

PSYLLIDAE OF THE INDIAN SUBCONTINENT

R. N. MATHUR

Retired Chief Research Officer, Division of Forest Protection,
Forest Research Institute, Dehra Dun



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II. ECOLOGY AND ECONOMIC IMPORTANCE

HABITS AND DAMAGE

THE collections studied reveal that the Indian fauna is very rich in species of Psyllidae, but because of their small size and active habits they have been overlooked and our knowledge of their distribution is far from sufficient. They are relatively very specific in their selection of host plants, and exhibit considerable diversity in habits, as some are free living while others are gall makers. The insects are phytophagous in both nymphal and adult stages. Sometimes their infestations are localised and it is difficult to say why it is so.

The adults are generally very active and capable of jumping and flying, and some species are sluggish like *Apsylla cistellata* (Buckt.). The free-living species (Plate 2) move about on the host plant and feed on the younger leaves and shoots suitable for inserting their stylets through which the sap is sucked. They breed continuously during the growing season so long as new buds or foliage are available. The nymphal stages are often covered in a small mass of flocculent matter (Plate 2), produced usually from the caudal end of the abdomen. They also secrete an abundance of a sweet, sticky substance known as honey dew which on falling on the lower branches and leaves causes a disagreeable condition, especially when a black, sooty mould develops and thus seriously injuring the tree.

Many species cause plant deformities in the form of regular galls, blisters or pits (Plates 1, 3, 4, 5, 6) on leaves and stems. Gall-makers usually produce the same type of gall on the host plants and such galls are abundant, colourful and often grotesque upon individual trees or plants. The physiology of gall-formation is still obscure (Mani, 1964) and it is generally believed that a secretion from the nymph stimulates gall formation. The galls are usually formed on meristematic tissue and are the result of abnormal cell multiplication. The pit galls generally occur on the under surface of the leaf and appear as roughened elevations on the upper side. The nymphs of some species cause a distortion and folding of the leaves. One or both margins of the leaves are rolled into the mid-rib on the upper surface and the rolled margins gradually become thickened and hard like a gall. The nymphs remain sheltered in these rolled leaves and are often covered with a copious secretion of white wax. Large round drops of liquid excrement with their surface coated with powdered wax and fragments of wax threads, are also present in these rolled leaves. Several kinds of ants, honey bees and wasps frequently visit these leaves and feed on the honey dew for their food. The mature nymphs crawl out of the gall when it dehisces or leave the shelter of the roll, and shed their last skin and this moulting is more commonly performed on the surface of an older leaf. Evidently, there are five moults and the earlier shedding of skins is done inside the gall or roll. Adults are translucent white at emergence and their colouration develops fully after feeding for some time. The renewal of vegetative activity of the host plant determines the emergence of adult psyllids of the gall-forming species.

In the forest, a natural control is brought about by certain biotic agencies, e.g. parasites, mostly by chalcids and few braconids; by predatory insects like Coccinellids, Syrphids, Chrysopids and predatory mites and spiders.

ECONOMIC IMPORTANCE

Comparatively little injury is caused to the forest vegetation by these sap-sucking insects. In natural forest the general incidence of psyllids is low, but heavy infestation by free-living and gall-making psyllids is fairly common on individual trees or on small groups that are subnormal in health. In seedbeds and in artificial regeneration areas, on the other hand, the damage done by psyllids can be serious. Their feeding is detrimental to the plant as they drain away the vital food and water or disseminate plant diseases. The leaves become chlorotic and smaller than normal and ultimately fall off. The gall-forming species appear to be more injurious than the free-living types in that the affected buds, shoots and leaves are put out of action and are not replaced by later growth. The free-living species with short life-cycles are more characteristic of trees with a prolonged vegetative period and are capable of infesting the successive flushes of foliage under favourable weather conditions.

Psyllid species are more common in forests and over 100 species have been taken on 95 species of trees and other vegetation growing in the forest. A few species attack fruit trees such as apple, *Citrus* spp., *Cordia* spp., *Grewia asiatica* (*phalsa*), *jaman*, mango, pear and *Zizyphus jujuba* (*ber*). *Arytaina punctipennis* Crawford is destructive to indigo (*Indigofera* spp.) seriously in some seasons. On pumpkin, *Pauropsylla tuberculata* Crawford has been recorded at Pusa, Bihar.

From the available records a host-psyllid list and a psyllid-host list are given below for the sake of ready reference.

TABLE I. HOST-PSYLLID LIST

List showing the host plants attacked by the species of Psyllidae

Host plants	Species of Psyllidae
<i>Atriplex</i> sp.	...
<i>Albizia chinensis</i> (= <i>A. stipulata</i>)	...
<i>A. odoratissima</i>	...
<i>A. procera</i>	...
<i>Alstonia scholaris</i>	...
<i>Anthocephalus indicus</i> (= <i>A. cadamba</i>)	...
<i>Bauhinia variegata</i>	...
<i>Bombax ceiba</i> (= <i>B. malabaricum</i>)	...
<i>Buchanania lanzan</i> (= <i>B. latifolia</i>)	...
	<i>Trioza obliqua</i> Thom.
	<i>Arytaina spinosa</i> , sp. n.
	<i>Psylla oblonga</i> , sp. n.
	<i>Acizzia indica</i> Hes. -Harr.
	<i>Arytaina spinosa</i> , sp. n.
	<i>Psylla hyalina</i> , sp. n.
	<i>Pauropsylla tuberculata</i> Crawf.
	<i>P. reticulata</i> , sp. n.
	<i>Psylla simlae</i> Crawf.
	<i>Tenaphalara acutipennis</i> Kuw.
	<i>Pauropsylla longispiculata</i> , sp. n.

Host plants	Species of Psyllidae	
<i>Bucklandia populnea</i> (= <i>Syningtonia populnea</i>)	<i>Psylla longigena</i> , sp. n.	
<i>Cassia fistula</i>	<i>Euphalerus vittatus</i> Crawl.	
<i>C. siamea</i>	<i>Psylla hyalina</i> , sp. n.	
<i>Cedrela toona</i>	{ <i>P. bengalensis</i> , sp. n. <i>P. cedrelae</i> Kieff. <i>P. eastopi</i> , sp. n.	
		<i>Trioza obliqua</i> Thoms.
		<i>Arytaina ramakrishni</i> Crawl.
<i>Chenopodium album</i>	<i>Psylla cedrelae</i> Kieff.	
<i>Chloroxylon swietenia</i>	<i>Pauropsylla depressa</i> Crawl.	
<i>Chukrasia velutina</i>	{ <i>Diaphorina citri</i> Kuw. <i>D. communis</i> , sp. n.	
<i>Cinnamomum</i> sp.		
<i>Citrus</i> spp.	<i>D. cardiae</i> Crawl.	
<i>Cordia grandis</i> (= <i>C. cordata</i>)	<i>Psylla crataegi</i> Schrank.	
<i>C. myxa</i>		
<i>C. obliqua</i>		
<i>Crataegus</i> sp.	<i>Arytaina obscura</i> Crawl.	
<i>Dalbergia sissoo</i>	<i>Trioza obsoleta</i> (Buckt.)	
<i>Diospyros melanoxylon</i>	<i>T. lobata</i> , sp. n.	
<i>D. tomentosa</i>		
<i>Duabanga grandiflora</i>	<i>Diaphorina dunensis</i> , sp. n.	
<i>Ehretia acuminata</i>	<i>Trioza vitiensis</i> Crawl.	
<i>Eugenia malaccensis</i>	<i>Paurocephala psylloptera</i> Crawl.	
<i>Ficus asperrima</i>	<i>P. psylloptera</i> Crawl.	
<i>F. hispida</i>	<i>Pauropsylla ficicola</i> Kieff.	
<i>F. hookeri</i>	<i>Psausia indica</i> , sp. n.	
<i>F. lucescens</i> (= <i>F. infectoria</i>)	{ <i>Ceropsylla fulvida</i> , sp. n. <i>Macrohomotoma geniculata</i> , sp. n. <i>Psausia indica</i> , sp. n.	
<i>F. microcarpa</i> (= <i>F. retusa</i>)		
<i>F. nervosa</i>		
<i>F. racemosa</i> (= <i>F. glomerata</i>)	<i>Dynopsylla grandis</i> Crawl.	
<i>F. religiosa</i>	{ <i>Pauropsylla depressa</i> Crawl. <i>P. purpurescens</i> , sp. n.	
<i>F. roxburghii</i>		
<i>F. rumphii</i>	<i>Psausia distincta</i> (Crawl.)	
<i>Ficus</i> sp.	<i>Pauropsylla ficicola</i> Kieff.	
	<i>Macrohomotoma striata</i> Crawl.	
<i>F. ulmifolia</i>	<i>Ceropsylla fulvida</i> , sp. n.	
<i>Fraxinus ornus</i>	<i>Paurocephala psylloptera</i> Crawl.	
<i>Garuga pinnata</i>	<i>Psyllopsis fraxini</i> L.	
<i>Gmelina arborea</i>	<i>Phacopteron lentiginosum</i> Buckt.	
<i>Grewia asiatica</i>	<i>Trioza fletcheri</i> Crawl.	
<i>Gymnosporia spinosa</i> (= <i>G. montana</i>)	<i>Paurocephala menoni</i> , sp. n.	
	<i>Diaphorina gymnosporiae</i> , sp. n.	

Host plants	Species of Psyllidae
<i>Indigofera anil</i>	... <i>Arytaina punctipennis</i> Crawf.
<i>I. erecta</i>	
<i>I. hebeptala</i>	
<i>I. oligosperma</i>	
<i>I. paucifolia</i>	
<i>I. pulchella</i>	
<i>I. sumatrana</i>	
<i>Juncus</i> spp.	... { <i>Livia juncorum</i> (Latr.) <i>L. khaziensis</i> Hes. -Harr.
<i>Kydia calycina</i>	... { <i>Paurocephala</i> near <i>minuta</i> Crawf. <i>P. russellae</i> , sp. n.
<i>Leptadenia spartium</i>	... <i>Diaphorina bikanerensis</i> , sp. n.
<i>Litsea monopetala</i> (= <i>L. polyantha</i>)	... <i>Pauropsylla beesoni</i> Laing.
<i>Mallotus philippensis</i>	... { <i>Trioza mallotica</i> Crawf. <i>T. pitformis</i> , sp. n. <i>Apsylla cistellata</i> Buckt. <i>Arytaina obscura</i> Crawf. <i>Leuronota minuta</i> Crawf. <i>Pauropsylla brevicornis</i> Crawf. <i>P. maculata</i> , sp. n. <i>P. nigra</i> Crawf.
<i>Mangifera indica</i>	... { <i>Ceropsylla ferruginea</i> , sp. n. <i>Diaphorina citri</i> Kuw. <i>D. communis</i> , sp. n. <i>Psylla murrayi</i> , sp. n.
<i>Miliusa velutina</i>	... { <i>Diaphorina citri</i> Kuw. <i>D. communis</i> , sp. n.
<i>Murraya koenigii</i>	... { <i>Diaphorina citri</i> Kuw. <i>D. communis</i> , sp. n.
<i>M. paniculata</i>	... <i>Euphyllura olivina</i> Costa.
Olive	... <i>Aphalara maculipennis</i> Loew
<i>Polygonum hydropiper</i>	... <i>A. ossianilssoni</i> , sp. n.
<i>P. microcephalum</i>	... { <i>Trioza bifurcata</i> , sp. n. <i>T. ceardi</i> Berg. <i>T. longiantennata</i> , sp. n.
<i>Populus euphratica</i>	... <i>Pauropsylla tuberculata</i> Crawf.
Pumpkin	... <i>Psylla</i> sp. 1
<i>Pyrus communis</i>	... <i>Petalolyma basalis</i> (Wlk.)
<i>P. pashia</i>	... <i>Trioza serrata</i> , sp. n.
<i>P. vistata</i>	... <i>Psylla zaicevi</i> Sulc.
<i>Quercus dilatata</i>	... <i>Euphyllura obsoleta</i> , sp. n.
<i>Sabia paniculata</i>	... { <i>Diaphorina venata</i> , sp. n. <i>Macrohomentoma maculata</i> , sp. n.
<i>Salix</i> sp.	... <i>Mycopsylla indica</i> , sp. n.
<i>Salvadora oleoides</i>	... { <i>Psylla santali</i> , sp. n.
<i>Santalum album</i>	...

Host plants	Species of Psyllidae
<i>Schima wallichii</i>	<i>Cecidopsylla schimae</i> Kieff.
<i>Schleichera trijuga</i>	<i>Phacopteron lentiginosum</i> Buckt.
<i>Semecarpus anacardium</i>	<i>Pauropsylla verrucosa</i> , sp. n.
<i>Shorea robusta</i>	{ <i>Ceropsylla minuta</i> , sp. n.
	<i>Leuronota corniculata</i> , sp. n.
<i>Spondias pinnata</i> (= <i>S. mangifera</i>)	<i>Pauropsylla spondiasae</i> Crawf.
<i>Sterculia foetida</i>	<i>Tenaphalara acutipennis</i> Kuw.
<i>Stranvaesia glaucescens</i>	<i>Psylla</i> sp. 1.
<i>Strychnos nux-vomica</i>	<i>Diaphorina truncata</i> Crawf.
	{ <i>Euphyllura caudata</i> , sp. n.
	<i>E. concolor</i> , sp. n.
	<i>Trioza vitiensis</i> Kirk.
<i>Syzygium cumini</i> (= <i>Eugenia jambolana</i>)	<i>T. eugenioides</i> Crawf.
	<i>T. fusca</i> , sp. n.
	<i>T. jambolanae</i> Crawf.
	<i>T. spinulata</i> , sp. n.
<i>Tamarix</i> sp.	<i>Colposcencia constricta</i> , sp. n.
<i>Terminalia alata</i> (= <i>T. tomentosa</i>) }	{ <i>Trioza hirsuta</i> Crawf.
<i>T. arjuna</i> }	<i>T. fletcheri minor</i> Crawf.
<i>T. catappa</i> }	
<i>T. paniculata</i> }	
<i>Trema orientalis</i>	<i>Paurocephala psylloptera</i> Crawf.
<i>Trewia nudiflora</i>	<i>Trioza fletcheri</i> Crawf.
<i>Urena lobata</i>	<i>Mesohomotoma lutheri</i> Endl.
<i>Urtica</i> spp.	<i>Trioza urticae</i> (Linn.)
<i>Viburnum</i> sp.	<i>Psylla viburni</i> Loew
Walnut	<i>Arytaina fasciata</i> Laing
<i>Zizyphus jujuba</i>	<i>Paurocephala trimaculata</i> , sp. n.

On unknown hosts

1. *Diaphorina enderleini* Klimaszewski, from Poona, in September, 1911
2. *Diceropsylla brunetti* Crawford, from Darjeeling, in May, 1910
3. *Paurocephala phalaki*, sp. n., from Tista, W. Bengal, in October, 1965
4. *Pauropsylla stevensi* Laing, from Darjeeling, Gopaldhara
5. *Psylla quadrimaculata*, sp. n., from Jorhat, in February-March and from Darjeeling, in November, 1965
6. *Rhynopsylla stylata* Crawford, from R. Sutlej, below Simla, May, 1910
7. *Trioza analis* Crawford, from Simla, West Himalayas
8. *T. eugenioides* Crawford, from Pusa, in January, 1918
9. *T. gigantea* Crawford, from Darjeeling, in March, 1967
10. *T. gigantea curta*, ssp. n., from Darjeeling, in March, 1967
11. *T. hyalina* Crawford, from Simla, in May, 1908
12. *T. simplifica*, sp. n., from Devithan, C. Nepal, in April, 1961

TABLE 2. PSYLLID-HOST LIST

Sub-family	Species	Plant hosts
Liviinae	<i>Livia juncorum</i> (Latr.)	<i>Juncus</i> sp.
	<i>L. khaziensis</i> Hes. -Harr.	<i>J.</i> sp.
Aphalarinae	<i>Aphalara maculipennis</i> Loew	<i>Polygonum hydropiper</i>
	<i>A. ossianilssoni</i> , sp. n.	<i>P. microcephalum</i>
	<i>Colposcena constricta</i> , sp. n.	<i>Tamarix</i> sp.
Pauropsyllinae	<i>Apsylla cistellata</i> (Buckt.)	<i>Mangifera indica</i>
	<i>Paurocephala menoni</i> , sp. n.	<i>Grewia asiatica</i>
	<i>P. near minuta</i> Crawf.	<i>Kydia calycina</i>
	<i>P. phalaki</i> , sp. n.	Unknown
	<i>P. psylloptera</i> Crawf.	<i>Ficus asperrima</i>
		<i>F. hispida</i>
		<i>F. ulmifolia</i>
		<i>Ficus</i> sp.
		<i>Trema orientalis</i>
	<i>P. russellae</i> , sp. n.	<i>Kydia calycina</i>
	<i>P. trimaculata</i> , sp. n.	<i>Zizyphus jujuba</i>
	<i>Pauropsylla beesoni</i> Laing	<i>Litsaea monopetala</i>
	<i>P. brevicornis</i> Crawf.	<i>Mangifera indica</i>
	<i>P. depressa</i> Crawf.	<i>Cinamomum</i> sp.
		<i>Ficus racemosa</i>
	<i>P. ficicola</i> Kieff.	<i>F. hookeri</i>
		<i>F. roxburghii</i>
	<i>P. longispiculata</i> , sp. n.	<i>Buchanania lanzan</i>
	<i>P. maculata</i> , sp. n.	<i>Mangifera indica</i>
	<i>P. nigra</i> Crawf.	<i>M. indica</i>
	<i>P. purpurescens</i> , sp. n.	<i>Ficus racemosa</i>
	<i>P. reticulata</i> , sp. n.	<i>Anthocephalus indicus</i>
	<i>P. spodiasae</i> Crawf.	<i>Spondias pinnata</i>
	<i>P. stevensi</i> Laing	Unknown
	<i>P. tuberculata</i> Crawf.	<i>Alstonia scholaris</i> , Pumpkin
	<i>P. verrucosa</i> , sp. n.	<i>Semecarpus anacardium</i>
	<i>Phacopteron lentiginosum</i> Buckt.	<i>Garuga pinnata</i> , <i>Schleichera trijuga</i>
Ciriacreminae	<i>Cecidopsylla schimae</i> Kieff.	<i>Schima wallichii</i>
	<i>Diceraopsylla brunettii</i> Crawf.	Unknown
	<i>Dynopsylla grandis</i> Crawf.	<i>Ficus nervosa</i>
	<i>Macrohomentoma geniculata</i> , sp. n.	<i>F. microcarpa</i>
		<i>Carica papaya</i>
	<i>M. maculata</i> , sp. n.	<i>Santalum album</i>
	<i>M. striata</i> Crawf.	<i>Ficus</i> sp.
	<i>Mesohomentoma lutheri</i> Endl.	<i>Urena lobata</i>
	<i>Mycopsylla indica</i> , sp. n.	<i>Santalum album</i>
	<i>Psausia distincta</i> (Crawf.)	<i>Ficus religiosa</i>
	<i>P. indica</i> , sp. n.	<i>F. lucescens</i>
		<i>F. microcarpa</i>

Sub-family	Species	Plant hosts
Psyllinae	<i>Rhinopsylla stylata</i> Crawf.	Unknown
	<i>Tenaphalara acutipennis</i> Kuw.	<i>Bombax ceiba</i> , <i>Sterculia foetida</i>
	<i>Acizzia indica</i> Hes. -Harr.	<i>Albizia procera</i>
	<i>Arytaina fasciata</i> Laing	Walnut
	<i>A. obscura</i> Crawf.	<i>Mangifera indica</i> , <i>Dalbergia sissoo</i>
	<i>A. punctipennis</i> Crawf.	<i>Indigofera anil</i>
		<i>I. arrecta</i>
		<i>I. hebetata</i>
		<i>I. oligosperma</i>
		<i>I. paucifolia</i>
		<i>I. pulchella</i>
		<i>I. sumatrana</i>
	<i>A. ramakrishni</i> Crawf.	<i>Chloroxylon swietenia</i>
		<i>Chloroxylon</i> sp.
	<i>A. spinosa</i> , sp. n.	<i>Albizia procera</i>
		<i>A. chinensis</i>
	<i>Diaphorina bikanerensis</i> , sp. n.	<i>Leptadenia spartium</i>
	<i>D. cardiae</i> Crawf.	<i>Cordia grandis</i>
		<i>C. myxa</i>
		<i>C. obliqua</i>
	<i>D. citri</i> Kuw.	<i>Citrus aurantium</i>
		<i>C. medica limonium</i>
		<i>C. medica lunetta</i>
		<i>C. medica acida</i>
		<i>C. medica medica</i>
		<i>C. decumana</i>
		<i>Murraya koenigii</i>
		<i>M. paniculata</i>
	<i>D. communis</i> , sp. n.	<i>M. koenigii</i>
		<i>M. paniculata</i>
		<i>Citrus</i> sp.
	<i>D. dunensis</i> , sp. n.	<i>Ehretia acuminata</i>
<i>D. enderleini</i> Klimas.	Unknown	
<i>D. gymnosporiae</i> , sp. n.	<i>Gymnosporia spinosa</i>	
<i>D. truncata</i> Crawf.	<i>Strychnos nux-vomica</i>	
<i>D. venata</i> , sp. n.	<i>Santalum album</i>	
<i>Euphalerus vittatus</i> Crawf.	<i>Cassia fistula</i>	
<i>Euphyllura caudata</i> , sp. n.	<i>Syzygium cumini</i>	
<i>E. concolor</i> , sp. n.	<i>S. cumini</i>	
<i>E. obsoleta</i> , sp. n.	<i>Salvadora oleoides</i>	
<i>E. olivina</i> Costa	Olive	
<i>Psylla bengalensis</i> , sp. n.	<i>Cedrela toona</i>	
<i>P. cedrelae</i> Kieff.	<i>C. toona</i>	
	<i>Chukrasia velutina</i>	
<i>P. crataegi</i> Schrank	<i>Crataegus</i> sp.	

Sub-family	Species	Plant hosts
	<i>Psylla eastopi</i> , sp. n.	<i>Cedrela toona</i>
	<i>P. hyalina</i> , sp. n.	<i>Albizia procera</i>
		<i>Cassia siamea</i>
	<i>P. longigena</i> , sp. n.	<i>Bucklandia populnea</i>
	<i>P. murrayi</i> , sp. n.	<i>Muraya koenigii</i>
	<i>P. oblonga</i> , sp. n.	<i>Albizia odoratissima</i>
	<i>P. quadrimaculata</i> , sp. n.	Unknown
	<i>P. santali</i> , sp. n.	<i>Santalum album</i>
	<i>P. near simlae</i> Crawf.	<i>Bauhinia variegata</i>
	<i>Psylla</i> sp. 1.	<i>Stranvaesia glaucescens</i>
		<i>Pyrus communis</i>
		<i>P. pashia</i>
		<i>P. vistata</i>
	<i>P. viburni</i> Loew	<i>Viburnum</i> sp.
	<i>P. zaicevi</i> Sulc	<i>Salix</i> sp.
	<i>Psyllopsis fraxini</i> (Linn.)	<i>Fraxinus ornus</i>
Triozinae	<i>Ceropsylla ferruginea</i> , sp. n.	<i>Miliusa velutina</i>
	<i>C. fulvida</i> , sp. n.	<i>Ficus microcarpa</i>
		<i>F. rumphii</i>
	<i>C. minuta</i> , sp. n.	<i>Shorea robusta</i>
	<i>Leuronota corniculata</i> , sp. n.	<i>S. robusta</i>
	<i>L. minuta</i> (Crawf.)	<i>Mangifera indica</i>
	<i>Petalolyma basalis</i> (Walk.)	<i>Quercus dilatata</i> ; "khandiara"
Phylloplecta-Group	<i>Trioza eugenioides</i> Crawf.	Unknown
	<i>T. hirsuta</i> Crawf.	<i>Terminalia alata</i> var. <i>tomentosa</i>
		<i>T. arjuna</i>
		<i>T. catappa</i>
		<i>T. paniculata</i>
	<i>T. lobata</i> sp. n.	<i>Duabanga grandiflora</i>
	<i>T. mallotica</i> Crawf.	<i>Mallotus philippinensis</i>
	<i>T. pitiformis</i> , sp. n.	<i>M. philippinensis</i>
	<i>T. serrata</i> , sp. n.	<i>Sabia paniculata</i>
	<i>T. vitiensis</i> Kirk.	<i>Eugenia (Syzygium) malaccensis</i>
		<i>Syzygium cumini</i>
Trioza-Group	<i>Trioza analis</i> Crawf.	Unknown
	<i>T. bifurcata</i> , sp. n.	<i>Populus euphratica</i>
	<i>T. ceardi</i> Berg.	<i>P. euphratica</i>
	<i>T. fletcheri</i> Crawf.	<i>Gmelina arborea</i>
		<i>Trewia nudiflora</i>
	<i>T. fletcheri minor</i> Crawf.	<i>Terminalia alata</i> var. <i>tomentosa</i>
		<i>T. arjuna</i>
		<i>T. catappa</i>
		<i>T. paniculata</i>
	<i>T. fusca</i> , sp. n.	<i>Syzygium cumini</i>
	<i>T. gigantea</i> Crawf.	"Uttis" (local name)

Sub-family	Species	Plant hosts
	<i>Trioza gigantea curta</i> , ssp. n.	Unknown
	<i>T. hyalina</i> Crawf.	Unknown
	<i>T. jambolanae</i> Crawf.	<i>Syzygium cumini</i>
	<i>T. longiantennata</i> , sp. n.	<i>Populus euphratica</i>
	<i>T. obliqua</i> Thomson	<i>Atriplex</i> sp. <i>Chenopodium album</i>
	<i>T. obsoleta</i> (Buckl.)	<i>Diospyros melanoxylon</i> <i>D. tomentosa</i>
	<i>T. simplifica</i> , sp. n.	Wild shrub
	<i>T. spinulata</i> , sp. n.	<i>Syzygium cumini</i>
	<i>T. urticae</i> (Linn.)	<i>Urtica</i> spp.

Some of the psyllid species are said to be very destructive pests in other countries, as mentioned below.

1. *Psylla pyricola* Foerster (the pear psylla) :—Pest in Europe. Common in U.S.A., in the pear orchards of the Pacific north-west. It has been identified as the vector of pear decline virus and leaf curl, a related disease of pear trees (Madsen and Morgan, 1970).
2. *P. mali* Schmidberger (the apple sucker) :—Somewhat of limited distribution. Causes appreciable injury.
3. *Paratrioza cockerelli* Sulc:—Native of North America. Major pest of potatoes in western U.S.A.
4. *Trioza alacris* Flor:—Causes curling and thickening of the leaves of laurel trees and thus does some injury.
5. *Pachypsylla celtidis-mamma* Riley forms galls on the underside of leaves of hackberry.
6. *Psylla buxi* L. is responsible for deforming the apical shoots of *Buxus sempervirens* into miniature cabbage-like growths, in Great Britain.
7. *Livia juncorum* Latr. forms tassel-like galls on several species of *Juncus*.
8. *Trioza erythrae* (Del Guercio) is a very serious pest of *Citrus* trees in Africa, and is said to cause the "Greening Disease".
9. *T. perseae* Tuthill attacks avocado
10. *Jenseniella psidii* Tuthill attacks guava
11. *Russelliana solanicola* Tuthill attacks potato
12. One species attacks avocado in Mexico.....

} in Peru (Tuthill, 1959).

Great precautions are necessary to prevent the introduction of these psyllid pests into India.