

THE TINGIDAE (HEMIPTERA) OF ISRAEL

J. PERICART¹, R. LINNAVUORI², T. FELER³ AND J. HALPERIN⁴

¹10 Rue Habert, 77130 Montereau, France

²Raisio, Somersoja, Finland

³Department of Zoology, Tel-Aviv University, Tel Aviv, Israel

⁴Department of Entomology, The Volcani Center, BetDagan, Israel

ABSTRACT

Data are presented on 54 species of Tingidae, eight of which are new to Israel. Two species are noxious: The pear lace-bug, *Stephanitis pyri* (Fabricius), and the poplar lace-bug, *Monosteira unicostata* Mulsant and Rey.

KEY WORDS: Tingidae, Hemiptera, faunal list, new records, host plants, Israel.

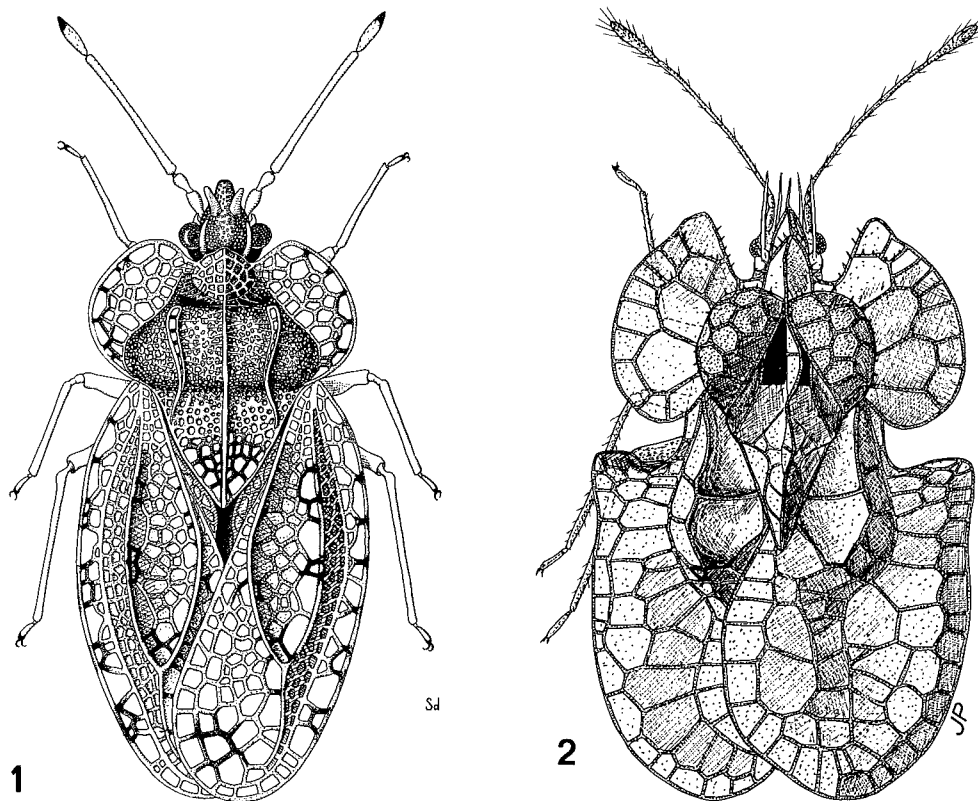
INTRODUCTION

Tingidae (lace-bugs) are small-sized (1.5-6 mm) terrestrial Hemiptera, characterized by the ornamental reticulum of the adult's body and hemelytra. In many species, such as *Derephysia foliacea*, *Dictyonota opaca* (Fig. 1), *Galeatus scrophicus*, *Hyalochiton multiseriatus* (Fig. 2) and others, the prothorax forms laminated outgrowths; in a few others, such as *Urentius hystericellus*, the body margins are covered with closely set spines. All of the approximately 2,000 known species are phytophagous at the larval and adult stages (Pericart, 1983).

The present list of the Tingidae of Israel updates those of Bodenheimer (1937) and Linnavuori (1961). Bodenheimer's list included 20 species, 4 of which were not found in the present study. Linnavuori's list included 32 species (including those mentioned by Bodenheimer), out of which 1 is a synonym and 5 were not seen by us. The present paper is based on these lists as well as on Pericart (1983) and on recent collections by Linnavuori, Feler, Halperin and others, identified or checked by Pericart.

In Israel 54 species are recorded, most of them breed on Lamiaceae, Boraginaceae, Fabaceae, Mimosaceae, Rosaceae and Salicaceae. Two species are noxious: the pear lace-bug, *Stephanitis pyri* (Avidov and Harpaz, 1969), and the poplar lace-bug, *Monosteira unicostata* (Halperin, 1976).

The species are listed in alphabetical order. For each species the data given are the general distribution and recorded host plants from other countries, as well as the distribution, months of collection and known hosts in Israel. Species new to the Israeli fauna are marked by an asterisk. A list of host plants from Israel and their Tingidae fauna is also given (Table 1). Doubtful hosts are marked by "?" and are not included in this list. Months are indicated by lower-case Roman numbers. The specimens are deposited in the collections of the Tel-Aviv University and Messrs. Linnavuori and Pericart. Most of the species listed in this paper can be identified using the keys of Pericart (1983).



Figs. 1-2. Habitus of Tingidae. 1. *Dictyonota opaca*. 2. *Hyalochiton multiseriatus*.

ENUMERATION OF TINGIDAE

1. *Agramma atricapillum* (Spinola)

Distribution: Circum-Mediterranean.

Hosts: *Carex*, *Juncus*, *Scirpus*, *Typha*.

In Israel: Mount Hermon, Golan Heights, Upper Galilee, Jordan Valley, Central Coastal Plain, Foothills of Judea, Judean Hills; i-iv, vi-viii, x, xii; *Juncus acutus*.

2. *Agramma globiceps* (Horvath)

Endemic to Israel.

In Israel: Coastal Plain; vi; *Juncus acutus*.

3. *Campylosteira pilicornis* Horvath

Distribution: East Mediterranean (Lebanon, Israel).

In Israel: Mount Hermon, Golan Heights, Judean Hills; i, iv, vi, viii.

4. *Cantacader quadricornis* (Le Peletier and Audinet-Serville)

Distribution: Mediterranean, Irano-Turanian.

In Israel: Upper Galilee; vii; ?*Polygonum* sp.

5. *Catoplatus anticus* (Reuter)

Distribution: Ponto-Pannonian.

In Israel: Jerusalem (listed by Bodenheimer, 1937).

6. *Catoplatus crassipes* (Fieber)

Distribution: Ponto-Pannonian.

Hosts: *Eryngium*, *Torilis*.

In Israel: Upper Galilee, Carmel Ridge, Samaria; iv, v.

7. *Catoplatus hilaris* Horvath

Distribution: East Mediterranean.

In Israel: Judean Hills (listed by Bodenheimer, 1937).

8. *Catoplatus nigriceps* Horvath

Distribution: Ponto-Pannonian.

Hosts: *Centaurea*, *Eryngium*, *Potentilla*.

In Israel: Upper Galilee; iv.

9. *Copium clavicorne* (Linnaeus)

Distribution: European.

Host: *Teucrium*.

In Israel: Listed by Bodenheimer (1937) as '*C. teucris* var. *brevicorne* (Yak.) from *Teucrium* sp.'

10. *Copium teucris* Host

Distribution: Euro-Mediterranean.

Host: *Teucrium*.

In Israel: Mount Hermon, Foothills of Judea, Judean Hills. v–vii; *Teucrium* spp. (gallicolous).

11. *Copium teucrii* Host ?n. ssp.

In Israel: Be'er Sheva 10–25.v.1986; *Teucrium* sp.
So far unidentified subspecies.

12. *Copium* sp.

In Israel: Carmel Ridge; v; *Teucrium* sp.

13. *Cysteochila phae* Drake and Ruhoff

Distribution: Sudanian.

Host: *Acacia*.

In Israel: Arava Valley; i, iii, vii, viii; *Acacia raddiana*, *A. tortilis*.

14. *Cysteochila stricta* (De Bergevin)

Distribution: Sudanian.

Host: *Acacia*.

In Israel: Arava Valley, Dead Sea Area; i, iii–v; *Acacia raddiana*, *A. tortilis*.

15. *Derephysia foliaceae* (Fallén)

Distribution: Euro-Siberian.

Host: Polyphagous on several families.

In Israel: Northern Coastal Plain; v.

16. *Derephysia rectinervis kiritshenkoi* Josifov

Distribution: Irano-Turanian, found also in the Far East.

In Israel: Mount Hermon; vi.

17. *Dictyla aridula* Linnavuori

Endemic to Israel.

Distribution: Northern Coastal Plain; Central Coastal Plain; i, ii, vi; *Molteniopsis ciliata*.

18. *Dictyla echii* (Schrank)

Distribution: Holopalaeartic.

Host: Boraginaceae.

In Israel: throughout the country; i–xii; *Anchusa strigosa*, *Echium glomeratum*.

*19. *Dictyla horvathi* (Kiritchenkó)

Distribution: Irano-Turanian.
Hosts: *Anabasis*, *Salsola*, *Suaeda*.
In Israel: Dead Sea Area; vii.

20. *Dictyla nassata* (Puton)

Distribution: Circum-Mediterranean and Pontic.
Hosts: Boraginaceae.
In Israel: Samaria, Southern Coastal Plain, Northern Negev, Dead Sea Area, Arava Valley; ii–vi, xii; *Cordia sinensis*, *Heliotropium arbainense*, *Trichodesma ehrenbergii*.

21. *Dictyla triconula* (Seidenstuecker)

Distribution: Ponto-Pannonian.
Hosts: *Anchusa*, *Cynoglossum*.
In Israel: Mount Hermon, Golan Heights, Upper Galilee; iv–vii, x.

22. *Dictyonota gracilicornis* Puton

Distribution: Southwest Mediterranean.
In Israel: Jordan Valley; vii.

23. *Dictyonota opaca* (Linnavuori)

Distribution: Saharo-Arabian.
Hosts: Chenopodiaceae.
In Israel: Jordan Valley, Dead Sea Area; v, vii; *Suaeda monoica*.

24. *Dictyonota phoenicea* Seidenstuecker

Distribution: Mediterranean.
Hosts: Fabaceae.
In Israel: Mount Hermon, Upper Galilee, Central Coastal Plain, Southern Coastal Plain, Judean Hills, Northern Negev; v, vi; *Calicotome villosa*.

25. *Elasmotropis testacea* (Herrich-Schaeffer)

Distribution: Euro-Mediterranean.
Host: *Echinops*.
In Israel: Mount Hermon, Golan Heights, Upper Galilee, Lower Galilee, Carmel Ridge, Central Coastal Plain, Judean Hills, Northern Negev; v–x; *Echinops* spp., *?Verbascum sinaiticum*.

26. *Galeatus scrophicus* Saunders

Distribution: Palaeotropical.

Hosts: Asteraceae.

In Israel: Carmel Ridge, Samaria, Central Coastal Plain, Southern Coastal Plain, Northern Negev, Central Negev, Arava Valley; i, iii–ix, xi; *Achillea fragrantissima*, *Anvillea garcinii*, *Chrysanthemum* sp., *Inula viscosa*, *Pulicaria crispa*.

27. *Hyalochiton komaroffi* (Jakovlev)

Distribution: North Mediterranean.

Host: *Teucrium*.

In Israel: Judean Hills, Judean Desert; vi.

28. *Hyalochiton multiseriatus* (Reuter)

Distribution: Northeast Mediterranean.

Host: *Phlomis*.

In Israel: Mount Hermon, Judean Desert; iv–viii; *Phlomis brachyodon*.

29. *Kalama lugubris* (Fieber)

Distribution: East Mediterranean.

In Israel: Golan Heights, Upper Galilee, Central Coastal Plain; iv, v, xi.

30. *Kalama reuteri* (Horvath)

Endemic to Lebanon and Israel.

In Israel: Haifa; xi.

31. *Lasiacantha beithovedensis* Linnavuori

Endemic to Israel.

Distribution: Central Coastal Plain, Southern Coastal Plain, Central Negev; v–viii; *Coridothymus capitatus*.

32. *Lasiacantha hedenborgii* (Stål)

Distribution: East Mediterranean.

In Israel: Upper Galilee, Carmel Ridge, Foothills of Judea, Judean Hills, Northern Negev; ii, v–vii, x; *Salvia dominica*, *S. fruticosa*.

33. *Magmara alfieri* (Drake and Ruhoff)

Distribution: South Mediterranean.

Host: *Gymnocarpos*.

In Israel: Northern Negev, Central Negev; iii–vi; *Gymnocarpos decander*, ?*Anabasis articulata*.

*34. *Monosteira discoidalis* (Jakovlev)

Distribution: Irano-Turanian; found also in Mongolia and China.

Hosts: *Populus*, *Salix*.

In Israel: Upper Galilee; x; *P. nigra*.

35. *Monosteira lobulifera* Reuter

Distribution: East Mediterranean.

Hosts: *Amygdalus*, *Prunus*, *Pyrus*, *Salix*.

In Israel: Golan Heights, Upper Galilee, Valley of Yizre'el, Judean Hills, Dead Sea Area; v–xii; *Populus euphratica*, *P. euramericana*, *Pyrus* spp., *Salix* sp.

*36. *Monosteira minutula* Montandon

Distribution: Saharo-Arabian.

Host: *Ziziphus*.

In Israel: Dead Sea Area; iv; *Ziziphus spina-christi*.

*37. *Monosteira remanei* Péricart

Distribution: Saharo-Arabian: Israel, Saudi-Arabia, Iraq.

Host: *Alhagi*.

In Israel: Dead Sea Area; vii; *A. graecorum*.

38. *Monosteira unicostata* (Mulsant and Rey)

Distribution: Circum-Mediterranean.

Hosts: *Populus*, *Salix*, *Amygdalus*, *Crataegus*, *Cydonia*, *Prunus*, *Pyrus*.

In Israel: Throughout the country; iv–x; *Populus* spp., *Salix* spp.

39. *Phaenotropis cleopatra* (Horvath)

Distribution: Palaeotropic, Irano-Turanian.

Host: *Tephrosia*.

In Israel: Dead Sea Area, Northern Negev, Central Negev, Arava Valley; iii–viii; ?*Pituranthos triradiatus*, *Tephrosia appolinea*.

40. *Physatocheila dumetorum* (Herrich-Schaeffer)

Distribution: European, Irano-Turanian.
 Hosts: *Amygdalus*, *Crataegus*, *Prunus*, *Pyrus*.
 In Israel: Upper Galilee; ix, xi.

*41. *Physatocheila municeps* Horvath

Distribution: East Mediterranean.
 Hosts: *Acer*, *Amygdalus*, *Prunus*.
 In Israel: Mount Hermon, Upper Galilee; iv–vi; *Crataegus monogyna*.

42. *Stephanitis pyri* (Fabricius)

Distribution: Euro-Mediterranean, Irano-Turanian.
 Hosts: Arboreous Rosaceae.
 In Israel: Northern and Central Israel; vi–x; *Cotoneaster* spp., *Crataegus aronia*, *Cydonia oblonga*, *Pyrus* spp., *Pyracantha crenato-serrata*.

43. *Tingis auriculata* (Costa)

Distribution: Circum-Mediterranean.
 Hosts: Asteraceae.
 In Israel: Upper Galilee, Central Coastal Plain, Northern Negev; ii, iv, vi, vii.

44. *Tingis ciliaris* (Puton)

Distribution: Ponto-Pannonian.
 Host: *Ajuga*.
 In Israel: Carmel Ridge, Northern Negev; v.

45. *Tingis denudata* Horvath

Distribution: South Mediterranean.
 Host: *Centaurea*.
 In Israel: Northern Negev; v.

*46. *Tingis elongata* (Fieber)

Distribution: Mediterranean.
 Host: ?*Matricaria*.
 In Israel: Mount Hermon, Upper Galilee; v.

*47. *Tingis geniculata* (Fieber)

Distribution: Euro-Mediterranean.

Host: *Stachys*.

In Israel: Lower Galilee, Judean Hills; v, vi.

48. *Tingis grisea* Germar

Distribution: Circum-Mediterranean, Irano-Turanian.

Host: *Centaurea*.

In Israel: Northern Negev; iv–vi.

49. *Tingis hellenica bodenheimeri* Lindberg

Distribution: East Mediterranean (Syria, Israel, Jordan).

Hosts: *Phlomis*, *Podonosma*, *Stachys*.

In Israel: Throughout the country; ii–v, xi; *Podonosma orientalis*, *Prasium majus*, *Stachys palaestina*.

*50. *Tingis rotundipennis* Horvath

Distribution: Mediterranean.

Host: *Echinops*.

In Israel: Northern Negev, Central Negev; iv–vi.

51. *Tingis valida* Puton

Distribution: East Mediterranean.

Host: *Eremostachys*.

In Israel: Upper Galilee, Judean Foothills, Northern Negev; iii–v; *Eremostachys laciniata*.

52. *Urentius euonymus* Distant

Distribution: East Mediterranean, found also in India and Ceylon.

Hosts: *Abutilon*, *Althaea*.

In Israel: Mount Hermon, Upper Galilee, Foothills of Judea, Judean Desert; ii, xi; *Abutilon fruticosum*, *Alcea* sp.

53. *Urentius hystericellus* (Richter)

Distribution: Pan-tropical.

Host: *Solanum*.

In Israel: Jordan Valley; v; *Solanum melongena*.

54. *Urentius nanus* (Schumacher)

Distribution: Saharo-Arabian.

Hosts: *Prosopis*, ?*Helianthemum*.

In Israel: Central Coastal Plain, Southern Coastal Plain, Foothills of Judea, Northern Negev, Dead Sea Area; vi, vii; *Prosopis farcta*.

TABLE 1
List of plants and their associated Tingidae in Israel

Host plants	Tingidae
Asteraceae	
<i>Achillea fragrantissima</i>	<i>Galeatus scrophicus</i>
<i>Anvillea garcinii</i>	<i>Galeatus scrophicus</i>
<i>Chrysanthemum</i> sp.	<i>Galeatus scrophicus</i>
<i>Echinops</i> spp.	<i>Elasmotropis testacea</i>
<i>Inula viscosa</i>	<i>Galeatus scrophicus</i>
<i>Pulicaria crispa</i>	<i>Galeatus scrophicus</i>
Boraginaceae	
<i>Anchusa strigosa</i>	<i>Dictyla echii</i>
<i>Cordia sinensis</i>	<i>Dictyla nassata</i>
<i>Echium glomeratum</i>	<i>Dictyla echii</i>
<i>Heliotropium arbainense</i>	<i>Dictyla nassata</i>
<i>Moltkiopsis ciliata</i>	<i>Dictyla aridula</i>
<i>Podonosma orientalis</i>	<i>Tingis hellenica bodenheimeri</i>
<i>Trichodesma ehrenbergii</i>	<i>Dictyla nassata</i>
Caryophyllaceae	
<i>Gymnocarpus decander</i>	<i>Magmara alfieri</i>
Chenopodiaceae	
<i>Suaeda monoica</i>	<i>Dictyonota opaca</i>
Fabaceae	
<i>Alhagi graecorum</i>	<i>Monosteira remanei</i>
<i>Calicotome villosa</i>	<i>Dictyonota phoenicea</i>
<i>Tephrosia apollinea</i>	<i>Phaenotropis cleopatra</i>
Juncaceae	
<i>Juncus acutus</i>	<i>Agramma atricapillum</i>
	<i>Agramma globiceps</i>

TABLE 1 – Continued

Lamiaceae	
<i>Coridothymus capitatus</i>	<i>Lasiacantha beithovedensis</i>
<i>Eremostachys laciniata</i>	<i>Tingis valida</i>
<i>Phlomis brachyodon</i>	<i>Hyalochiton multiseriatus</i>
<i>Prasium majus</i>	<i>Tingis hellenica bodenheimeri</i>
<i>Salvia dominica</i>	<i>Lasiacantha hedenborgii</i>
<i>Salvia fruticosa</i>	<i>Lasiacantha hedenborgii</i>
<i>Stachys palaestina</i>	<i>Tingis hellenica bodenheimeri</i>
<i>Teucrium</i> spp.	<i>Copium clavicorne</i>
	<i>Copium teucrii</i>
	<i>Copium</i> sp.
Malvaceae	
<i>Abutilon fruticosum</i>	<i>Urentius euonymus</i>
<i>Alcea</i> sp.	<i>Urentius euonymus</i>
Mimosaceae	
<i>Acacia raddiana</i>	<i>Cysteochoila phae</i>
	<i>C. stricta</i>
<i>Acacia tortilis</i>	<i>Cysteochoila phae</i>
	<i>C. stricta</i>
<i>Prosopis farcta</i>	<i>Urentius nanus</i>
Rhamnaceae	
<i>Ziziphus spina-christi</i>	<i>Monosteira minutula</i>
Rosaceae	
<i>Cotoneaster</i> spp.	<i>Stephanitis pyri</i>
<i>Crataegus aronia</i>	<i>Stephanitis pyri</i>
<i>Crataegus monogyna</i>	<i>Physatocheila municeps</i>
<i>Cydonia oblonga</i>	<i>Stephanitis pyri</i>
<i>Pyracantha crenato-serrata</i>	<i>Stephanitis pyri</i>
<i>Pyrus</i> spp.	<i>Monosteira lobulifera</i>
	<i>Stephanitis pyri</i>
Salicaceae	
<i>Populus euphratica</i>	<i>Monosteira lobulifera</i>
<i>Populus euramericana</i>	<i>Monosteira lobulifera</i>
<i>Populus nigra</i>	<i>Monosteira discoidalis</i>
<i>Populus</i> spp.	<i>Monosteira unicostata</i>
<i>Salix</i> sp.	<i>Monosteira lobulifera</i>
	<i>Monosteira unicostata</i>
Solanaceae	
<i>Solanum melongena</i>	<i>Urentius hystericellus</i>

ACKNOWLEDGMENTS

The authors acknowledge the "Fédération Française des Sociétés des Sciences Naturelles," for its kind permission to reproduce illustrations from Péricart (1983).

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