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Author(s)	VILBASTE, J.
Citation	Insecta Matsumurana Supplement, 6: 1-12
Issue Date	1969-10
Doc URL	http://hdl.handle.net/2115/22232
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Type	bulletin
Additional Information	



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ON SOME EAST-ASIATIC LEAFHOPPERS DESCRIBED
BY PROFESSOR S. MATSUMURA

(HOMOPTERA: CICADINEA: IASSIDAE)

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This study was undertaken in connection with the author's investigations on the fauna of Homoptera Cicadinea of the Primorye Territory, with the aim of establishing the correct status of some still uninvestigated species of "*Deltocephalus*", "*Thamnotettix*" and "*Athysanus*" described by the late Prof. S. Matsumura. Most of these species have been found outside of Japan and therefore they are not included in the tentative check list given by Ishihara (1953). The present investigation is possible only due to the kindness of Prof. C. Watanabe and Dr. S. Takagi. The author expresses his sincerest thanks for the permission to investigate the corresponding types and for any troubles connected with their shipment.

One part of the results of the investigation was already published in a previous paper (Vilbaste, 1967) and another part in a work about the Cicadina-fauna of Primorye Territory (Vilbaste, 1968). Moreover, species belonging to the genus *Recilia* Edw. will be published in a separate work.

Deltocephalus chohakusanus Matsumura, 1915 (n. syn.)

Deltocephalus chohakusanus Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 163-164, 1915.

= ***Jassargus repletus*** (Fieber, 1869)*

Deltocephalus repletus Fieber, Verh. Zool.-Bot. Ges. Wien 19: 208, 1869.

Deltocephalus chohakusanus was originally described from 1 male and 1 female from Korea (Mt. Chohaku). The author could examine both specimens. In the male the abdomen was somewhat swollen. Having compared the genitalia of the present male with those of *Jassargus repletus* the author could not find any special differences between them, except for the following characters, which are probably due to parasitism: 1) pygofer lobes are without tooth on the lower edge; 2) styles are short, not reaching to the hind margin of subgenital plate, the talon being small; 3) connective is U-shaped; 4) tip of aedeagus is very abruptly cut.

Deltocephalus chosenis Matsumura, 1915

Deltocephalus chosenis Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 164-165, 1915.

= ***Urganus chosenis*** (Matsumura, 1915) (n. comb.)

= *Urganus paradarrinus* Dlabola, 1965, Acta faun. ent. Mus. Nat. Pragae 11: 113-114 (n. syn.).

This species was originally described on the basis of 2 males from Korea (Mt.

* The name in gothic indicates the valid name.

Chohaku) and some specimens from Sakhalin. In the specimens examined (from Korea) the genitalia are the same as those of *U. paradarrinus* from Mongolia.

Deltocephalus cornutus Matsumura, 1915 (n. syn.)

Deltocephalus cornutus Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 169, 1915.

= ***Sorhoanus acarifer*** (Lethierry, 1888)

Deltocephalus acarifer Lethierry, Rev. d'Ent. 7: 253, 1888.

The holotype (♀) of *D. cornutus* from Korea (Mt. Chohaku) agrees with specimens of *Sorhoanus acarifer* from Siberia (Altai) in size, coloration and pattern.

Deltocephalus fraternus Matsumura, 1915 (nec Ball, 1911)

Deltocephalus fraternus Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 166, 1915.

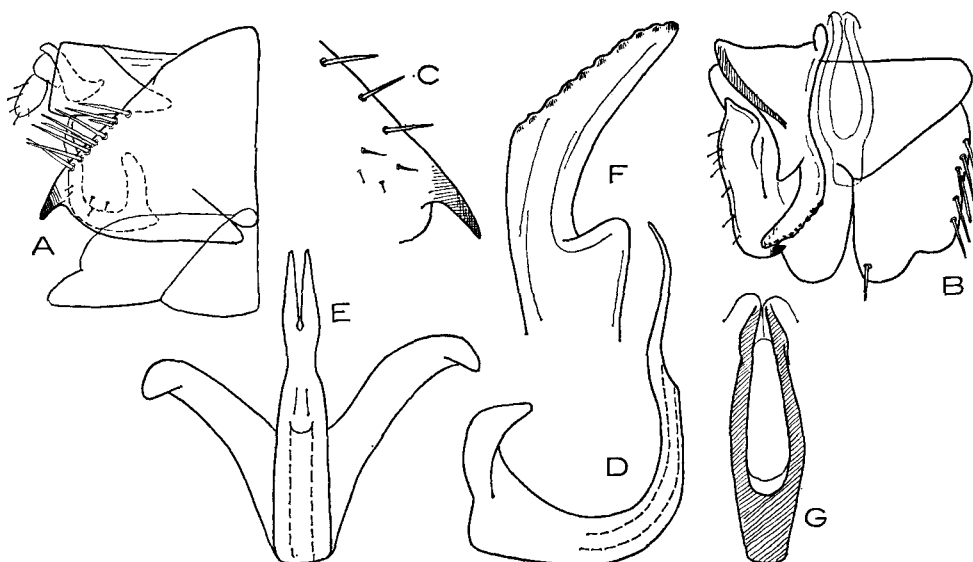


Fig. 1. *Diplocolenus ikumae* (Mm.) ♂: A—genital segment, lateral view (enlargement 54 ×); B—genital valve and plates (right ventral, left dorsal view, 54 ×); C—tip of the pygofer lobe (115 ×); D—aedeagus, lateral view (115 ×); E—same, caudal view (155 ×); F—style, dorsal view (155 ×); G—connective (115 ×).

= ***Diplocolenus fraternellus*** (Baker, 1925)

Deltocephalus fraternellus Baker, Philipp. Journ. Sci. 27: 537, 1925.

Already in a previous paper (Vilbaste, 1967) the author suggested that *D. fraternus* is probably a member of *Diplocolenus* Rb. (in contrast to Emelyanov (1966), who brought it under the genus *Futasujinus* Ish.). This view is now confirmed by the investigation of types. In the collection there are 3 females from Seoul and 2 females from Korea (without exact locality). The first three belong to the genus *Diplocolenus* (near to *D. frauenfeldi* (Fb.) or *D. tripartitus* (Ks.)) whereas the others to the genus *Futasujinus*. The author is convinced that just the specimens of the first sample are those indicated in the original diagnosis as on the label (which is identical with the labels of the other

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species collected from Mt. Chohaku) is indicated also the collector, Mr. Ikuma, who has collected the material on which the work of Matsumura (1915) is based. One of these specimens is obviously figured in abovementioned work (Matsumura, 1915) and also in Matsumura's "6000 Insects of Japan" (it is indicated by a broken wing tip). As there were only females, the species has not yet been established and topotypic material is needed for it.

Deltocephalus ikumae Matsumura, 1911

Deltocephalus ikumae Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 4: 29-30, 1911.

= ***Diplocolenus ikumae*** (Matsumura, 1911)

This species was originally described on the basis of 8 specimens from Sakhalin, of which 6 females could be examined by the author. Moreover, other specimens (1 ♂, 6 ♀) also from Sakhalin were in the collection under the species-name "*Deltocephalus towadensis* Mats." together with *Futasujinus towadensis* (Mm.). The genitalia of the male are given in Fig. 1.

The specimens mentioned and figured by Ishihara (1966) under this species-name apparently belong to another species (the genital plates are shorter, the aedeagus has very wide basal part, the stylus' tip is sharper, etc.).

Deltocephalus karafutonis Matsumura, 1914 (n. syn.)

Deltocephalus karafutonis Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 210-211, 1914.

= ***Psammotettix alienus*** (Dahlbom, 1851)

Thamnotettix aliena Dahlbom, Svenska Vetensk. Akad. Handl. 1851: 187.

The only specimen (female) of *D. karafutonis* agrees in size and coloration with specimens of *Psammotettix alienus* collected by the present author from Korsakov (type locality of *D. karafutonis*) and Juzhno-Sakhalinsk.

Deltocephalus maritimus Matsumura, 1902 (n. syn.)

Deltocephalus maritimus Matsumura, Termesz. Fü. 25: 396-397, 1902.

= ***Takagiella tezuyae*** (Matsumura, 1902)

Deltocephalus tezuyae Matsumura, Termesz. Fü. 25: 394-395, 1902.

Having examined specimens (2 ♂, 10 ♀), of which the exact locality is unknown, the author has been convinced that *maritimus* should be suppressed as a synonym of *tezuyae*.

Deltocephalus octomaculatus Matsumura, 1915 (n. syn.)

Deltocephalus octomaculatus Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 166-167, 1915.

= ***Endria nebulosa*** (Ball, 1900)

Lonatura nebulosa Ball, Canad. Ent. 32: 341, 1900.

Deltocephalus sachalinensis Matsumura, 1915 (n. syn.)

Deltocephalus sachalinensis Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 168, 1915.

= ***Errastunus ocellaris*** (Fallén, 1806)

Cicada ocellaris Fallén, Hem. Suecica 2: 33, 1806.

D. sachalinensis should be suppressed as a synonym of the holarctic species *Erra-*

stunus ocellaris.

Deltocephalus tezuyae Matsumura, 1902

Deltocephalus tezuyae Matsumura, Termesz. Füz. 25: 394-395, 1902.

= ***Takagiella tezuyae*** (Matsumura, 1902)

Takagiella, n. gen.

Head distinctly wider than pronotum. Vertex relatively narrow, less than 1/3 of width of head, about as wide as its length in the middle. Frons distinctly longer than its width. Anteclypeus parallel-sided, its under margin rounded. Cheeks with greatly rounded emargination below the eyes. Ocelli great, lying very near (under their diameter) the eyes, on their level the ocellocular area is somewhat narrowed. Rostrum

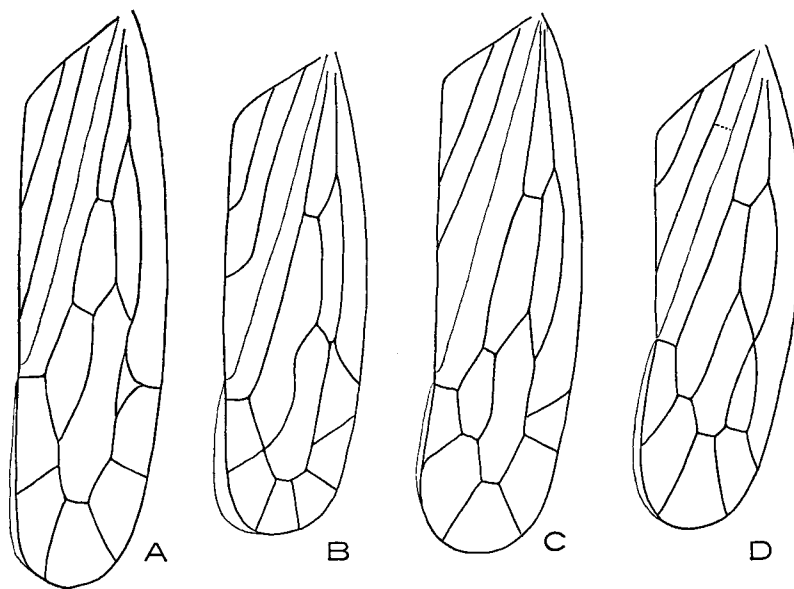


Fig. 2. Venation of the fore wing (schematically): A—*Takagiella tezuyae* (Mm.) (26 ×); B—*Alishania formosana* (Mm.) (20 ×); C—*Hengchunia koshunensis* (Mm.) (26 ×); D—*Wanritettix wanrianus* (Mm.) (20 ×).

very short (about 0.65 length of the anteclypeus). Pronotum about two times (or somewhat less) as wide as long. Fore wings (Fig. 2 A) longer than abdomen, with 3 subapical cells, of which the fore one is very small, triangular. MCu subapical is present. Spinulation of the legs: I-1.4; II-4.4; III-2.2.1.

Male genitalia (Fig. 3 A-H): Pygofer lobes very long (extending more than 1/2 the length over the tips of genital plates), with very numerous macrochaetae. Subgenital plate trapezoidal; genital plates about as long or a little longer than subgenital plate, on sides with a few (3) macrochaetae, on the median angle with a small upward directed tooth. Styles wide, plate-like, but placed somewhat diagonally and therefore they seem (in the dorsal view) to be quite narrow, sickle-form. Connectiv parallel-sided. Aedeagus simple, somewhat flattened, with a small basal part. Gonopore

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subapical. Anal tube relatively weakly sclerotized.

Female genitalia (Fig. 3 I): 7th sternite in the middle of the hind margin with two wide but short lobes, separated by a narrow sharp incision. Ovipositor extending somewhat behind the tip of the pygofer.

Type species: *Deltocephalus tezuyae* Matsumura, 1902.

Type locality: Japan (Akashi, Takasago).

This genus is characterized by the narrow crown and by the very small triangular anterior subapical cell of the fore wings.

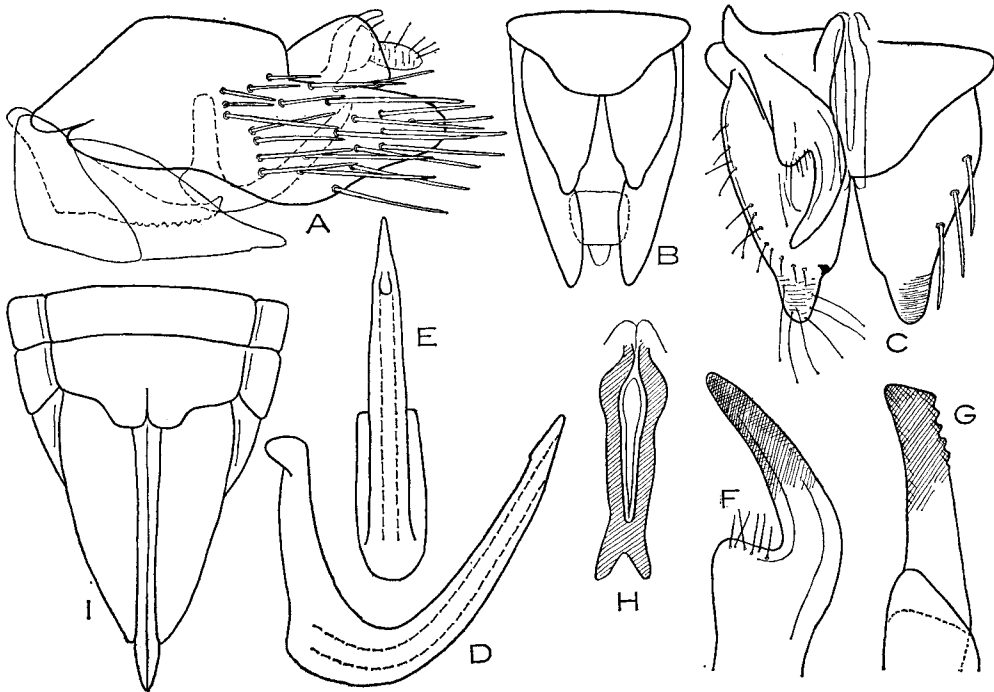


Fig. 3. *Takagiella tezuyae* (Mm.): A—male genital segment, lateral view (77 ×); B—genital segment, ventral view (54 ×); C—genital valve and plates (77 ×); D—aedeagus, lateral view (155 ×); E—same, caudo-ventral view (155 ×); F—style, dorsal view (155 ×); G—style, lateral view (155 ×); H—connective (115 ×); I—female abdomen end (47 ×).

Thamnotettix formosanus Matsumura, 1914

Thamnotettix formosanus Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 181, 1914.

= *Alishania formosana* (Matsumura, 1914)

Alishania, n. gen.

Head with eyes wider than pronotum, its fore sides forming nearly a right angle. Vertex relatively narrow, even or slightly convex. Distance between ocelli and eyes as long as diameter of an ocellus. Frons longer than wide; anteclypeus more or less parallel-sided. Genae wide, with a wide emargination below the eye. Rostrum short,

reaching the end of fore coxae. Fore wings (Fig. 2 B) with two subapical cells. MCu subapical lacking. From the outer subapical cell an oblique vein running to the costa. Clavus without transverse veins. Spinulation of the legs: I-1.2; II-4.4; III-2.2.1.

Male genitalia (Fig. 4 A-H) very peculiarly formed: Side lobes of pygofer very long, with numerous macrochaetae. Anal tube very small, hidden between the side lobes. Subgenital plate is a \pm quadrangular, narrow, transverse plate. Genital plates at sides with additional plates, without macrochaetae. Stylus medial, with long appendage. Connective Y-shaped, lying obliquely in genital capsule. Aedeagus forked, with two gonopores.

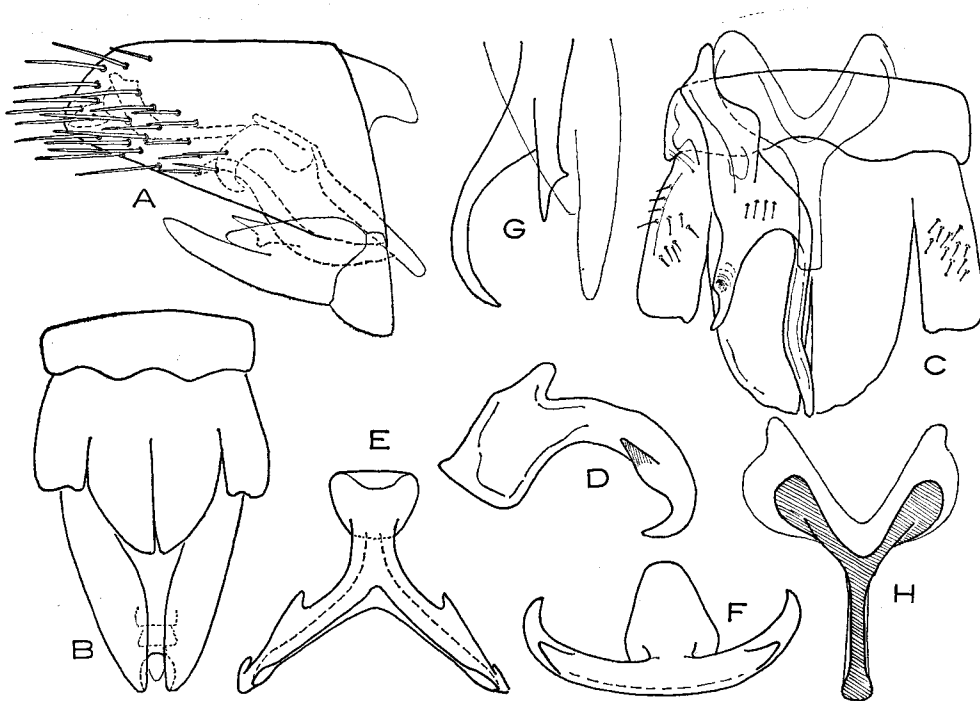


Fig. 4. *Alishania formosana* (Mm.) ♂: A—genital segment, lateral view (54 ×); B—same, ventral view (54 ×); C—genital valve, plates and stylus (77 ×); D—aedeagus, lateral view (115 ×); E—same, ventral view (115 ×); F—same, caudal view (115 ×); G—tip of the style, lateral view (77 ×); H—connective (77 ×).

Female hitherto unknown.

Type species: *Thamnotettix formosanus* Matsumura, 1914.

Type locality: Taiwan (Ali-Shan).

The genus is especially well distinct by the male genitalia and by the characteristic venation of the fore wings.

Thamnotettix hoashii Matsumura, 1915 (n. syn.)

Thamnotettix hoashii Matsumura, Trans. Sapporo Nat. Hist. Soc. 5: 161-162, 1915.

= *Thamnotettix confinis* Zetterstedt, 1838

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Thamnotettix confinis Zetterstedt, Fauna Ins. Lapp. 1: 238, 1938.

Th. hoashii was originally described on the basis of one male and several females from Sakhalin. Having examined the male, which is designated by the present author as the lectotype of *hoashii*, the author has been convinced that *hoashii* should be suppressed as a synonym of *Th. confinis*.

Thamnotettix hokutonis Matsumura, 1914

Thamnotettix hokutonis Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 181-182, 1914.

= ***Peitouellus hokutonis*** (Matsumura, 1914)

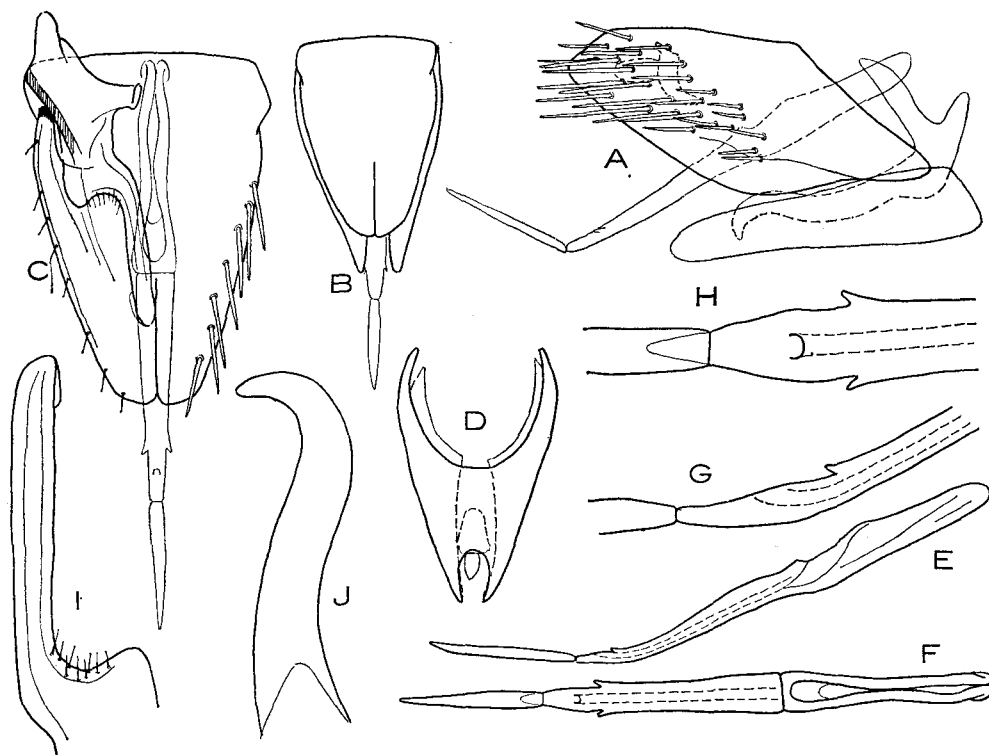


Fig. 5. *Peitouellus hokutonis* (Mm.) ♂: A—genital [segment, lateral view (45 ×); B—same, ventral view (30 ×); C—pygofer, dorsal view (30 ×); D—genital valve and plates (54 ×); E—aeedeagus and connective, lateral view (54 ×); F—same, dorsal view (54 ×); G—middle part of aedeagus, lateral view (155 ×); H—same, dorsal view (155 ×); I—style, dorsal view (115 ×); J—same, lateral view (115 ×).

Peitouellus, n. gen.

Head with eyes wider than pronotum, about as long as wide between the eyes. Fore margin of the head forming an angle somewhat greater than a right angle, its sides being somewhat arcuate. Crown slightly concave. Transition to frons rather steep. Frons longer than wide. Anteclypeus slightly narrowing downwards. Rostrum

short, reaching to the end of fore coxae. Eyes with a rather deep incision on the level of antennae. Lateral side of pronotum very short. Scutellum with long and sharp tip. Fore wings without MCu subapical. Clavus without cross veins. Apical cells short, only little longer than broad. Spinulation of the legs: I-4.4; II-4.4; III-2.2.1.

Male genitalia (Fig. 5 A-J): Pygofer long, its lower margin being turned under the genital plates, with numerous spines on sides. Anal tube situated deep between the lobes of the pygofer. Subgenital plate lacking; genital plates fused at base, with a row (in some places two) of macrochaetae on sides. Styles hook-shaped, its tip being directed downwards. Aedeagus fused with connective, straight, its apical part being articulated by joint to the stem. Gonopore situated before this articulated part, directed upwards.

Female is hitherto unknown.

Type species: *Thamnotettix hokutonis* Matsumura, 1914.

Type locality: Taiwan (Pei-tou).

Differs from any other known genera by the absence of the subgenital plate, by the partly fused genital plates and by the articulated aedeagus, tip of which folds together.

Thamnotettix infuscatus Matsumura, 1911

Thamnotettix infuscatus Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 4: 28, 1911.

This species remains still unclear. Two females on which the original description is apparently based (labelled with red "Type Matsumura") are strongly infuscated, being referred to *Elymana* sp. Seven other specimens are also strongly infuscated, of which four belong to *Cicadula flori* (J. Sb.), two to *Limotettix* sp. and one female probably to *Arthaldeus pascuellus* (Fn.).

Thamnotettix koshunensis Matsumura, 1914

Thamnotettix koshunensis Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 178-179, 1914.

= ***Hengchunia koshunensis*** (Matsumura, 1914)

Hengchunia, n. gen.

Head clearly wider than pronotum. Vertex longer than pronotum, its fore angle being rather sharp and its fore margins more or less rounded. Frons long and narrow. Emargination of genae below eyes rather low. Anteclypeus slightly narrowing downwards. Rostrum short, extending to fore coxae. Pronotum about two times wider than long. Fore wings (Fig. 2 C) with only two subapical cells. MCu subapical present. Spinulation of legs: I-1.4; II-4.4 (?); III-2.2.1.

Male genitalia (Fig. 6 A-I): Pygofer lobes very long, strongly spinulated. Subgenital plate short. Genital plates with great emargination on median margin, with apical teeth, which are directed upwards, the second group of teeth being situated near the inner corner of plates. Styles great, plate-form, somewhat winded at apex. Aedeagus short, with two pairs of hook-shaped teeth at end: one pair (greater ones) directed upwards, the second pair (smaller ones) directed downwards. To the base of the aedeagus a pair of very long and thin appendages are attached. Aedeagus relatively fast attached to the connective (but not fused).

Female genitalia (Fig. 6 J): 7th sternite slightly concave at hind margin. Ovipositor shorter than pygofer.

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Type species: *Thamnotettix koshunensis* Matsumura, 1914.

Type locality: Taiwan (Heng-chun).

The genus is characterized by the fore wings and by the male genitalia.

Thamnotettix litoralis Matsumura, 1902

Thamnotettix litoralis Matsumura, Termesz. Fiz. 25: 367, 1902.

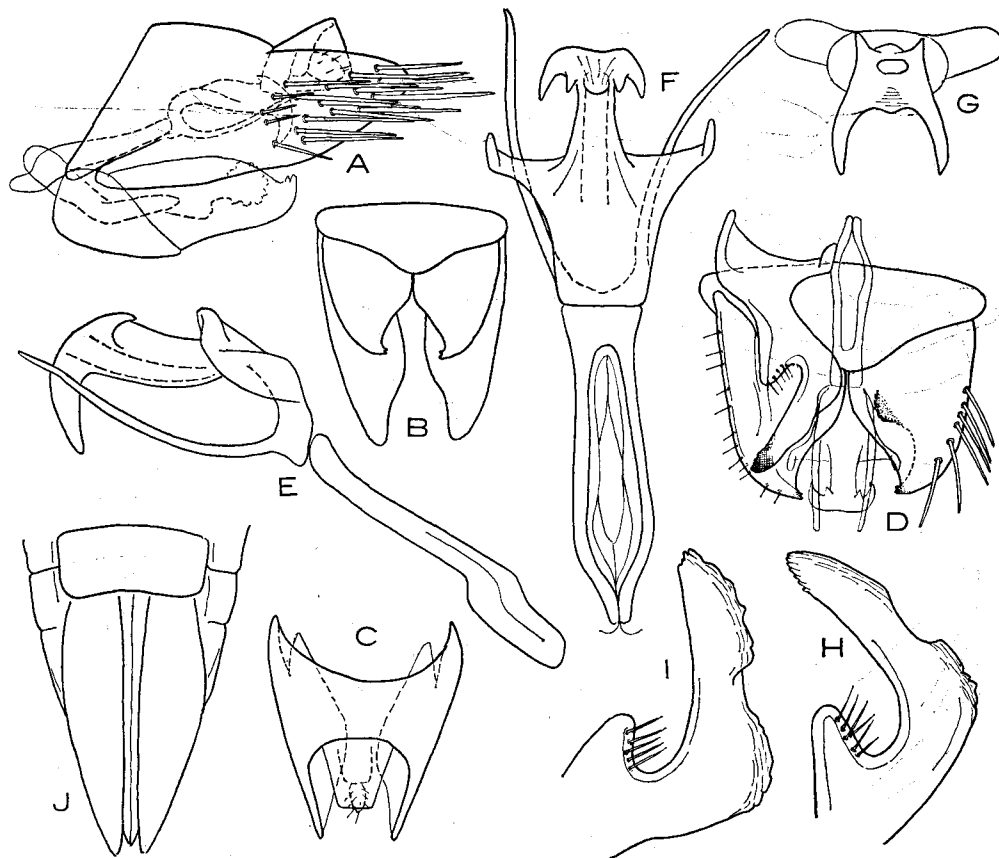


Fig. 6. *Hengchunia koshunensis* (Mm.): A—male genital segment, lateral view (77 ×); B—same, ventral view (54 ×); C—pygofer, dorsal view (54 ×); D—genital valve and plates (77 ×); E—aedeagus and connective, lateral view (155 ×); F—same, dorsal view (155 ×); G—tip of aedeagus, caudal view (155 ×); H—style, dorsal view (155 ×); I—same, dorsolateral view (155 ×); J—female abdomen end (47 ×).

This species was originally described on the basis of single female specimen, which was also seen by the author. It is impossible to give a definite taxonomic conclusion of this species until the male is examined.

Thamnotettix montanus Matsumura, 1914 (nec Van Duzee, 1892)

Thamnotettix montanus Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 182-183, 1914.

= *Watanabella montivaga* (Baker, 1924)

Thamnotettix montivagus Baker, Philip. Journ. Sci. 24: 367, 1924.

***Watanabella*, n. gen.**

Head including eyes slightly broader than pronotum and much shorter than the latter. Fore sides of head somewhat arcuate, forming an obtuse angle together. Crown slightly concave. Frons longer than wide. Anteclypeus dilated downwards. Lateral edge of genae with relatively weak emargination. Fore wings usually longer than

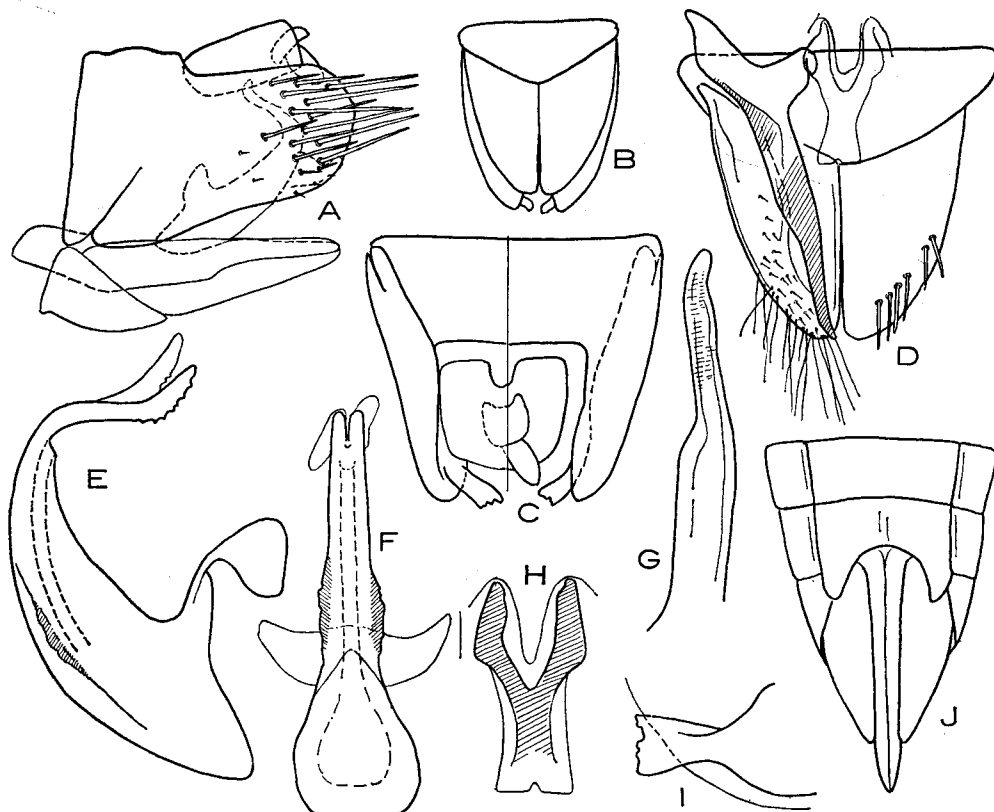


Fig. 7. *Watanabella montivaga* (Bk.): A—male genital segment, lateral view (54 ×); B—same, ventral view (30 ×); C—pygofer, right dorsal, left ventral view (54 ×); D—genital valve and plates (54 ×); E—aedeagus, lateral view (115 ×); F—same, caudoventral view (115 ×); G—style, ventral view (77 ×); H—connective (77 ×); I—appendage of pygofer lobe, median view (155 ×); J—female abdomen end (26 ×).

abdomen. MCu subapical wanting. First (outer) claval vein connected with corioclaval suture at base. Spinulation of the legs: I-3.4; II-4.4; III-2.2.1.

Male genitalia (Fig. 7 A-I): Pygofer lobes rather long, the upper and under edges being nearly parallel each other and the hind margin uniformly curved. On the inner side of lobes there is a toothed appendage, which is directed obliquely backwards. Genital plates longer than triangular subgenital plate, the outer edge being more or

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less uniformly convex. There are a few (about 6) small macrochaetae on the hind part of the under side, whereas on the upper side there are numerous long hairs. Styles long and slender, reaching to the tips of plates, the apices being turned somewhat inwards. Connective Y-shaped. Aedeagus with a sclerotized plate at base (as in *Palus*); stem with toothed keels; gonopore on fore side (at top) with two long appendages on the sides, dilated at the ends.

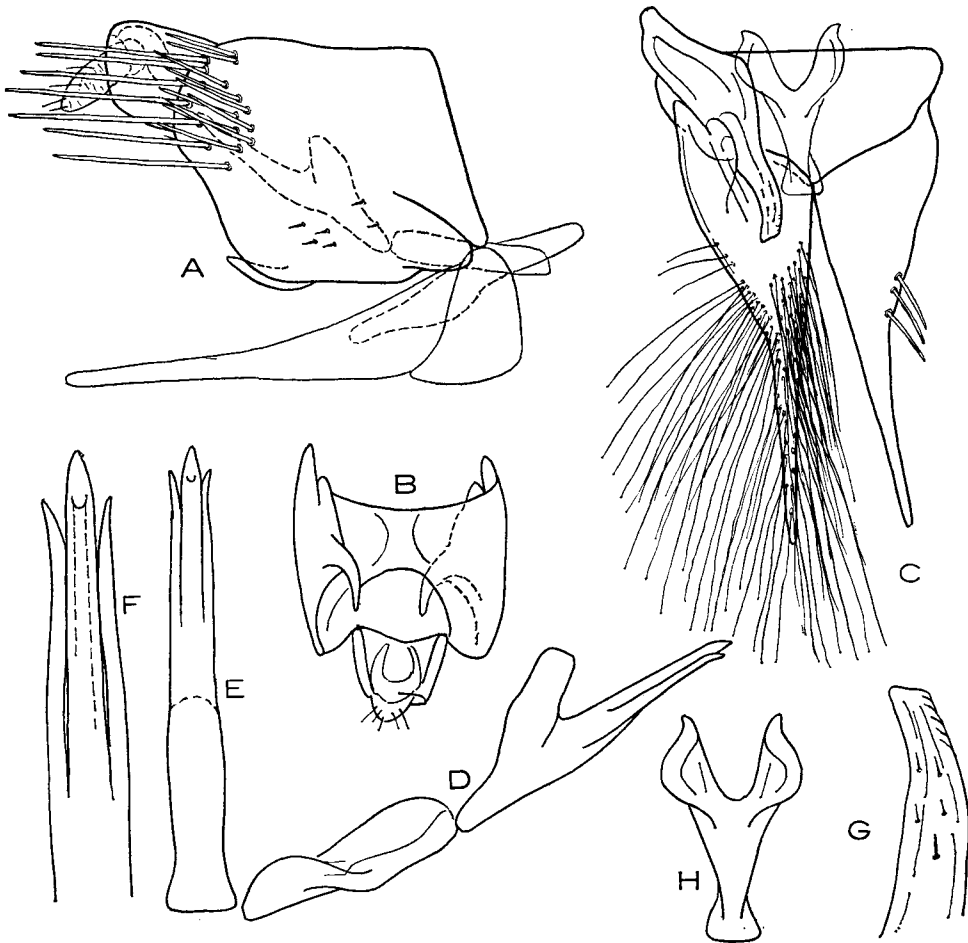


Fig. 8. *Wanritettix wanrianus* (Mm.) ♂: A—genital segment, lateral view (77 ×); B—pygofer, right dorsal, left ventral view (115 ×); C—genital valve and plates (77 ×); D—aedeagus and connective, lateral view (115 ×); E—aedeagus, ventral view (115 ×); F—aedeagus tip, ventral view (325 ×); G—tip of the style (155 ×); H—connective (115 ×).

Female genitalia (Fig. 7 J): 7th sternite with very wide rounded emargination at middle, the hind lateral margins being angularly rounded.

Type species: *Thamnotettix montivagus* Baker, 1924.

Type locality: Japan (Hokkaido: Sapporo).

This species superficially resembles *Euscelis* Br. or *Speudotettix* Rb., from which it differs mainly by the structure of the male genitalia, by the characteristic appendages on the inner wall of the pygofer lobes, by the long and narrow styles, by the sclerotized plate at the base of the aedeagus, etc.

Thamnotettix wanrianus Matsumura, 1914

Thamnotettix wanrianus Matsumura, Journ. Coll. Agr. Tohoku Imp. Univ. 5: 177-178, 1914.

= ***Wanritettix wanrianus*** (Matsumura, 1914)

Wanritettix, n. gen.

Head about as wide as pronotum, its fore angle more or less rounded, as also in fore margins. Frons rather long and narrow. Anteclypeus narrowest at upper 1/4, concave laterally. Emargination under eyes rather low. Ocelli quite large and lie so near to the eyes that the frontal sutures are almost pressed to the eyes. Pronotum much longer than vertex. Fore wings (Fig. 2 D) with three subapical cells, without MCu subapical. Transverse veins sometimes occurring in the clavus. Spinulation of the legs: I-1.4; II-4.4; III-2.2.1. First segment of hind tarsi longer than second and third segments together.

Male genitalia (Fig. 8 A-H): Pygofer obliquely truncate behind, its lower corner with inward directed hook-like appendage, and its upper corner with a group of numerous macrochaetae, which are restricted to a relatively small area. Anal tube weakly sclerotized dorsally. Subgenital plate short, with hind margin wavy and with rounded sharp angle in the middle. Genital plates with wavy lateral margins, with a very long and thin end part. Lateral margins with a few (3) macrochaetae, the upper side with very long hairs. Style simple, digitate. Connective Y-form, rather high. Aedeagus near the stem on either side with a thin appendage parallel with the stem.

Female unknown.

Type species: *Thamnotettix wanrianus* Matsumura, 1914.

Type locality: Taiwan (Wanri).

Differs from any other known genus by the male genitalia.

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