

## References

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## A new species of *Laodelphax fennah* (Fulgoroidea: Delphacidae) from north western India

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**Abstract.** *Laodelphax truncata* sp. n. has been described from north-western India. A key is also given for the separation of this species from its nearest ally *L. striatella* (Fallen).

### Observations

Genus *LAODELPHAX* Fennah

*Laodelphax* Fennah 1963, *Proc. R. ent. Soc. London (B)* **32** : 15

*Laodelphax truncata* sp. n.

(Figs. 1 — 9)

### Colour

Dark fuscous; carinae of head, and pronotum creamy-white; vertex, antennae, pronotum except behind eyes, a part of mesoscutellum, tegulae, creamy-white; frons, anterior portion of genae, clypeus except laterally, mesonotum, abdomen and male genitalia dark fuscous. Tegmina hyaline, veins concolorous, wings hyaline with dilute fuscous veins.

### Measurements (mm)

Length of body from apex of head to tip of abdomen—1.8; vertex, width at base—.15, median length—.18; pronotal disc., width at anterior margin—.15, median length—.15; frons, width—.22, Length—.46; postclypeus, width—.17, median length—.17; antennae, basal segment—.10; second segment—.16; tegmen, width—.80, length—2.6; length of tibial spur—.33

### Body Structure

Vertex longer medially than broad at base, subrectangularly rounding into frons, as wide at apex as at base, lateral margins shallowly concave, apical margin truncate, with submedian carinae prominent, Y-shaped carina distinct, median stem of Y-shaped

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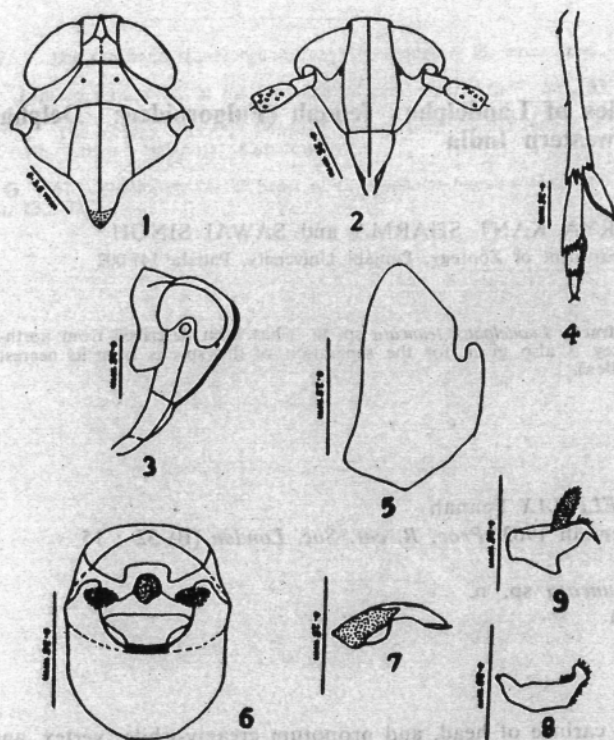


Fig. 1 Vertex, pronotum and mesonotum.  
 Fig. 2 Frons and clypeus  
 Fig. 3 Head in profile.  
 Fig. 4 Hind leg  
 Fig. 5 Pygofer, lateral view.  
 Fig. 6 Pygofer, posterior view.  
 Fig. 7 Aedeagus  
 Fig. 8 Paramere  
 Fig. 9 Anal segment, lateral view.

carina obsolete, submedian carinae uniting at apex of vertex, basal compartment of vertex wider at hind margin than greatest and median lengths; frons in middle line longer than wide at widest part, widest at middle, lateral margins concave between eyes, than moderately convex, median carina simple; clypeus at base distinctly wider than frons at apex, postclypeal disc as long medially as broad at base, in profile moderately convex, anteclypeus in profile convex; genae moderately broad, oblique transverse carina distinct, straight; ocelli small but distinct; antennae reaching frontoclypeal suture, basal segment longer than broad, second segment longer than first.

Pronotum in middle line shorter than vertex, pronotal disc as long medially as broad at anterior margin, lateral carinae straight, not reaching hind margin, one deep impression on either side of median carina; mesonotum broader than long, median carina becoming obsolete before scutellum, lateral carinae straight; legs slender, hind tibia about 8 times as long as wide at middle, hind-tibial spur with about 16 teeth on hind margin.

#### Male genitalia and anal segment

Pygofer moderately long, in lateral view wide ventrally, gradually narrowed dorsally, dorsal margin subacute, posterior opening much longer than broad, lateral margins not entire, produced mesocaudad at middle in a stout process, diaphragm broad with dorsal margin raised into a convex platform in middle, with a pentagonal carina medially; medio ventral process absent. Aedeagus moderately long, tubular, truncately rounded at apex, orifice terminal, without any ornamentation. Parameres similar as in *L. striatella* (Fallen) except that rectangulate apical portion is less pronounced.

Anal segment short, collar-like, latero-apical angles far apart, each produced ventrad in a short stout spinose process; anal style long and cone shaped.

#### Collection data

Punjab:

Bahadurgarh 14.4.1976 (Grass), Khemkaran 10.5.1977 (Grass), Pathankot 15.5.1977 (Grass)

Haryana:

Chakravarti lake (Karnal) 6.5.1978 (Grass)  
 Jammu & Kashmir : Kulgaom 10.10.1978 (Rice).

Holotype

Male, Punjab: Bahadurgarh 14.4.1976 (Grass) in the Department of Zoology, Punjabi University, Patiala.

Paratypes:

3 Males, 4 Females.

#### Remarks

Fennah (1963) erected *Laodelphax* by taking *Delphax striatella* Fallen as the type of the genus. The present species superficially resembles *L. striatella* but can be separated from it by the combination of characters given in the key.

#### Key to the species of *Laodelphax* Fennah

1. Vertex as long as broad at base, median stem of Y-shaped carina distinct; postclypeus longer medially than broad at base; upper lip of aedeagus produced into a long acuminate process.  
 ...*Laodelphax striatella* (Fallen)

2. —Vertex longer medially than broad at base, median stem of Y-shaped carina not distinct; postclypeus as long medially as broad at base; upper lip of aedeagus not produced into an acuminate process ... *Laodelphax truncata* sp.n.

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### Skeletomuscular differences pertaining to flight in the thorax of *Solenopsis geminata* (Hymenoptera: Formicidae)

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**Abstract.** Some outstanding differences came to light when the winged thorax of a female formicid was compared with the non-winged thorax of the same species. Differences have been noted in the skeleton and musculature. In the winged forms, the pro-, the meso- and the metathoracic components are loosely attached, while the pronotum is relatively reduced, and the mesoalinitum and the mesopectus are further subdivided into several sclerites due to the presence of various sutures and ridges. The metapectus also follows the same pattern, and the metanotum is demarcated from the propodeum and the mesoalinitum. The meso- and the metaendosterna are associated with each other while the pro- and mesophragmata are also present. Due to the presence of wings, the usual wing sclerites and processes are also differentiated and at the same time, on account of the development of major flight muscles, some of the muscles which are present in non-winged thorax are displaced or disappear.

#### Introduction

The present work deals with the flight related differences observed at skeletomuscular level in the thorax of non-winged workers and winged female forms of a formicid namely *Solenopsis geminata*. Emphasis has been laid on the proposition that changes are always need related. Certain additional sclerites, sutures and muscles are present in the winged female, while the same are absent in thorax of non-winged form. The literature reveals that no such comprehensive study has been made earlier in this direction excepting that of Lubbock (1879) who worked on a single species and did not deal with the winged form in detail. However, Reid (1941) did point out some differences in the skeleton which occur due to the presence of the wings as compared with the non-winged and short-winged Hymenoptera. Some other references which deal with the morphology of the formicids include Emery (1900), Wheeler (1910), Snodgrass (1910), Weber (1926) and Tulloch (1930, 1935). But none of these authors pointed out the differences in the thorax of wingless workers and the winged female of the same species. The present work exactly does so while dealing with a formicid and confirms the idea regarding the flight related skeletomuscular differences.

#### Material and Methods

The formicide specimens for the present study were collected in the months of July and August (1978) from the areas within and surrounding the Punjabi University, Patiala (Punjab) Campus. For the study of musculature, the insects were fixed in