

MORPHOLOGY OF A NEW DELPHACID, *TOYA*, SP.

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Delphacids popularly known as planthoppers, belong to the family Delphacidae under the super-family Fulgoroidea in Homoptera. This family has been considered till recently by some workers as a sub-family of the larger group Fulgoroidea. The distinctiveness of Delphacids from all other Fulgorids seems to favour its segregation under a distinct family. The name Delphacidae is derived from the generic name *Delphax* given by Fabricius (1798) to one of its constituent genera. Metcalf (1938) renamed this as Araeopidae selecting spinolas genus *Araeopus* as the type for the family, which of the two should the valid name of the family is still under controversy among taxonomists. The older name Delphacidae is more popular in entomological literature for this group of insects and further it is based on the oldest generic group name still current.

MATERIALS AND METHODS

Studies on the morphology of a new Delphacid, *Toya* sp. was carried out during the period of 1986-87 in the Department of Entomology, Annamalai University. Occurrence of these planthoppers were abundantly seen on watergrass *Brachiaria mutica* Stapf. The insects used in the experiments were drawn from ongoing culture stock raised on watergrass. The insects were caged with mylar film cages to avoid mixing up of population.

Permanent mounts of the different parts were prepared for morphological studies. The materials used were alcohol in different grades i.e. 30 per cent, 50 per cent, 70 per cent and 90 per cent, acetone, xylol, canada balsam, slides, coverslips and embryocups. The morphological parts were dissected and followed the serial procedure for permanent mount. The structures to be studied were dissected gently using minute needles. The dissected parts of head, antenna, forewing, hind wing, hind leg were kept first in alcohol of different grades and then changed to acetone. From acetone the parts were transferred to xylol and again washed with fresh xylol for 10 min for dealcoholisation or cleaning. Then the morphological parts were taken and kept on a clear slide and put two drops of canada balsam and covered with coverslip. The prepared slide cleaned with xylol, dried and warmed. These slides were labelled right side of slide with all particulars. For the preparation of genitalia the dissected parts were placed in 10 per cent KOH in small embryocups separately for each and kept overnight when the organs become transparent and soft. The parts were then removed from caustic solution and washed in distilled water to make them free of KOH. They were further transferred to different grades of alcohol and the previous procedure was repeated for making permanent mounts.

RESULTS AND DISCUSSIONS

Adult insects are yellowish brown in colour with a total body length of 2.2 mm and 1.8 mm for the macropterous females and males respectively (Table 1). Head as

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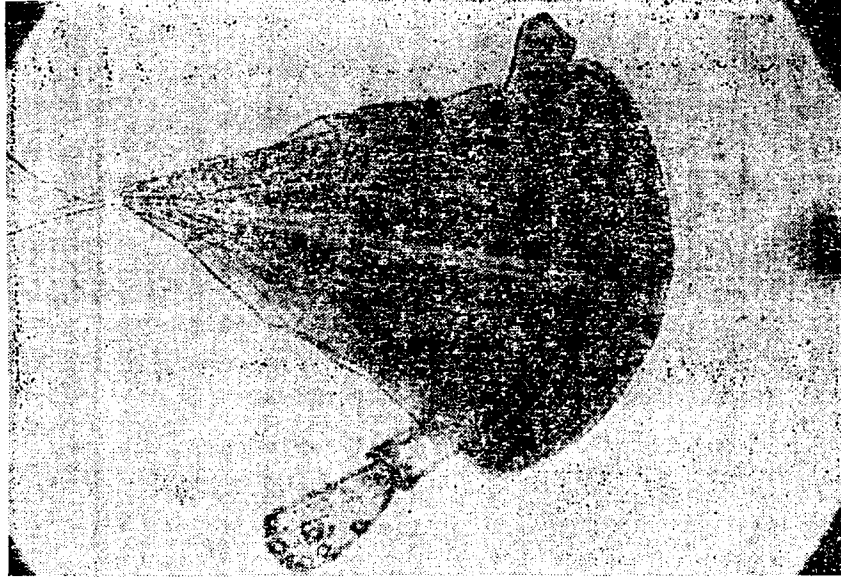


Fig. 1. Head of *Toya* sp.

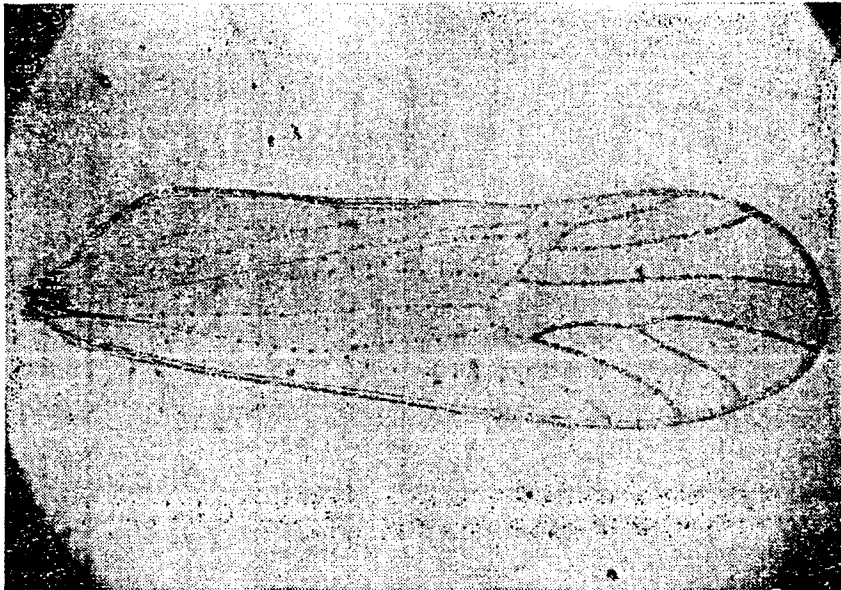


Fig. 2. Fore Wing of *Toya* sp.



Fig. 3. Hind Wing of *Toya* sp.



Fig. 4. Hind leg of *Toya* sp.

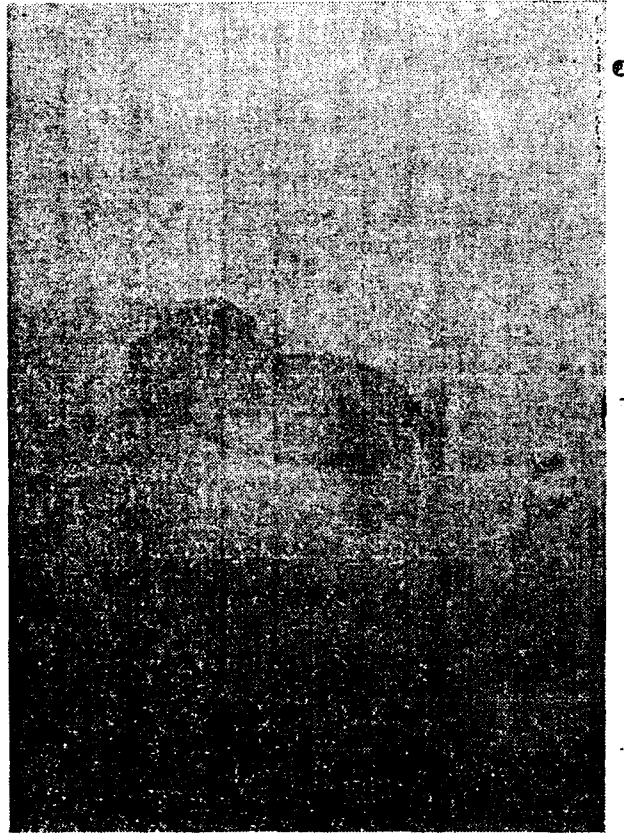


Fig. 5. Aedeagus *Toya* sp.

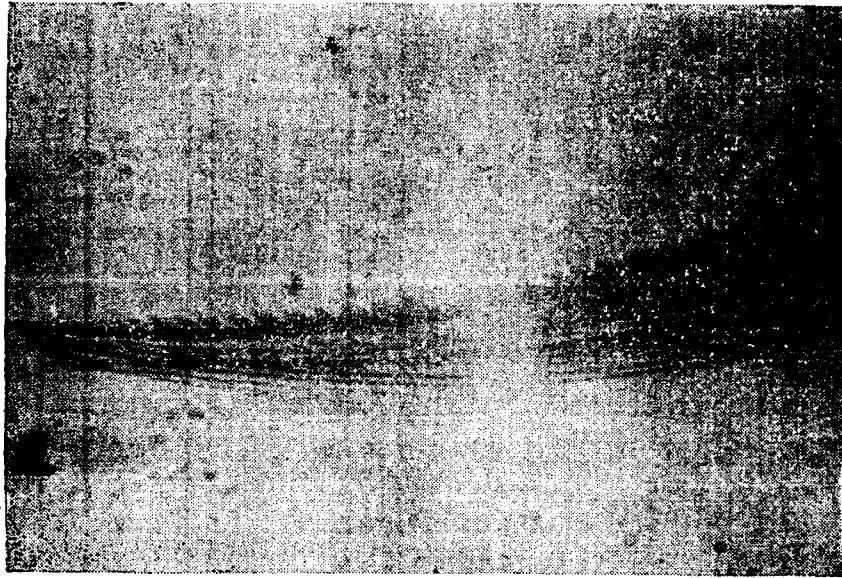


Fig. 6. ovipositor of *Toya* sp.

Table 1. Total body length and width of the female and male Insects of grass-infesting Delphacid.

	Length (mm)	Width (mm)
Female		
Mean	2.2	1.1
S.D.	0.11	0.15
Male		
Mean	1.8	0.8
S.D.	0.14	0.16

broad as slightly narrower than pronotum. Vertex short. Frons elongate narrow. Clypeus triangular. The head of the insects shows transverse ridges (vertical bands) between eyes in the frons region. Antennae short, second segment of antennae about twice as long as first. Sensoria present on second segment of antenna. The number of sensoria more in females than in males. Fore wings as long as body, apically rounded, venation in apical half dark in colour and in basal half light in colour. Wings larger in females than in males. Tibial spur (colour) broad, 18-20 minute teeth on hind margin. First hind tarsal segment slightly longer than the other two together. Aedeagus small, tubular, blunt and cone shaped tip with 23-26 teeth arranged spirally along the margin. Parameres small, broad, narrow in middle, apically united. Ovipositor long, saw like teeth (32 to 46) and tip is not perfectly pointed (Fig. 1-6).

SUMMARY

Morphology of a new delphacid, *Toya* sp. was studied during 86-87 at Annamalaiagar. Adults of *Toya* sp. are yellowish brown in colour, with transverse ridges running between eyes in the frons region. Wings larger in females than in males. Tibial spur broad 18-20 small minute teeth on hind margin. Aedeagus small tubular blunt and coneshaped tip, 23-26 teeth arranged spirally along the margin. Parameres small, broad, narrow in middle, apically united. Ovipositor long, 32-46 saw like teeth and tip is not perfectly pointed.

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