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Notes on the Genus *Tyrphodelphax* VILBASTE, 1968 with Descriptions of Two New Asiatic Species

(Homoptera, Delphacidae)

With 11 Figures

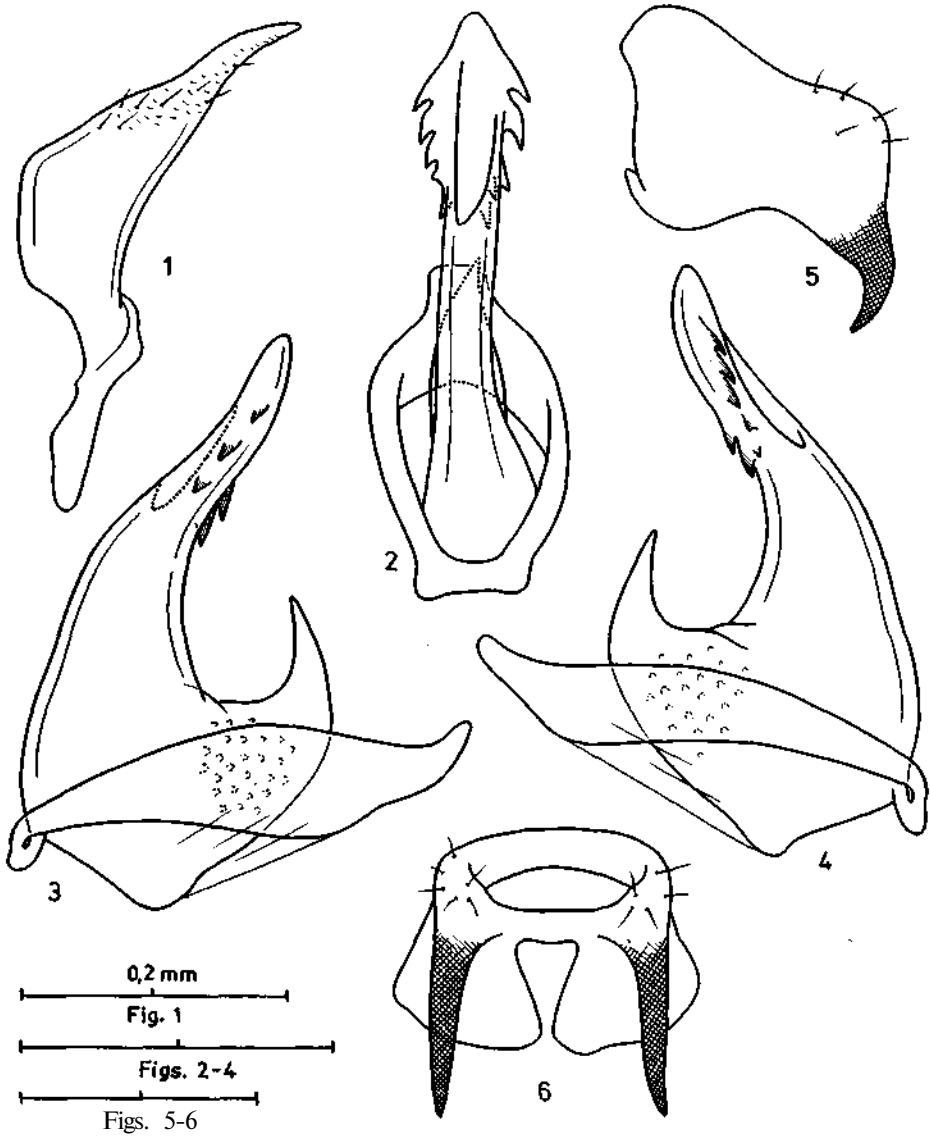
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Summary. The paper describes two new species of the genus *Tyrphodelphax* VILB.: 1) *T. eburneocarinatus* sp. n. from the Soviet Maritime Territory, the Tuva and Yakut Autonomous Regions, Amur, Irkutsk, Chita, Krasnoyarsk and Magadan Regions, - it is allied to European *T. albocarinatus* (STAL) but differing from it in more shortened forewings of males and females as well as in the presence of pointed angle at basal prolongation of penis dorsal side, - 2) *T. tshaunicus* sp. n. from Magadan Region (Chukotsk) allied to *T. distinctus* (FL.) and *T. privignus* EM. but having two pairs of long processes at penis apex. New records and key to all species of the genus are given.

The genus *Tyrphodelphax* was described by J. VILBASTE (1968) for two European species, *T. distinctus* (FLOR, 1861) and *T. albocarinatus* (STAL, 1858). Later additional species, *T. privignus* EMELJANOV, 1972 was described from Mongolia. There are two more species among the Far Eastern materials at my disposal; descriptions of them accompanied by new records and the key for all species of the genus are given below. Types of the species described are preserved in the collection of Leningrad Zoological Institute, part of paratypes - in the author's collection.

***Tyrphodelphax eburneocarinatus* sp. n.** (Figs. 1-6)

Vertex nearly square, at the middle slightly longer than at sides. Keels of vertex rather sharp; transverse keels anteriorly bordering the posterior pits are situated in the middle of vertex; longitudinal carinae convergent at transition to face. The keels ivory, interspaces black, the pits orange-brown. Face deep black, frontoclypeus nearly twice as long as its maximum width observed near posterior margin of eyes. Frontal keels sharp, high, ivory. Pronotum nearly 1.3-1.4 times shorter than head, with sharp keels and posterior margin concaved, obtuse-angled; lateral keels divergent, posteriorly curved behind eyes and evanescent there. Width of pronotal disc in fore margin slightly more than length of its medial keel. Mesonotum nearly twice as long as pronotum, with sharp keels. Pronotum and mesonotum orange or brownish with ivory keels, usually more or less widely edged with the same colour. Forewings shortened, apically truncate, not covering three abdominal segments in males and five segments in females, - proportion of length and width



Figs. 1-6. *Tyrphodelphax eburneocarinatus* sp. n.

1: style — 2: penis from below — 3: left side of penis — 4: right side of penis — 5: anal tube from side — 6: the same from below.

of forewings is 1.29—1.53. Coloration of forewings lightly-brown; costal vein, apical and commissural margin ivory, veins partly lightened too. Abdomen dorsally black, with lightened dorsal surface of pygophore and with 1-3 longitudinal rows of light spots near

posterior margins of tergites. Legs ivory with black longitudinal stripes; tarsal apices from the end of basal joint deep black. Main dimensions are given in the Table 1.

It resembles European *T. albocarinatus* in outward morphology and coloration but differs in wider head, vertex and pronotum, in much shorter forewings as well as in some peculiarities of male genitalia given below.

T. albocarinatus (STAL)

Penis on dorsal side with roundish serrated basal prolongation.

Teeth on dorsal side of penis numerous, reaching basal prolongation.

Anal tube with appendices set close to its ventral surface (see in profile).

Holotype male. Soviet Maritime Territory, Yakovlevka, May 28, 1966, ANUFRIEV coll.

Paratypes. Soviet Maritime Territory: Yakovlevka, May 28-29, 1966, 2 males and 10 females, ANUFRIEV coll.; Reservation „Kedrovaya Pad” (Cedar valley), June 7, 1964, 16 females, ANUFRIEV coll.; Vinogradovka, June 3, 1929, 1 female, KIRITSHENKO coll. Amur Region, 40 km W Svobodny, May 30 — June 18, 1959, 1 male and 9 females, KERZHNER coll. The Yakut Autonomous Region, Keedey-lake, from Yakutsk to Amgariver, July 15, <19>25, 1 female, IVANOV coll. Irkutsk Region, Belaya-river of Angara system, <18>74, 1 female, GARTUNG coll. Chita Region, the Upper Ila, July 1-3, 1949, 2 females, N. FILIPPOV coll. Krasnoyarsk Region, Ermakovsky distr., 10 km below Usinsk, June 3, 1979, 2 males and 21 females, A. AVERKIN coll. The Tuva Autonomous Region. Todzha, July 1, 1968, 13 females, KOPYLOVA coll. Magadan Region; Chukotsk, 15 km S Ust-Chaun, July 23, 1978, 1 female, E. MATYS coll.; Ola valley, 13 km N Klyopka, July 2, 1975, 1 female, E. MATYS coll.; Ola valley, 30 km N Magadan, June 21, 1975, 1 female, MARSCHAKOV coll.

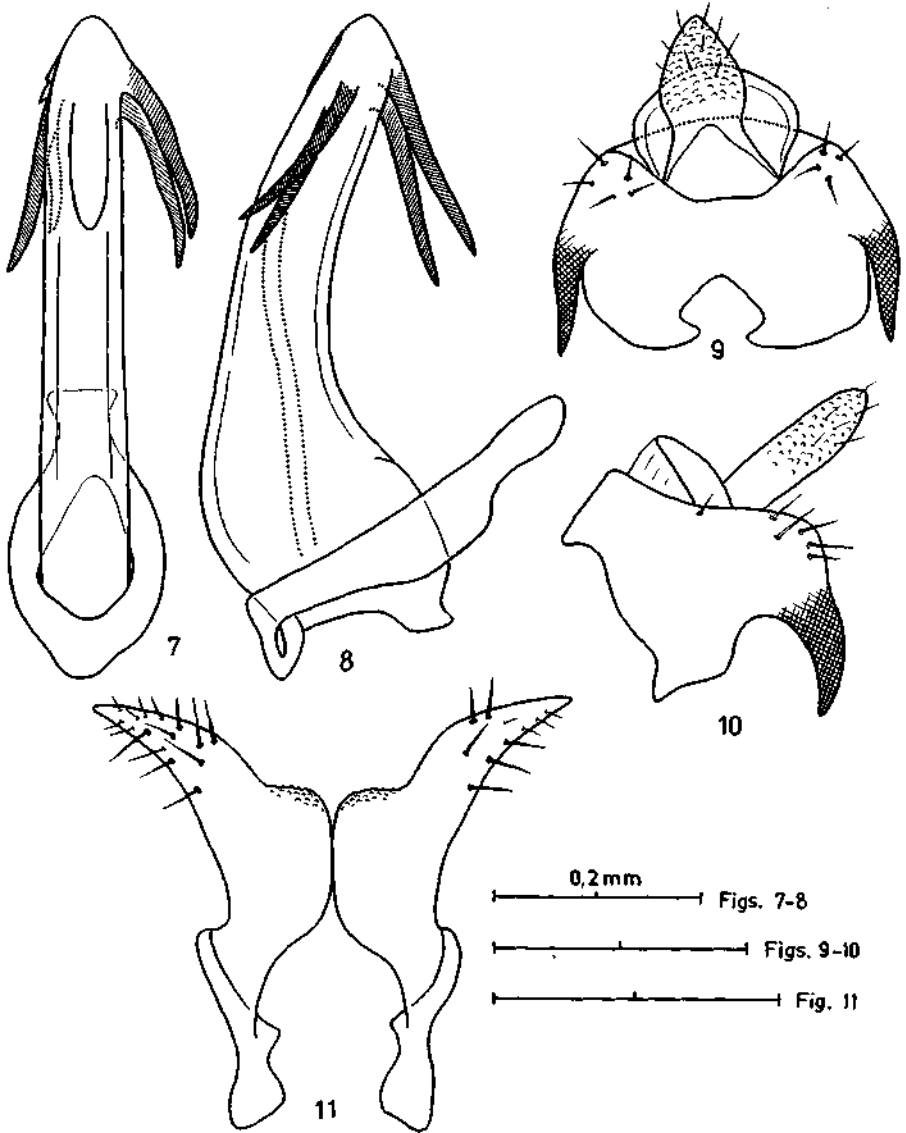
Nearly all specimens were collected in sedge tussock bogs.

Two females recorded from Mongolia as *T. albocarinatus* by A. F. EMELJANOV (1977) possibly belong to this species too.

T. albocarinatus and *T. eburneocarinatus* obviously represent the result of divergence of initially one species possibly caused by division of its area into two separate parts, western and eastern, isolated in the past and probably nowadays due to severity of climate in continental sectors of Eurasia.

***Tyrphodelphax tshaunicus* sp. n. (Figs. 7—11)**

Vertex slightly longer than its width, black with light-yellow keels and brown posterior pits. Face black with high yellow keels; frontoclypeus nearly twice as long as maximum width observed under eyes. Pronotum nearly 1.5 times shorter than head, of the same form as in previous species. Coloration of pronotum and mesonotum yellow with brown patches behind eyes and on pronotal disc as well and with brown stripes between mesonotal keels. Forewings shortened, posteriorly rounded, the proportion of length and width is nearly 1.7. Legs yellowish with black longitudinal stripes and black apical tarsal joints.



Figs. 7—11. *Tyrphodelphax tshaunicus* sp. n.

7: penis from below — 8: penis from side — 9: anal tube from below — 10: the same from side - 11: styles.

It clearly differs from the other species of the genus in some peculiarities of male genitalia. Penis somewhat flattened at sides, gradually narrowed from base to apex in profile and archedly curved to dorsal side. Gonopore ventral subapical. A pair of long subapical processes on each side of penis. Styles as in other species of the genus, with serrated

roundish inner angle and apical part gradually narrowed to the end. Anal tube with well sclerotized ventral side having deep basal cut; appendices of anal tube wide apart and with apices strongly remote from ventral surface.

H o l o t y p e male. Magadan Region, Chukotsk, 60 km ENE Baranikha, July 19, 1977, E. MATYS coll.

It is similar to *T. distinctus* and *T. privignus* in outward appearance and morphology of male genitalia; all of them apparently form phylogenetically one group.

Tyrphodelphax privignus EMELJANOV, 1972

M a t e r i a l e x a m i n e d . Taimyr Peninsula, Nizhniaya Agapa, July 9 — August 4, 1973, 22 specimens, ZHERIKHIN and SUKATCHOVA coll. (Zoological Museum of Moscow State University, author's collection).

Tyrphodelphax distinctus (FLOR, 1861)

M a t e r i a l e x a m i n e d . USSR, Perm Region, Chusovoy distr., Srednyaya Us'va, June 3—10, 1957, 10 specimens, FILIPPOVA coll. (author's collection).

Key to species of the genus

Tyrphodelphax VILB.

- 1 (4) Penis on dorsal side with serrated or warty basal prolongation.
- 2 (3) Forewings of brachypters 2.3–2.6 times as long as broad. Anal style whitish. Basal prolongation of penis rounded. **T. albocarinatus** (STAL, 1858)
(Male genitalia are figured by VILBASTE 1971 and OSSIANNILSSON 1978)
D i s t r i b u t i o n . Austria, Czechoslovakia (Bohemia), Denmark, Germany (GDR and GFR), Poland, Norway, Sweden, Finland, USSR (Estonia, north of the European part) (NAST 1972).
- 3 (2) Forewings of brachypters 1.2–1.6 times as long as broad. Anal style dark. Basal prolongation of penis tapered into long tooth. **T. eburneocarinatus** sp. n. (Figs. 1–6)
D i s t r i b u t i o n . USSR (Soviet Maritime Territory, the Tuva and Yakut Autonomous Regions, Amur, Irkutsk, Chita, Krasnoyarsk and Magadan Regions).
- 4 (1) Penis gradually narrowed from base to apex, without basal prolongation.
- 5 (8) Penis without long subapical processes.
- 6 (7) Phragma of pygophore dorsally moderately tapered backwards. Penis shorter. **T. distinctus** (FLOR, 1861)
(Male genitalia are figured by VILBASTE 1971 and OSSIANNILSSON 1978)
D i s t r i b u t i o n . Great Britain (England, Scotland), Ireland, Austria, Czechoslovakia (Bohemia), Switzerland, Denmark, Germany (GDR and GFR), Poland, Norway, Sweden, Finland, USSR (Estonia, Latvia) (NAST 1972); it is firstly recorded here from Perm Region of the USSR.
- 7 (6) Phragma of pygophore strongly tapered backwards dorsally. Penis longer. **T. privignus** EMELJANOV, 1972
(Male genitalia are figured by EMELJANOV 1972)

Distribution: Mongolia (EMELJANOV 1972), USSR (Taimyr Peninsula - new record!).

8 (5) Penis with pair of long subapical processes on each side.

T. tshaunicus sp. n. (Figs. 7-11)

Distribution: USSR (Magadan Region - Chukotsk.)

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