International Journal of Entomology Research
www.entomologyjournals.com
ISSN: 2455-4758
Received: 28-08-2022, Accepted: 13-09-2022, Published: 29-09-2022
Volume 7, Issue 9, 2022, Page No. 141-147

Updated checklist of aphids infesting oaks, beeches and chestnuts (Fagaceae: Angiosperms) in India

Rajendra Singh*, Abhilasha Srivastava
Department of Zoology, Deendayal Upadhyay University of Gorakhpur, Uttar Pradesh, India

Abstract
The present paper deals with the association of aphids with the plants belonging to the family Fagaceae, in India. Sixteen species of plants of this family were found infested with 89 species of aphids belonging to 31 genera and 6 subfamilies, such as Aphidinae (Tribe Aphidini: 5 species; Tribe Macrosiphini: 3 species), Calaphidinae (Tribe Calaphidini: 5 species; Myzocallinini: 7 species), Eriosomatinae (Pemphigini: 1 species), Greenideinae (Cervaphidini: 2 species; Greenideini: 46 species), Hormaphidinae (Cerataphidini: 1 species; Nipponaphidini: 12 species) and Lachninae (Lachnini: 4 species; Tuberolachnini: 3 species) in India. Maximum number of plant species are associated with aphids belonging to the tribe Greenideini while highest number of aphid species (23 aphid species) are colonised on *Lithocarpus dealbatus* Rehder followed by *Quercus incana* W. Bartram (10 aphid species), *Quercus rubra* L. (5 aphid species) and less than 5 number of species on rest of the plant species (Table 1). The highest number of plant species (7 plant species) were colonised by *Eutrichosiphum khasyanum* (Ghosh & Raychaudhuri) followed by *Eutrichosiphum pasaniae* (Okajima), *Eutrichosiphum pseudopasaniae* Szelegiewicz, and *Lachnus tropicalis* (van der Goot) (5 plant species of each); and rest of the species colonise less than 5 plant species. Among 89 species of aphids colonised on fagaceous plants, 55 species of aphids are associated with its single species.

Keywords: host plant association, aphid-food plant checklist, fagaceae, aphididae

Introduction

The Fagaceae (Order Fagales) is a family of angiosperms that comprises beeches, chestnuts and oaks consisting of 10 genera with about 1300 species [1] distributed both in temperate and tropics of the world. The members of the family are mostly deciduous in temperate region while are evergreen trees and shrubs in tropics. They are characterized by having alternate simple leaves with pinnate venation, unisexual flowers in the form of catkins, and fruit in the form of cup-like (cupule) nuts. Fagaceae is one of the most ecologically and economically important plant families. Several species of oak (*Quercus* spp.), chestnut (*Castanea* spp.), and beech (*Fagus* spp.) are commonly used as timber for floors, furniture, cabinets, cork for stopping wine bottles and wine barrels. A number of species are cultivated as ornamentals. In India, 53 species are known under 4 genera [2].

The aphids (Hemiptera: Sternorrhyncha: Aphidomorpha: Aphidoidea: Aphididae) are less than 7 mm long, soft-bodied plant sap-sucking insects. They are cosmopolitan in distribution but most abundant in temperate climates. More than 250 species of aphids are known to spoil agricultural and horticultural crops [3]. They either directly harm the plants via sucking their nutrients causing reduced vigour or indirectly harm by secreting high amount of honeydew that blocks stomata reducing normal plant physiology, and transmitting viral diseases [4, 5]. Small size, thelytokous parthenogenetic viviparity, complex life-cycles with alternation of sexual and asexual generations, host plant alternation, polymorphism, short and telescopic generations are the major traits that make aphids highly prolific in reproduction attaining pest status very quickly [6, 7]. At present all true aphids belong to a single family Aphididae which consists of 23 subfamilies, and 5109 species under 527 genera [8]. In India, 794 species of aphids under 208 genera are reported out of which about 385 are endemic [9].

Checklists are species catalogues where taxa are organised hierarchically according to the classification. It allows us to come up with meaningful action steps and make wise decisions to achieve biodiversity protection. The cataloguing of aphids and its host plants is essential as several aphid species are notorious pests of crops and need urgent attention. Raychaudhury [10] was the first to catalogue the food plants of Indian aphids updated by Chakrabarti & Sarkar [11]. Later on, the food plant catalogue of Indian species of aphids was updated in series of articles [12-25]. Recently, the association of food plants with aphids of several plant families/orders, e.g. Fabaceae, Brassicaceae, Polygonaceae, Solanaceae, Lamiales, Sapindales, Caryophyllales and Santalales, monocots families and basal and core eudicots were compiled by us [26-30]. In this series of publications, the present paper deals with the association of aphids with the plants belonging to the beech, chestnuts and oak family, Fagaceae, in India.

Materials and Methods

This checklist is based on the literature published in recent past books, journals and few authentic theses and websites up to 5 September, 2022. Attempts have been made to provide the valid scientific name following [22] for the aphids and World Flora Online [1] and Botanical Survey of India [2] for the plants. It may unavoidably include some percentage of misidentifications, both of aphids and their host plants. Some aphid species may also be vagrant individuals [11]. The names of aphids, as well as plants that were misspelt in the original records have been corrected where we logically ascertain the intended species. Multiple

references are omitted citing only 1-2 references of each record.

Results and Discussion

The following checklist demonstrates that at least 16 species of plants of the family Fagaceae are associated with 89 species of aphids belonging to 31 genera and 6 subfamilies, such as Aphidinae (Tribe Aphidini: 5 species; Tribe Macrosiphini: 3 species), Calaphidinae (Tribe Calaphidini: 5 species; Myzocallinini: 7 species), Eriosomatinae (Pemphigini: 1 species), Greenideinae (Cervaphidini: 2 species; Greenideini: 46 species), Hormaphidinae (Cerataphidini: 1 species; Nipponaphidini: 12 species) and Lachninae (Lachnini: 4 species; Tuberolachnini: 3 species) in India. Maximum number of plant species are associated with aphids belonging to the tribe Greenideini (Table 1) while maximum number of aphid species (23 aphid species) are colonised on *Lithocarpus dealbatus* Rehder followed by *Quercus incana* W. Bartram (10 aphid species), *Quercus rubra* L. (5 aphid species) and less than 5 number of species on rest of the plant species (Table 1).

Table 1: Number of aphid species belonging to different subfamilies/tribes infesting plants in the family Fagaceaein India

Subfamiles/tribes of Aphididae		Number of aphid species		Number of plant species infested		
Subfamilies	Tribes	Genera	Species	Genera	Species	Indetermined species
Aphidinae	Aphidini	1	5	2	2	4
	Macrosiphini	3	3	1	0	3
Calaphidinae	Calaphidini	3	5	2	0	5
	Myzocallidini	4	7	2	6	6
Eriosomatinae	Pemphigini	1	1	1	0	1
Greenideinae	Cervaphidini	2	2	1	3	2
	Greenideini	4	46	3	12	48
Hormaphidinae	Cerataphidini	1	1	1	1	0
	Nipponaphidini	8	12	3	5	8
Lachninae	Lachnini	2	4	3	5	3
	Tuberolachnini	1	3	1	0	3

The highest number of plant species (7 plant species) were colonised by *Eutrichosiphum khasyanum* (Ghosh & Raychaudhuri) followed by *Eutrichosiphum pasaniae* (Okajima), *Eutrichosiphum pseudopasaniae* Szelegiewicz, and *Lachnus tropicalis* (van der Goot) (5 plant species of each); and rest of the species colonise less than 5 plant species. Among 89 species of aphids colonised on fagaceous plants, 55 species of aphids are associated with its single species.

Following are the updated aphid wise as well as plant wise checklist of aphids infesting the plants belonging to the Fagaceae in India.

1. Aphid wise-Plant wise Checklist

A. Subfamily: **Aphidinae**

1. Tribe: **Aphidini**

1. *Aphis (Aphis) fabae* Scopoli, **1763**
- *Quercus* sp. [18]

2. *Aphis (Aphis) gossypii* Glover, **1877**
- *Quercus serrata* Thunb. [12]

3. *Aphis* (*Toxoptera*) *aurantii* Boyer de Fonscolombe, **1841**
- *Lithocarpus dealbatus* Rehder [12]
- *Quercus* sp. [12]

4. *Aphis (Toxoptera) citricidus* (Kirkaldy, **1907)**
- *Quercus* sp. [12]

5. *Aphis (Toxoptera) odinae* (van der Goot, **1917)**
- *Quercus serrata* Thunb. [12]
- *Quercus* sp. [12]

2. Tribe: **Macrosiphini**

6. *Brachycaudus (Brachycaudus) helichrysi* (Kaltenbach, **1843)**
- *Quercus* sp. [19]

7. *Longicaudus himalayensis* Hille Ris Lambers, **1965**
- *Quercus* sp.[20]

8. *Sinomegoura citricola* (van der Goot, **1917)**
- *Quercus* sp. [21]

B. Subfamily: **Calaphidinae**

i. Tribe: **Calaphidini**

9. *Betacallis odaiensis* Takahashi, **1961**
- *Quercus* sp. [22, 31]

10. *Betacallis querciphaga* Basu, **Ghosh & Raychaudhuri 1974**
- *Quercus* sp. [22, 31]

11. *Betacallis sikkimensis* Basu, **Ghosh & Raychaudhuri 1974**
- *Quercus* sp. [22, 31]

12. *Neobetulaphis chaetosiphon* Quednau & Chakrabarti 1980
- *Quercus* sp. [22, 31]

13. *Taoia indica* (Ghosh & Raychaudhuri 1972)
- *Castanopsis* sp. [22]

ii. Tribe: **Myzocallidini**

14. *Hoplocallis microsetosa* (Quednau & Chakrabarti 1976)
- *Quercus incana* W. Bartram [22, 32]

15. *Myzocallis (Globulicaudaphis) pakistanica* Hille Ris Lambers, **1966**
- *Quercus* sp. [22]

16. *Myzocallis (Neodryomyzus) polychaeta* David, **1969**
- *Lithocarpus dealbatus* Rehder [33, 34]
- *Quercus semicarpifolia* Sm. [22]
- *Quercus* sp. [22]

17. *Myzocallis* sp.
- *Quercus griffithii* Hook.f, Thoms. ex Miq. [22]

18. *Serratocallis takahashii* Quednau & Chakrabarti 1976
- *Quercus incana* W. Bartram [11, 22]
- *Quercus semicarpifolia* Sm. [22, 33]
- *Quercus* sp. [22, 32]

19. *Tuberculatus (Acanthotuberculatus) indicus* Ghosh 1972
- *Quercus acutissima* Carruth. [22, 35]
- *Quercus griffithii* Hook.f, Thoms. ex Miq. [22, 35]

- *Quercus serrata* Thunb. [22, 35]
- *Quercus* sp. [22]

20. *Tuberculatus (Orientuberculoides) nervatus* Chakrabarti & Raychaudhuri 1976
- *Quercus serrata* Thunb. [22, 35]
- *Quercus* sp. [22]

21. *Tuberculatus (Orientuberculoides) paiki* Hille Ris Lambers, 1972 (1974)
- *Quercus serrata* Thunb. [22, 35]
- *Quercus* sp. [22]

C. Subfamily: **Eriosomatinae**

1. Tribe: **Pemphigini**

22. *Pemphigus (Pemphiginus) bursarius* (Linnaeus, 1758)
- *Quercus* sp. [23]

D. Subfamily: **Greenideinae**

1. Tribe: **Cervaphidini**

23. *Cervaphis quercus* Takahashi, 1918
- *Quercus acutissima* Carruth. [24, 35]
- *Quercus griffithii* Hook.f, Thoms. ex Miq. [24]
- *Quercus serrata* Thunb. [24, 36]
- *Quercus* sp. [24]

24. *Sumatraphis celti* Takahashi, 1935
- *Quercus* sp. [24]

2. Tribe: **Greenideini**

25. *Allotrichosiphum assamense* Raychaudhuri, Ghosh Banerjee & Ghosh 1973
- *Lithocarpus dealbatus* Rehder [24, 37]

26. *Eutrichosiphum alnicola* (Basu, 1968)
- *Quercus incana* W. Bartram [24, 38]
- *Quercus semicarpifolia* Sm. [11]
- *Quercus* sp. [38]

27. *Eutrichosiphum arunachali* Basu, Ghosh & Raychaudhuri 1972
- *Quercus* sp. [24]

28. *Eutrichosiphum binsorensis* Das & Ghosh 2002
- *Quercus* sp. [24, 39]

29. *Eutrichosiphum blackmani* Agarwala & Ghosh 1993
- *Quercus* sp. [24, 36]

30. *Eutrichosiphum davidi* Raychaudhuri 1956
- *Quercus rubra* L. [24, 40]
- *Quercus serrata* Thunb. [24, 41]
- *Quercus* sp. [24, 31]

31. *Eutrichosiphum dubium* (van der Goot, 1917)
- *Castanopsis* sp. [24, 36]
- *Lithocarpus dealbatus* Rehder [24, 36]
- *Quercus glauca* Thunb. [31, 41]
- *Quercus* sp. [24]

32. *Eutrichosiphum flavum* (Takahashi, 1941)
- *Castanopsis* sp.[36]
- *Lithocarpus dealbatus* Rehder [24, 31]
- *Quercus* sp. [24]

33. *Eutrichosiphum jugeshwari* Singh Raychaudhuri & Raychaudhuri 1979
- *Quercus* sp. [36]

34. *Eutrichosiphum khasyanum* (Ghosh & Raychaudhuri 1962)
- *Castanopsis* sp. [24]
- *Lithocarpus dealbatus* Rehder [24, 42]
- *Lithocarpus fenestratus* Rehder [31, 43]
- *Quercus griffithii* Hook.f, Thoms. ex Miq. [31, 44]
- *Quercus incana* W. Bartram [24, 42]
- *Quercus serrata* Thunb. [24]
- *Quercus* sp. [24]

35. *Eutrichosiphum kumaoni* Chakrabarti & Debnath, 2009
- *Castanopsis* sp. [24, 45]

36. *Eutrichosiphum manipurense* Singh, Raychaudhuri & Raychaudhuri 1979
- *Quercus* sp. [24, 46]

37. *Eutrichosiphum mukerjii* (Raychaudhuri, Ghosh, Banerjee & Ghosh 1973)
- *Quercus* sp. [36, 46]

38. *Eutrichosiphum neoalnicola* Raychaudhuri, Ghosh & Das, 1980
- *Castanopsis* sp. [38]
- *Quercus* sp. [38, 42]

39. *Eutrichosiphum neotattakanum* Agarwala & Ghosh 1993
- *Castanopsis* sp. [36]

40. *Eutrichosiphum pasaniae* (Okajima, 1908)
- *Quercus coccinea* Münchh. [24]
- *Quercus incana* W. Bartram [24]
- *Quercus montana* Willd. [24]
- *Quercus serrata* Thunb. [24]
- *Quercus* sp. [24]

41. *Eutrichosiphum pseudopasaniae* Szelegiewicz, 1968
- *Castanopsis tribuloides* A. DC. [24]
- *Lithocarpus dealbatus* Rehder [24]
- *Quercus rubra* L. [24]
- *Quercus serrata* Thunb. [24]
- *Quercus* sp. [42]

42. *Eutrichosiphum pyri* Chakrabarti, Ghosh & Raychaudhuri 1972
- *Quercus semicarpifolia* Sm. [11]
- *Quercus* sp. [44]

43. *Eutrichosiphum quercifoliae* Raychaudhuri, Ghosh, Banerjee & Ghosh 1973
- *Quercus* sp. [24]

44. *Eutrichosiphum querciphaga* Chakrabarti & Maity, 1980
- *Quercus* sp. [47]

45. *Eutrichosiphum rameshi* (Raychaudhuri, Chatterjee & Raychaudhuri 1977)
- *Lithocarpus dealbatus* Rehder [48]

46. *Eutrichosiphum raychaudhurii* (Ghosh 1969)
- *Quercus* sp. [31]

47. *Eutrichosiphum russellae* (Ghosh, Ghosh & Raychaudhuri 1971)
- *Castanopsis* sp. [36]
- *Lithocarpus dealbatus* Rehder [48]
- *Quercus* sp. [36]

48. *Eutrichosiphum tapatii* Mandal, Chatterjee & Raychaudhuri 1979
- *Quercus serrata* Thunb. [24]
- *Quercus* sp. [38]

49. *Eutrichosiphum tattakanum* (Takahashi, 1925)
- *Quercus* sp. [24]

50. *Eutrichosiphum tattakanum assamense* Ghosh & Raychaudhuri 1962
- *Lithocarpus dealbatus* Rehder [24, 36]
- *Quercus acutissima* Carruth. [24, 36]
- *Quercus coccinea* Münchh. [24, 36]
- *Quercus* sp. [24]

51. *Eutrichosiphum* sp.
- *Castanopsis tribuloides* A. DC. [24]
- *Quercus* sp. [24]

52. *Greenidea (Greenidea) ayyari* Raychaudhuri Ghosh Banerjee & Ghosh 1973
- *Quercus* sp. [24]

53. *Greenidea (Greenidea) decaspermi* Takahashi, 1933
- *Quercus* sp. [36]

54. *Greenidea (Greenidea) ficicola* Takahashi, 1921
- *Quercus* sp. [24]

55. *Greenidea (Greenidea) longirostris* Basu, 1969 (1970)
- *Quercus* sp. [31]

56. *Greenidea (Greenidea) querciphaga* Raychaudhuri Ghosh Banerjee & Ghosh 1973
- *Quercus* sp. [31]

57. *Greenidea (Trichosiphum) anonae* (Pergande, 1906)
- *Quercus* sp. [24]

58. *Greenidea (Trichosiphum) brachyunguis* Chatterjee, Mandal & Raychaudhuri 1981
- *Quercus* sp. [36]

59. *Greenidea (Trichosiphum) haldari* Maity & Chakrabarti 1980
- *Quercus incana* W. Bartram [45]
- *Quercus* sp. [49]

60. *Greenidea (Trichosiphum) kumaoni* Chakrabarti & Raychaudhuri 1978
- *Quercus* sp. [36, 44]

61. *Greenidea (Trichosiphum) manii* Ghosh, Basu & Raychaudhuri 1970
- *Quercus* sp. [24]

62. *Greenidea (Trichosiphum) prunicola* Ghosh, Basu & Raychaudhuri 1971
- *Lithocarpus dealbatus* Rehder [24]

63. *Greenidea (Trichosiphum) psidii* van der Goot, 1917
- *Quercus* sp. [11]

64. *Greenidea (Trichosiphum) quercicola* Basu, Ghosh & Raychaudhuri 1973
- *Lithocarpus dealbatus* Rehder [24, 31]
- *Quercus serrata* Thunb. [24, 36]
- *Quercus* sp. [24]

65. *Greenidea (Trichosiphum) sikkimensis* Raychaudhuri Ghosh Banerjee & Ghosh 1973
- *Castanopsis* sp. [24]
- *Quercus* sp. [24]

66. *Greenidea (Trichosiphum) spinotibium* Raychaudhuri & Chatterjee, 1977
- *Quercus* sp. [24]

67. *Greenidea* sp.
- *Lithocarpus dealbatus* Rehder [24]

68. *Greenideoida (Pentatrichosiphum) lutea* (Basu, 1969)
- *Quercus* sp. [24]

69. *Mollitrichosiphum (Metatrichosiphon) montanum* (van der Goot, 1917)
- *Quercus serrata* Thunb. [24]

70. *Mollitrichosiphum (Mollitrichosiphum) nigriabdominale* Agarwala, Mondal & Raychaudhuri 1982
- *Quercus rubra* L. [24, 50]

71. *Mollitrichosiphum (Mollitrichosiphum) tenuicorpus* (Okajima, 1908)
- *Castanopsis* sp. [36]
- *Quercus rubra* L. [24, 36]
- *Quercus serrata* Thunb. [24, 36]
- *Quercus* sp. [36]

72. *Mollitrichosiphum (Mollitrichosiphum) trilokum* Agarwala & Ghosh 1993
- *Quercus* sp. [36]

E. Subfamily: Hormaphidinae

1. Tribe: Cerataphidini

73. *Pseudoregma orientalis* (Agrawala, Mondal & Raychaudhuri 1982)
- *Quercus rubra* L. [25, 50]

2. Tribe: Nipponaphidini

74. *Indonipponaphis tuberculata* Ghosh & Raychaudhuri 1973
- *Lithocarpus dealbatus* Rehder [31, 51]

75. *Metanipponaphis assamensis* Ghosh & Raychaudhuri 1973
- *Castanopsis tribuloides* A. DC. [25, 31]

76. *Metanipponaphis echinata* Ghosh 1974
- *Castanopsis hystrix* A. DC. [25, 31]

77. *Neothoracaphis garhwalensis* Chakrabarti & Raha, 1985
- *Quercus incana* W. Bartram [52]
- *Quercus serrata* Thunb. [52]
- *Quercus* sp. [52]

78. *Neothoracaphis sutepensis* (Takahashi, 1941)
- *Quercus* sp. [25]

79. *Parathoracaphis manipurensis* (Pramanick, Samanta & Raychaudhuri 1983)
- *Castanopsis* sp. [25]

80. *Parathoracaphisella indica* Pramanick, Samanta & Raychaudhuri 1983
- *Quercus* sp. [25]

81. *Pseudothoracaphis himachali* Raychaudhuri Ghosh & Das, 1980
- *Quercus incana* W. Bartram [53]
- *Quercus* sp. [38]

82. *Reticulaphis distylii rotifera* Hille Ris Lambers & Takahashi, 1959
- *Quercus* sp. [38, 53]

83. *Schizoneuraphis querciphaga* (Ghosh & Raychaudhuri 1973)
- *Quercus* sp. [51]

84. *Thoracaphis kumaoni* Chakrabarti & Debnath, 2011
- *Quercus incana* W. Bartram [53]

85. *Thoracaphis quercifoliae* Ghosh 1988
- *Lithocarpus dealbatus* Rehder [25]

86. *Thoracaphis* sp.
- *Castanopsis* sp. [31]
- *Lithocarpus dealbatus* Rehder [31, 51]

F. Subfamily: Lachninae

1. Tribe: Lachnini

87. *Eulachnus thunbergii* (Wilson, 1919)
- *Lithocarpus dealbatus* Rehder [15, 31]

88. *Lachnus acutihirsutus* Kumar & Burkhardt, 1970
- Castanopsis indica A. DC [44]
- Lithocarpus dealbatus Rehder [54]
- Quercus incana W. Bartram [11, 15]

89. *Lachnus quercihabitans* (Takahashi, 1924)
- *Quercus* sp. [15]

90. *Lachnus tropicalis* (van der Goot, 1916)
- *Castanopsis* sp. [55]
- *Lithocarpus dealbatus* Rehder [55]
- *Lithocarpus elegans* (Blume) Hatus. Ex Soep. [55]
- *Quercus phillyraeoides* A. Gray [55]
- *Quercus* sp. [15]

2. Tribe: Tuberolachnini

91. *Nippolachnus bengalensis* Basu & Hille Ris Lambers, 1968

- *Quercus* sp. [38]

92. *Nippolachnus himalayensis* (van der Goot, 1917)

- *Quercus* sp. [38, 44]

93. *Nippolachnus piri* Matsumura, 1917

- *Quercus* sp. [38, 44]

2. Plant wise-Aphid wise Checklist (subgeneric name of the aphids and author names are excluded)

1. ***Castanopsis hystrix***: *Metanipponaphis echinata*
2. ***Castanopsis indica***: *Lachnus acutihirsutus*
3. ***Castanopsis tribuloides***: *Eutrichosiphum pseudopasaniae*, *Eutrichosiphum* sp., *Metanipponaphis assamensis*
4. ***Castanopsis*** spp.: *Eutrichosiphum dubium*, *Eutrichosiphum flavum*, *Eutrichosiphum khasyanum*, *Eutrichosiphum kumaoni*, *Eutrichosiphum neoalnicola*, *Eutrichosiphum neotattakanum*, *Eutrichosiphum russellae*, *Greenidea sikkimensis*, *Lachnus tropicalis*, *Mollitrichosiphum tenuicorpus*, *Parathoracaphis manipurensis*, *Taoia indica*, *Thoracaphis* sp.
5. ***Lithocarpus dealbatus***: *Allotrichosiphum assamense*, *Aphis aurantii*, *Eulachnus thunbergii*, *Eutrichosiphum dubium*, *Eutrichosiphum flavum*, *Eutrichosiphum khasyanum*, *Eutrichosiphum pseudopasaniae*, *Eutrichosiphum rameshi*, *Eutrichosiphum russellae*, *Eutrichosiphum tattakanum assamense*, *Greenidea prunicola*, *Greenidea quercicola*, *Indonipponaphis tuberculata*, *Lachnus tropicalis*, *Myzocallis polychaeta*, *Thoracaphis quercifoliae*
6. ***Lithocarpus elegans***: *Lachnus tropicalis*
7. ***Lithocarpus fenestratus***: *Eutrichosiphum khasyanum*
8. ***Quercus acutissima***: *Cervaphis quercus*, *Eutrichosiphum tattakanum assamense*, *Tuberculatus indicus*
9. ***Quercus coccinea***: *Eutrichosiphum pasaniae*, *Eutrichosiphum tattakanum assamense*
10. ***Quercus glauca***: *Eutrichosiphum dubium*
11. ***Quercus griffithii***: *Cervaphis quercus*, *Eutrichosiphum khasyanum*, *Myzocallis* sp., *Tuberculatus indicus*, *Tuberculatus indicus*
12. ***Quercus incana***: *Eutrichosiphum alnicola*, *Eutrichosiphum khasyanum*, *Eutrichosiphum pasaniae*, *Greenidea haldari*, *Hoplocallis microsetosa*, *Lachnus acutihirsutus*, *Neothoracaphis garhwalensis*, *Pseudothoracaphis himachali*, *Serratocallis takahashii*, *Thoracaphis kumaoni*
13. ***Quercus montana***: *Eutrichosiphum pasaniae*
14. ***Quercus phillyraeoides***: *Lachnus tropicalis*
15. ***Quercus rubra***: *Eutrichosiphum davidi*, *Eutrichosiphum pseudopasaniae*, *Mollitrichosiphum nigriabdominale*, *Mollitrichosiphum tenuicorpus*, *Pseudoregma orientalis*
16. ***Quercus semicarpifolia***: *Eutrichosiphum alnicola*, *Eutrichosiphum pyri*, *Myzocallis (Neodryomyzus) polychaeta*, *Serratocallis takahashii*
17. ***Quercus serrata***: *Aphis gossypii*, *Aphis odinae*, *Cervaphis quercus*, *Eutrichosiphum davidi*, *Eutrichosiphum khasyanum*, *Eutrichosiphum pasaniae*, *Eutrichosiphum pseudopasaniae*, *Eutrichosiphum tapatii*, *Greenidea quercicola*, *Mollitrichosiphum montanum*, *Mollitrichosiphum tenuicorpus*, *Neothoracaphis garhwalensis*, *Tuberculatus indicus*, *Tuberculatus nervatus*, *Tuberculatus paiki*
18. ***Quercus*** spp.: *Aphis fabae*, *Aphis aurantii*, *Aphis citricidus*, *Aphis odinae*, *Betacallis odaiensis*, *Betacallis querciphaga*, *Betacallis sikkimensis*, *Brachycaudus helichrysi*, *Cervaphis quercus*, *Eutrichosiphum alnicola*, *Eutrichosiphum arunachali*, *Eutrichosiphum binsorensis*, *Eutrichosiphum blackmani*, *Eutrichosiphum davidi*, *Eutrichosiphum dubium*, *Eutrichosiphum flavum*, *Eutrichosiphum jugeshwari*, *Eutrichosiphum khasyanum*, *Eutrichosiphum manipurense*, *Eutrichosiphum mukerjii*, *Eutrichosiphum neoalnicola*, *Eutrichosiphum pasaniae*, *Eutrichosiphum pseudopasaniae*, *Eutrichosiphum pyri*, *Eutrichosiphum quercifoliae*, *Eutrichosiphum querciphaga*, *Eutrichosiphum raychaudhurii*, *Eutrichosiphum russellae*, *Eutrichosiphum tapatii*, *Eutrichosiphum tattakanum*, *Eutrichosiphum tattakanum assamense*, *Greenidea ayyari*, *Greenidea decaspermi*, *Greenidea ficicola*, *Greenidea longirostris*, *Greenidea querciphaga*, *Greenidea anonae*, *Greenidea brachyunguis*, *Greenidea haldari*, *Greenidea kumaoni*, *Greenidea manii*, *Greenidea psidii*, *Greenidea quercicola*, *Greenidea sikkimensis*, *Greenidea spinotibium*, *Greenideoida lutea*, *Lachnus acutihitsutus*, *Lachnus quercihabitans*, *Lachnus tropicalis*, *Longicaudus himalayensis*, *Mollitrichosiphum tenuicorpus*, *Mollitrichosiphum trilokum*, *Myzocallis pakistanica*, *Myzocallis polychaeta*, *Neobetulaphis chaetosiphon*, *Neothoracaphis garhwalensis*, *Neothoracaphis sutepensis*, *Nippolachnus bengalensis*, *Nippolachnus himalayensis*, *Nippolachnus piri*, *Parathoracaphisella indica*, *Pemphigus bursarius*, *Pseudothoracaphis himachali*, *Reticulaphis distylii rotifera*, *Schizoneuraphis querciphaga*, *Serratocallis takahashii*, *Sinomegoura citricola*, *Sumatraphis celti*, *Tuberculatus indicus*, *Tuberculatus nervatus*, *Tuberculatus paiki*

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