gossypii* and *Uroleucon* sp. on *Artemisia vulgaris* (Dharmadhikari and Ramaseshiah 1970).

Distribution. Meghalaya (Dharmadhikari and Ramaseshiah 1970).

101. *Praon dorsale* (Haliday)

Aphidius (*Praon*) *dorsale* Haliday, 1833: 484.

Blacus discolor Nees, 1834: 192-193.

Praon collaris Foerster, 1867: 124.

Praon longicorne Marshall, 1896: 536-537.

Host. *Acyrtosiphon gossypii* Mordvilko (Subba Rao and Sharma 1960a; Mackauer 1968).

Distribution. Jammu and Kashmir (Subba Rao and Sharma 1960a; Mackauer 1968).

102. *Praon himalayensis* Das and Chakrabarti

Praon himalayensis Das and Chakrabarti, 1989c: 339-343.

Host. *Callaphis juglandis* (Goeze) on *Juglans regia* (Das and Chakrabarti 1989c).

Distribution. Uttar Pradesh (Das and Chakrabarti 1989c).

103. *Praon hyperomyzus* Saha, Poddar, Das, Agarwala and Raychaudhuri

Praon hyperomyzus Saha, Poddar, Das, Agarwala and Raychaudhuri, 1982: 1-12.

Host. *Hyperomyzus carduellinus* on *Emilia sonchifolia* (Saha et al. 1982).

Distribution. Himachal Pradesh (Saha et al. 1982).

104. *Praon kashmirensis* Bhagat

Praon kashmirensis Bhagat, 1982b: 113-117.

Host. *Chaitophorus pakistanicus* on *Salix* sp. (Bhagat 1982b).

Distribution. Jammu and Kashmir (Bhagat 1982b).

105. *Praon mollitrichosiphi* Agarwala, Saha and Mahapatra

Praon mollitrichosiphi Agarwala, Saha and Mahapatra, 1987: 329-333.

Host. *Mollitrichosiphum tenuicarpus* (Okajima) on *Quercus* sp. (Agarwala et al. 1987).

Distribution. Sikkim (Agarwala et al. 1987).

106. *Praon myzophagum* Mackauer

Praon myzophagum Mackauer, 1959a: 847-849.

Host. *Aphis citricola* (Dharmadhikari and Ramaseshiah 1970); *A. gossypii* on tobacco (Rao et al. 1969) and *Lantana camara* (Rao 1969); *Myzus persicae* (Dharmadhikari and Ramaseshiah 1970).

Distribution. Karnataka (Dharmadhikari and Ramaseshiah 1970); Meghalaya (Rao 1969); West Bengal (Rao et al. 1969; Dharmadhikari and Ramaseshiah 1970).

107. *Praon necans* Mackauer

Praon necans Mackauer, 1959a: 839-841.

Praon nymphaeae Subba Rao et al. 1963: 189-191.

Host. *Rhopalosiphum nymphaeae* (Subba Rao et al. 1963).

Distribution. Punjab (Subba Rao et al. 1963).

108. *Praon orientale* Stary and Schlinger

Praon orientale Stary and Schlinger, 1967: 100-103.

Host. *Uroleucon* sp. on *Sanchus aevensis* and *Sanchus* sp. (Das and Chakrabarti 1991a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991a).

109. *Praon pubescens* Stary

Praon pubescens Stary, 1961: 340-341.

Host. *Nasonovia* sp. on *Sitobilanthes* sp. (Das and Chakrabarti 1991a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991a).

110. *Praon stagona* Takada and Rishi

Praon stagona Takada and Rishi, 1980: 234-240.

Host. *Stagona* sp. on *Lonicera quinquelocularis* (Takada and Rishi 1980).

Distribution. Jammu and Kashmir (Takada and Rishi 1980).

111. *Praon volucre* (Haliday)

Aphidius (*Praon*) *volucre* Haliday, 1833: 484.

Host. *Lipaphis erysimi* (Stary and Ghosh 1983); *Sitobion* sp. on *Rosa* sp. (Das and Chakrabarti 1991a); *Myzus* sp. (Stary and Bhagat 1978).

Distribution. Delhi (Subba Rao and Sharma 1960a); Himachal Pradesh (Stary and Ghosh 1983); Jammu and Kashmir (Subba Rao and Sharma 1960a; Stary and Bhagat 1978); Uttar Pradesh (Das and Chakrabarti 1991a).

112. *Praon* sp.

Host. *Aphis craccivora* on *Dolichos lab lab* (Stary and Ghosh 1978); *Brachycaudus helichrysi* on *Prunus domestica* (Stary and Ghosh 1978); *Macrosiphoniella spinipes* Basu on *Artemisia* sp. (Stary and Ghosh 1975); *Macrosiphoniella* sp. (Stary and Bhagat 1978); *Myzus ornatus* (Stary and Ghosh 1983); *M. persicae* on *Antirrhinum majus*, Phlox; *Myzus* sp. on Rubiaceae Plant (Stary and Ghosh 1978); *Rhopalosiphum nymphaeae* on *Rosa* sp.; *Macrosiphum pachysiphon* Hille Ris Lambers (Stary and Ghosh 1978); *Macrosiphum rosaeformis* on *Rosa* sp. (Stary and Ghosh 1975); Unidentified Aphids (Rishi 1976).

Distribution. Jammu and Kashmir (Rishi 1976; Stary and Bhagat 1978); Meghalaya (Stary and Ghosh 1975, 1978, 1983); Uttar Pradesh (Singh et al. 1999).

XXI. Genus *Toxares* Haliday

Aphidius Nees, 1819, subg. *Trionyx* Haliday, 1833: 261, 487. Type species: *Aphidius* (*Trionyx*) *deltiger* Haliday.

Toxares Haliday in Westwood, 1840: 65. Type species: *Aphidius* (*Trionyx*) *deltiger* Haliday.

113. *Toxares deltiger* (Haliday)

Aphidius (*Trionyx*) *deltiger* Haliday, 1833: 461, 487.

Toxares deltiger Haliday in Westwood, 1840: 65.

Ephedrus flaveolus Györfi, 1958: 131.

Host. *Aphis spiraeicola* on *Hibiscus* sp.; *Brachycaudus helichrysi* on *Prunus domestica*; *Brachycaudus* sp.; *Capitophorus hippophaes indicus* on *Polygonum chinensis* (Stary and Ghosh 1979); *Hyperomyzus* sp.; *Lachnus tropicalis*; *Macrosiphoniella* sp.; *Metopolophium euryae* (Takahashi) on *Euryae acuminata* (Stary and Bhagat 1978); *Myzus obtusirostris* David, Narayanan & Rajasingh; *M. ornatus*; *M. persicae* on *Gynura crepidoides*, *Solanum khasyanum* (Stary and Ghosh 1978); *Rhopalosiphum nymphaeae* on *Pyrus communis* (Stary and Ghosh 1979); *Schizaphis rotundiventris* on *Pyrus communis* (Stary and Ghosh 1978); Unidentified Aphids (Rishi 1976; Rishi and Bhagat 1980; Stary and Ghosh 1983).

Distribution. Jammu and Kashmir (Rishi 1976; Rishi and Bhagat 1980; Stary and Bhagat 1978); Meghalaya (Stary and Ghosh 1978, 1983; Stary and Bhagat 1978); West Bengal (Stary and Ghosh 1983).

114. *Toxares macrosiphophagum* Shuja-Uddin

Toxares macrosiphophagum Shuja-Uddin, 1974: 269-272.

Host. *Aphis citricola*; *A. solanella*; *Brachycaudus helichrysi*; *Brachycaudus* sp.; *Capitophorus hippophaes indicus*; *Hyperomyzus* sp.; *Lachnus tropicalis* (Stary and Ghosh 1983); *Macrosiphoniella sanborni* on *Chrysanthemum* sp. (Shuja-Uddin 1974); *Macrosiphoniella* sp.; *Metopolophium euryae*; *Myzus obtusirostris*; *M. ornatus*; *M. persicae*; *Rhopalosiphum nymphaeae*; *Schizaphis rotundiventris*; Unidentified Aphids (Stary and Ghosh 1983).

Distribution. Jammu and Kashmir (Shuja-Uddin 1974; Stary and Ghosh 1983); Meghalaya, West Bengal (Stary and Ghosh 1983).

115. *Toxares shigai* Takada

Toxares shigai Takada, 1965: 17-18.

Host. *Aphis farinosa* on *Salix alba* (Takada and Rishi 1980); *Brachycaudus helichrysi* on *Prunus* sp. (Stary and Ghosh 1975); *Chaitophorus leucomelas* Koch on *Salix alba* (Takada and Rishi 1980); *Macrosiphoniella sanborni* (Dharmadhikari and Ramaseshiah 1970); *Mysus persicae* (Stary and Ghosh 1975); *Uroleucon tanacetii* (Linnaeus) on *Chrysanthemum leucanthium*; Unidentified Aphids (Dharmadhikari and Ramaseshiah 1970; Rishi 1976).

Distribution. Jammu and Kashmir (Takada and Rishi 1980); Karnataka (Dharmadhikari and Ramaseshiah 1970); Meghalaya (Stary and Ghosh 1975).

116. *Toxares zakai* Shuja-Uddin

Toxares zakai Shuja-Uddin, 1974: 272-273.

Host. *Myzus persicae* on *Solanum nigrum* (Shuja-Uddin 1974).

Distribution. Jammu and Kashmir (Shuja-Uddin 1974).

117. *Toxares* sp.

Host. *Shinjia orientalis* (Mordvilko) on Fern (Das and Chakrabarti 1991a).

Distribution. Uttar Pradesh (Das and Chakrabarti 1991a).

XXII. Genus *Trioxy*s Haliday

Aphidius Nees, 1819, subg. *Trioxy*s Haliday, 1833: 261-488. Type species: *Aphidius cirsii* Curtis.

Misaphidius Rondani, 1877: 185. Type species: *Misaphidius aphidiperda* Rondani.

Neuropenes Provancher, 1886: 151, 153. Type species: *Trioxy*s *compressicornis* Ruthe.

*Trioxy*s Haliday, 1833. subg. *Fissicaudus* Stary and Schlinger, 1967: 122. Type species: *Trioxy*s (*Binodoxys*) *confucius* Mackauer.

*Trioxy*s Haliday, 1833. subg. *Pectoxy*s Mackauer, 1960b: 145-155. Type species: *Trioxy*s (*Trioxy*s) *macroceratus* Mackauer.

*Trioxy*s Haliday, 1833. subg. *Trioxy*s s. str. Mackauer, 1959b: 149. Type species: *Aphidius cirsii* Curtis.

118. *Trioxy*s *areolatus* Samanta, Tamili and Raychaudhuri

*Trioxy*s (*Fissicaudus*) *areolatus* Samanta, Tamili and Raychaudhuri, 1985: 4, 118-120.

Host. *Greenidea ficicola* on *Ficus*; *Artemisia* sp. (Samanta et al. 1985).

Distribution. Meghalaya (Samanta et al. 1985).

119. *Trioxy*s *auctus* (Haliday)

Aphidius (*Trioxy*s) *auctus* Haliday, 1833: 489.

Host. *Shivaphis celti* on *Celtis australis* (Dharmadhikari and Ramaseshiah 1970).

Distribution. Meghalaya (Dharmadhikari and Ramaseshiah 1970).

120. *Trioxy*s *pallidus* (Haliday)

Aphidius (*Trioxy*s) *pallidus* Haliday, 1833: 489.

Aphidius callipteri Marshall, 1896: 609-610.

*Trioxy*s *pulcher* Gautier and Bonnamour, 1924: 43-44.

Host. *Chromaphis juglandicola* (Kaltenbach) on *Juglans regia* (Shuja-Uddin 1982).

Distribution. Jammu and Kashmir (Shuja-Uddin 1982).

121. *Trioxy*s *peniculatus* Agarwala, Saha and Mahapatra

*Trioxy*s (*Trioxy*s) *peniculatus* Agarwala, Saha and Mahapatra, 1985: 103-105.

Host. *Cervaphis schouteniae* Van der Goot on *Microcos peniculatus* (Agarwala et al. 1985).

Distribution. Tripura (Agarwala et al. 1985).

122. *Trioxys rishii* Stary and Bhagat

Trioxys (Trioxys) rishii Stary and Bhagat, 1978: 389-391.

Host. *Brachycaudus* sp. on *Carduus* sp. (Stary and Bhagat 1978).

Distribution. Jammu and Kashmir (Stary and Bhagat 1978; Rishi and Bhagat 1980).

123. *Trioxys rosaecola* Bhagat

Trioxys (Trioxys) rosaecola Bhagat, 1982c: 321-324.

Host. *Myzaphis rosarum* (Kaltenbach) on *Rosa webbiana* (Bhagat 1982c).

Distribution. Jammu and Kashmir (Bhagat 1982c).

124. *Trioxys soporensis* Shuja-Uddin

Trioxys (Trioxys) soporensis Shuja-Uddin, 1982: 146-149.

Host. *Shivaphis* sp. on *Celtis* sp. (Shuja-Uddin 1982).

Distribution. Jammu and Kashmir (Shuja-Uddin 1982).

125. *Trioxys* sp.

Host. *Aphis citricola*; *A. craccivora* on *Robinia* sp.; *Aphis* sp. (Stary and Ghosh 1983); *Brachycaudus* sp. (Stary and Bhagat 1978); *Macrosiphoniella spinipes* on *Chrysanthemum* sp. (Stary and Ghosh 1978); *Melanaphis donacis* (Passerini) (Stary and Ghosh 1983); *Mollitrichosiphum tenuicarpus* on Fagaceae Plant (Stary and Ghosh 1978); *Toxoptera aurantii* (Stary and Ghosh 1983); *T. citricidus* (Stary and Ghosh 1983); *Tuberculatus indicus* on *Quercus griffithi* (Stary and Ghosh 1978); Unidentified Aphids (Dharmadhikari and Ramaseshiah 1970; Rishi, 1976; Stary and Ghosh 1983).

Distribution. Himachal Pradesh (Stary and Ghosh 1983); Jammu and Kashmir (Dharmadhikari and Ramaseshiah 1970; Rishi, 1976; Stary and Ghosh 1983; Stary and Bhagat 1978); Meghalaya (Stary and Ghosh 1975, 1983).

Conclusions

In India, this subfamily is represented by 125 species belonging to twenty two genera under four tribes viz., tribe Ephedrini with 4 genera viz. *Toxares*, *Ephedrus*, *Indoephedrus* and *Neoephedrus*; tribe Praini with 2 genera viz., *Areopraon* and *Praon*; tribe Aphidiini with 12 genera viz., *Adialytus*, *Aphidius*, *Archaphidus*, *Diaeretiella*, *Diaeretus*, *Indaphidius*, *Kashmiria*, *Lipolexis*, *Lysiphlebia*, *Lysiphlebus*, *Monoctonus* and *Pauesia* and tribe Trioxini with 4 genera viz., *Betuloxys*, *Binodoxys*, *Cristicaudus* and *Trioxys* occurring from the plains to very high altitudes of Himachal Pradesh, Jammu and Kashmir, West Bengal. An analysis of the literature reveals that as many as 95 species have been reported from North West India from the states of Bihar, Delhi, Himachal Pradesh, Jammu and Kashmir, Punjab, Uttar Pradesh and West Bengal; 41 species from the states of north east India viz., Assam, Manipur, Meghalaya, Nagaland, Sikkim and Tripura and 13 species from south India viz., Karnataka and Tamil Nadu. The genus *Aphidius* is the most diverse being represented by the greatest number of species followed by genus *Binodoxys*.

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