Japanese Journal of Systematic Entomology, 22 (2): 273–281. November 30, 2016.

New Records of Seventeen Delphacids (Hemiptera: Fulgoromorpha) from Japan

Satoshi FUJINUMA [1] and Masami HAYASHI [2) 3)]

[1] Asagaya-Minami 1–20–20, Suginami-ku, Tokyo, 166–0004 Japan E-mail: leptodelphax@yahoo.co.jp
[2] Department of Biology, Faculty of Education, Saitama University, Saitama, 338–8570 Japan
[3] Laboratory of Entomology, Tokyo University of Agriculture, Atsugi, 243–0034 Japan E-mail: kecera-ymhc@jcom.home.ne.jp

Abstract Seventeen species of Delphacidae are recorded from Japan for the first time: *Epeurysa distincta* Huang et Ding, 1979, *Tropidocephala andunna* Kuoh, 1979, *Altekon marpessa* (Fennah, 1956), *Cemus punctatus* (Muir, 1917), *Coronacella sinhalana* (Kirkaldy, 1906), *Falcotoya citipes* Fennah, 1969, *Falcotoya daluoensis* Ding, 2006, *Falcotoya shaluensis* Yang, 1989, *Javesella forcipata* (Boheman, 1847), *Latistria placita* (Van Duzee, 1937), *Megadelphax bidentatus* (Anufriev, 1970), *Nemetor nigrifactus* Ding, 2006, *Nycheuma nilotica* Linnavuori, 1973, *Nycheuma dimorpha* (Matsumura, 1910), *Sogatellana marginata* Kuoh, 1980, *Trichodelphax splendidus* Vilbaste, 1968 and *Unkanodes* (*Kwonianella*) *insularis* Anufriev, 1988.

Through our recent taxonomic studies and field researches, 17 delphacid planthoppers are newly recognized from Japan. We are going to record them together with brief remarks on taxonomy and/or biology. The depositories of specimens examined are abbreviated in the text: [SEHU] Faculty of Agriculture, Hokkaido University, Sapporo; [TUA] Faculty of Agriculture, Tokyo University of Agriculture; [EUMJ] Ehime University Museum, Matsuyama, Japan; [ELKU] Entomological Laboratory, Kyushu University, Fukuoka; [RUMF] Ryukyu University Museum 'Fujukan', Okinawa; [SF] Personal collection of the first author.

Before going in details, we wish to express our sincere thanks to Assoc. Prof. Kazunori Yoshizawa (SEHU), Assoc. Prof. Tadashi Ishikawa (TUA), Assoc. Prof. Hiroyuki Yoshitomi (EUMJ), Assoc. Prof. Satoshi Kamitani and Asst. Prof. Toshiharu Mita (ELKU), Mr. Takeshi Sasaki (RUMF) for loan or offer of material and useful information.

Delphacinae
Tropidocephalini

Epeurysa distincta Huang et Ding, 1979

[Japanese name: Minami-take-unka]
(Figs. 1, 29, 47)

Epeurysa distincta Huang et Ding, 1979, Acta Zootaxon. Sin., 4: 178 [Type locality: China (Hainan: Guangdong)].
Epeurysa infumata: Yang & Yang, 1986, NSC Spec. Publ. (6): 47 (nec Huang & Ding, 1979).

This planthopper, so far known from southern China and Taiwan, is newly recorded from lowlands of the Kanto District, central Honshu, to the central Ryukyus. Body length (mean): ♂ macropter, 3.8–4.2 mm (3.9 mm); ♀ macropter, 3.9–4.1 mm (4.0 mm). This species is very similar to *Epeurysa nawaii* Matsumura, 1900 widely distributed throughout Japan, but distinguishable by the brown forewing veins with darker sockets for the setae, and the strongly outwardly curved parameres (Fig. 47). As Ding (2006) noted, the figures of this species and *E. infumata* Huang et Ding, 1979 were misplaced for each other in the original descriptions. This species and *E. nawaii* were observed separately even in a same bamboo bush. The host plant is known as *Phyllostachys bambusoides* Sieb. & Zucc. cv. *castilloni* Muroi (Poaceae) in China (Ding, 2006).

Specimens examined. [Honshu] 1♂ (SF), Miya, Kamogawa, Chiba Pref., 20. VII. 2015, S. Fujinuma; 2♂ (SF), Kasana, Makinohara, Shizuoka Pref., 8. XI. 2007, T. Shimada; [Ogasawara Isles] 6♂ 6♀ (TUA), Nankinhama, Hahajima Is., 13. VI. 2007, T. Mita; 2♂ 1♀ (TUA), Ôgamiyama Park, Chichijima Is., 16–17. VI. 2007, T. Mita; [Kyushu] 1♂ (ELKU), Kagoshima, 14. VII. 1954, S. Miyamoto & Y. Hirashima; [Ryukyus] 2♂ (SF), Henoko, Nago, Okinawa Is., 2. V. 2013, S. Fujinuma.

Tropidocephala andunna Kuoh, 1979

[Japanese name: Nise-hime-kobu-unka]
(Figs. 2, 30, 48–49)

Tropidocephala andunna Kuoh, 1979, Acta entomol. Sin., 22: 176 [Type locality: China (Yunnan: Yangwu)].

This planthopper, so far known from Yunnan, China, is newly recorded from the Kanto plain, Honshu. Body length (mean): ♂ macropter, 3.2–3.3 mm (3.2 mm); ♀ macropter, 3.5–4.1 mm (3.7 mm). This species is similar to *Tropidocephala festiva* (Distant, 1906), but easily distinguishable by the following features: absence of a black spot on face at level of anterior margin of eyes (Fig. 30); clavus greenish yellow along posterior margin of forewing; outline of frons straight in lateral view (distinctly concave at middle in *T. festiva*). Japanese individuals show slight difference in the curvature of parameres (Fig. 48), but the strongly produced anal tube (Fig. 49) and the proportion of pygofer are identical to the original description. The records of *T. festiva* from Saitama Prefecture (Hayashi, 1998) are partly identical to this species. This species feeds on *Imperata cylindrica* (L.) (Poaceae) as in Japanese congeners, but prefers to dwell in rather wet grasslands.

Specimens examined. [Honshu] 1♂ 1♀ (SF), Kofukabori, Nasu, Tochigi Pref., 18. VIII. 2012, S. Fujinuma; 4♂ 2♀, Happo, Washimiya, Saitama Pref., 17. VII. 2004, R. Kisimoto; 3♂ 1♀, Heirinji, Iwatsuki, Saitama Pref., 19. VII. 1999, S. Ishida *et al.*; 2♂ 2♀, same data except 8. VIII. 1999; 1♂ 1♀ (TUA), Akigase, Sakura-ku, Saitama Pref., 24. V. 1984,

M. Hayashi *et al*.; 9♂ 17♀ (TUA), same data except 2. VI. 1984; 2♂ 11♀ (TUA), same data except 31. V. 1985; 2♀ (TUA), same data except 17. VI. 1985; 3♂ 1♀ (TUA), Gôdo, Higashi-matsuyama, Saitama Pref., 18. IX. 1996, M. Hayashi *et al*.; 2♂ 12♀ (TUA), Kamigarako, Higashi-matsuyama, Saitama Pref., 4. VIII. 2010, M. Hayashi *et al*.; 1♀ (TUA), Sue, Hatoyama, Saitama Pref., 31. V. 2010, M. Hayashi *et al*.; 2♂ (TUA), same data except 27. VII. 2010; 2♀ (TUA), same data except 23. VIII. 2010; 2♀ (TUA), Kita-hirasawa, Hidaka, Saitama Pref., 10. VI. 2010, M. Hayashi *et al*.; 7♂ 10♀ (SF), Shimofukuda, Narita, Chiba Pref., 17. V. 2015, S. Fujinuma; 2♀ (SF), Ôdake, Narita, Chiba Pref., 26. V. 2012, S. Fujinuma; 18♂ 14♀ (SF), Yôanji, Ôamishirasato, Chiba Pref., 19. VII. 2015, S. Fujinuma; 6♂ 9♀ (TUA), Osogi, Ôme, Tokyo Met., 5. VI. 1986, M. Hayashi *et al*.

Delphacini

Altekon marpessa (Fennah, 1956)

[Japanese name: Okinawa-himekuro-unka]

(Figs. 3, 31, 50)

Delphacodes marpessa Fennah, 1956, Ins. Micronesia, 6: 124 [Type locality: Western Caroline Is. (Yap)].
Altekon marpessa: Fennah, 1975, Entomol. Scand., 4: 125.

This planthopper, so far known from China and Micronesia, is newly recorded from the central Ryukyus. Body length: ♂ brachypter, 1.5–1.7 mm; ♀ macropter, 2.7 mm; brachypter, 1.8 mm. This species is basically shiny black and very similar to *Altekon nigriella* (Ishihara, 1954) widely distributed in the Ryukyus, but distinguishable by the light yellow antennae (Fig. 31) and a pair of lateral processes situated before tip of the aedeagus (Fig. 50). This species was found in grasslands surrounded by evergreen forests. The host plant is unknown.

Specimens examined. [Ryukyus] 2♂ 2♀ (SF), Uka (Ie For. Rd.), Kunigami, Okinawa Is., 3. V. 2013, S. Fujinuma.

Cemus punctatus (Muir, 1917)

[Japanese name: Okinawa-gomafu-unka]

(Figs. 4, 32, 51)

Phyllodinus punctatus Muir, 1917, Proc. Haw. entomol. Soc., 3: 320 [Type locality: Formosa (Daimokko)].
Cemus punctatus: Yang, 1989, NSC Spec. Publ. (6): 131.

This planthopper, so far known from Yunnan and Taiwan, is newly recorded from the central Ryukyus. Body length: ♂ brachypter, 2.0–2.1 mm. This species is similar to Japanese congeners, but distinguishable by the legs with white tibiae (apical part) and tarsi (whole part), the broad and medially excavated ventromedial lobe of pygofer with a pair of lateral short projections (Fig. 51). Japanese records of *Cemus nigroclypeatus* (Kuoh, 1982) formerly recorded as *C. nigropunctatus* (Motschulsky, 1863) (Fujinuma, 2016) from the Ryukyus should be reconfirmed because its brachypterous form is very similar to this species. A specimen examined was collected in rather dry grasslands. The host plant is known as *Eleusine indica* (L.) (Poaceae) in China (Ding, 2006).

Specimens examined. [Ryukyus] 1♂ (SF), Bise, Motobu, Okinawa Is., 5. V. 2013, S. Fujinuma; 1♂ (SF), Awa, Nago, Okinawa Is., 6. V. 2013, S. Fujinuma; 1♂ (SF), Teniya Riv., Teniya, Nago, Okinawa Is., 4. V. 2013, S. Fujinuma.

Coronacella sinhalana (Kirkaldy, 1906)

[Japanese name: Shiroheri-unka]

(Figs. 5, 33)

Delphacodes sinhalana Kirkaldy, 1906, Can. Entomol., 38: 156 (replacement name for *Liburnia frontalis* Melichar, 1903) [Type locality: Ceylon (Henaratgoda)].
Coronacella sinhalana: Fennah, 1975, Entomol. Scand., 4: 108.
Liburnia frontalis Melichar, 1903, Homopteren-Fauna von Ceylon: 100.
Delphax puella: Kirkaldy, 1907, Bull. Haw. Sugar Pl. Assoc. Exp. Sta. Div. Entomol., 3: 160 (nec Van Duzee, 1897).
Kelisia kirkaldyi Muir, 1917, Proc. Haw. Entomol. Soc., 3: 329 (replacement name for *Coronacella bella* Metcalf, 1950, B. P. Bishop Mus. Occ. Pap., 20 (5): 60 [Type locality: Micronesia (Truk Islands: Tarik Island)].

This planthopper, widely known from Taiwan to Sri Lanka, is newly recorded from the Yaeyama Isles, southern Ryukyus. Body length: ♂ macropter, 3.0 mm; ♀ macropter, 3.2 mm. This species is similar to male *Ulanar muiri* (Metcalf, 1943) widely distributed in the Ryukyus, but distinguishable by a pair of the broad white stripes along lateral carinae of frons (Fig. 33), whitish posterior tip of the mesonotum, and anterior margin of the vertex distinctly incised between the carinae (Fig. 5). This species is infrequently observed in Japan while abundant in Taiwan.

Specimens examined. [Ryukyus] 1♂ (SF), Sokohara Riv. (near Sokohara Dam), Ôhama, Ishigaki Is., 9. IX. 2012, S. Fujinuma; 1♀ (SF), Urauchi, Iriomote Is., 8. IX. 2012, S. Fujinuma.

Falcotoya citipes Fennah, 1969

[Japanese name: Tsukiige-tategoto-unka]

(Figs. 7, 34)

Falcotoya citipes Fennah, 1969, Pacif. Ins. Monogr. 21: 41 [Type locality: New Caledonia (La Foa)].

This planthopper, so far known from China, Sri Lanka and New Caledonia, is newly recorded from Yakushima Is. and the Yaeyama Isles. This species is whitish pale brown except for the darker face and male genitalia. Body length (mean): ♂ macropter, 2.7–2.8 mm (2.7 mm); brachypter, 1.7–1.9 mm (1.8 mm); ♀ brachypter, 2.3–2.6 mm (2.3 mm). This species is similar to *Metadelphax propinquua* (Fieber, 1866) widely distributed in the Ryukyus, but distinguishable by the dorsolateral margins of pygofer without inflected processes, and the parameres widened subapically. As noted by Fennah (1969), adults and nymphs were found along seashores, feeding on *Spinifex littoreus* (Burm. f.) (Poaceae). Even if they accidentally fall from the host, finding them is rather difficult

Figs. 1–14. Delphacid planthoppers new to Japan. — 1, *Epeurysa distincta*; 2, *Tropidocephala andunna*; 3, *Altekon marpessa*; 4, *Cemus punctatus*; 5, *Coronacella sinhalana*; 6, *Javesella forcipata*; 7, *Falcotoya citipes*; 8, *F. daluoensis*; 9–10, *F. shaluensis*; 11–12, *Latistria placita*. Figs. 13–14 are *Latistria eupompe* for comparison. All specimens are males except Figs. 2, 9, 12, 14.

because whitish sands conceal their concolorous bodies.

Specimens examined. [Ryukyus] 9♂ 2♀ (SF), Kurio beach, Yakushima Is., 21. VIII. 2013, S. Fujinuma; 4♂ 2♀ (SF), Tôro Riv., Hoshino, Ishigaki Is., 16. VII. 2011, S. Fujinuma; 2♂ 6♀ (SF), Haemida beach, Iriomote Is., 18. V. 2007, S. Fujinuma; 1♂ (SF), same data except 2. IX. 2012.

Falcotoya daluoensis Ding, 2006

[Japanese name: Munaguro-tategoto-unka]

(Figs. 10, 35)

Falcotoya daluoensis Ding, 2006, Faun. Sin. Ins., 45: 379

[Type locality: China (Yunnan: Daluo)].

This planthopper, so far known from China, is newly recorded from Iriomote Is. Body length: ♂ macropter, 2.6 mm. This species is distinguishable from Japanese congeners by the dark coloration especially in mesonotum, and the aedeagus angulately bent ventrad before apical shaft, the shaft slightly upcurved, and the uniformly rectangle-shaped parameres (without strong protrusion or widening). This species is dependent on a *Paspalum* grass (Poaceae) in China (Ding, 2006).

Specimens examined. [Ryukyus] 2♂ (SF), Yoshikera Riv., Takana, Iriomote Is., 3–6. IX. 2012, S. Fujinuma.

Falcotoya shaluensis Yang, 1989

[Japanese name: Sonareshiba-tategoto-unka]
(Figs. 8–9, 36)

Falcotoya shaluensis Yang, 1989, NSC Spec. Publ. (6): 114 [Type locality: Taiwan (Shalu)].

This planthopper, so far known from Taiwan, is newly recorded from the Ryukyus. This species is pale greyish brown with concolorous forewings having distinct dark granules on veins. This species is mostly macropterous in males while brachypterous in females. Body length (mean): ♂ macropter, 2.3–2.7 mm (2.5 mm); ♀ brachypter, 2.0–2.3 mm (2.1 mm). Comparing with Japanese congeners, female brachypterous form (Fig. 9) has a slenderer abdomen. This species is commonly found on the host plant *Sporobolus virginicus* (L.) (Poaceae) growing in intertidal zone.

Specimens examined. [Ryukyus] 3♂ 2♀ (SF), Ôura, Nago, Okinawa Is., 2. V. 2013, S. Fujinuma; 1♂ 1♀ (TUA), Maehara, Ginoza, Okinawa Is., 20. X. 2015, M. Hayashi; 5♂ 2♀ (TUA), Cape Higashihenna-zaki, Miyako Is., 13. XII. 1992, T. Oka; 2♂ (SF), Shiraho beach, Ishigaki Is., 9. IX. 2012, S. Fujinuma; 32♂ 15♀ (TUA), Nakasuji, Ishigaki Is., 22. XI. 2014, M. Hayashi; 1♂ 1♀ (SF), Funaura, Iriomote Is., 3–7. IX. 2012, S. Fujinuma; 6♂ 3♀ (SF), Honera Riv., Takana, Iriomote Is., 5–6. IX. 2012, S. Fujinuma; 4♂ 7♀ (TUA), Kubura-bari, Yonaguni Is., 10. VII. 2013, M. Hayashi.

Javesella forcipata (Boheman, 1847)

[Japanese name: Daisetsu-kita-unka]
(Figs. 6, 37)

Delphax forcipata Boheman, 1847, Handl. Kongl. Svensk. Vet. Akad., 1847: 57 [Type locality: Sweden, Estonia].
Liburnia forcipata: Scott, 1870, Entomol. Mon. Mag., 7: 27.
Weidnerianella forcipata: Wagner, 1963, Mit. Hamburg. zool. Mus. Inst., 60: 176.
Javesella forcipata: Wagner, 1966, Mit. Hamburg. zool. Mus. und Inst., 63: 94.

This planthopper, widely known from Europe eastward to the Far East Russia, is newly recorded from an alpine belt of Hokkaido. This species is almost brown with darker face and abdomen. Body length: ♂ brachypter, 2.4 mm; ♀ brachypter, 2.9–3.0 mm. This species is similar to Japanese congeners especially in dark individuals, but distinguishable by the male genitalia: caudal margin of pygofer deeply incised in dorsal view, aedeagus slightly recurved with one short dorsal serration and two long ventral serrations. The macropterous form is not observed in Japan. In central Europe, this species is observed up to at least 1,500 m (Holzinger *et al*., 2003).

Specimens examined. [Hokkaido] 1♂ 3♀ (SEHU), Takanegahara to Hakuun-dake (1,700–2,200m alt.), Mt. Taisetsu, 28. VII. to 3. VIII. 1975, M. Suwa, T. Hattori, T. Sunose & A. Sakai.

Latistria placita (Van Duzee, 1937)

[Japanese name: Kurobane-sejiro-unka]
(Figs. 11–12, 39, 54–55)

Sogata placita Van Duzee, 1937, Proc. Calif. Acad. Sci., [4] 22: 120 [Type locality: Rapa Island, Austral Islands].
Sogatodes placitus: Fennah, 1971, Ins. Micronesia, 6: 574.
Latistria placitus: Asche & Wilson, 1990, Syst. Entomol., 15: 37.
Chloriona (*Sogatella*) *euterpe* Fennah, 1956, Ins. Micronesia, 6: 118 [Type locality: South Mariana Is (Pt. Oca, Guam)].

A part of specimens for Japanese record of *Latistria eupompe* (Kirkaldy, 1907) [Japanese name: Umibe-kurobane-sejiro-unka] is identified as this species due to reconfirmation of the specimens recorded by Hayashi (1997). This species is added to Japanese fauna for the first time. Macropterous males (Fig. 11) are black with a longitudinal white line on the dorsum and with the yellowish clypeus, legs and antennae, while brachypterous females (Fig. 12) are basically pale brown. Body length (mean): ♂ macropter, 2.9–3.0 mm (2.9 mm); ♀ macropter, 3.3 mm; brachypter, 2.6 mm. This species is very similar to *L. eupompe* (Figs. 13–14), but distinguishable by the male genitalia (Figs. 52–55): dorsal margin of armature of diaphragm entirely produced dorsally (produced just at corners of the margin in *L. eupompe*), parameres broadened at subapices (simply narrowing to the apices in *L. eupompe*). Above two species of *Latistria* were observed together in a northern part of Okinawa Is. However, this species was found in rather dry grasslands, while *L. eupompe* was found strictly on *Paspalum vaginatum* Swartz. (Poaceae) growing around estuaries. All examined males of these two species are macropterous while females are mostly brachypterous.

Specimens examined. [Amami-Oshima Is.] 1♂ (SEHU), Amami-Oshima, IV. 1954, T. Kumata, T. Oku & S. Takagi; [Okinawa Is.] 1♂ (TUA), Oku For. Rd., 13. XI. 1995, M. Hayashi; 2♂ 3♀ (SF), Benoki Dam, Kunigami, 3. V. 2010, S. Fujinuma; 1♂ 1♀ (SF), same data except 3. V. 2013; 1♂ (SF), Kawata, Higashi, 3–4. V. 2010 (light trap), S. Fujinuma; [Iriomote Is.] 1♂ (SF), Komi, 1–8. IX. 2012, S. Fujinuma; 1♂ (TUA), Shirahama, 13. V. 1993, M. Hayashi *et al*.; 4♂ (TUA), Funaura, 5. XI. 1985, M. Hayashi *et al*.; 1♂ (TUA), same data except 28. IX. 1995 (light trap), M. Hayashi *et al*.; 1♂ (SF), Nakano, 7. IX. 2012, S. Fujinuma; [Minami-Daito Is.] 2♂ (RUMF), Kyûtô, 15. IV. 2000, Ryukyu Univ. Coll.; 1♂ (TUA), Ikenosawa, 18. IV. 1998, M. Hayashi.

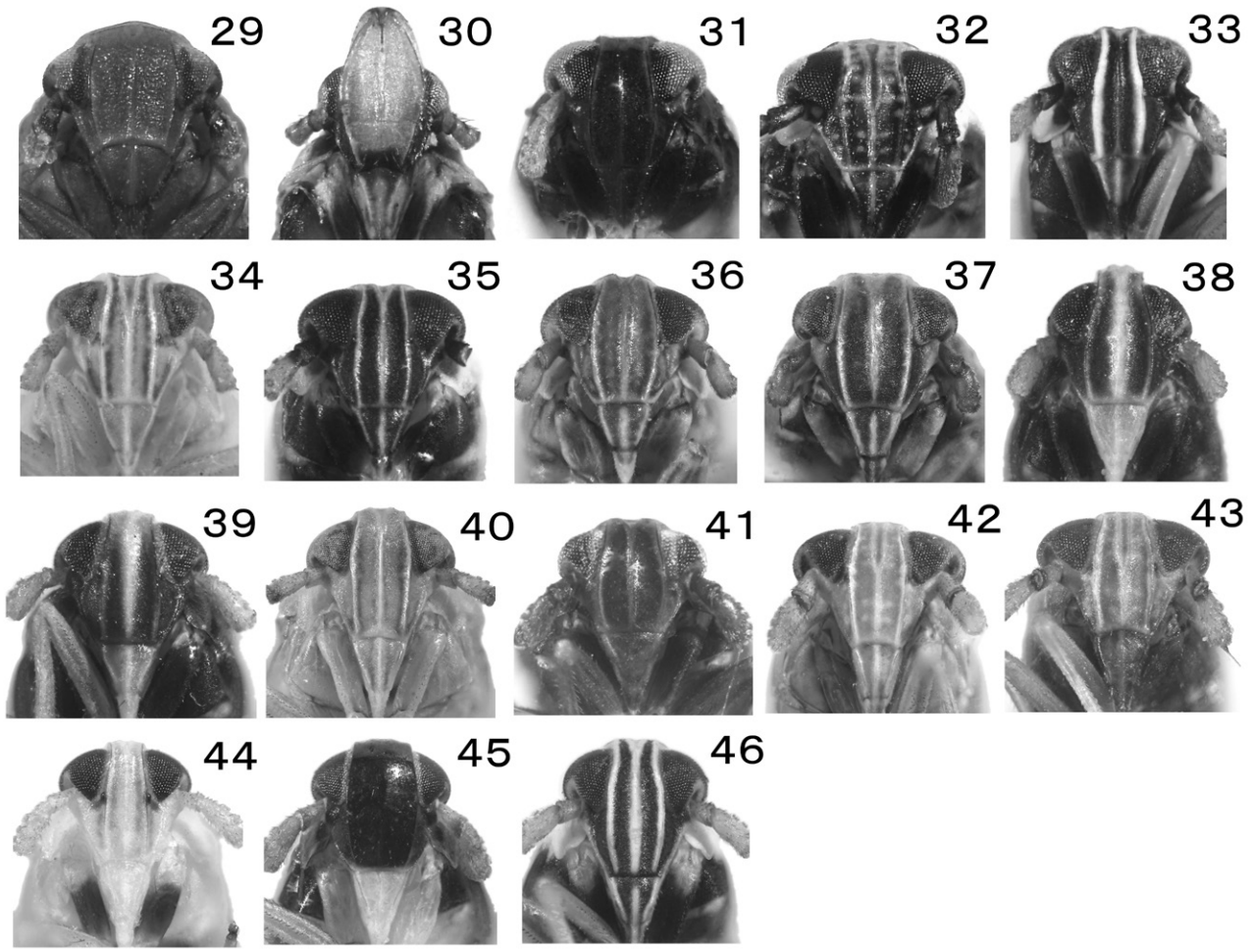
(Additional data of *L. eupompe*) [Yakushima Is.] 1♂ (SF),

Figs. 15–28. Delphacid planthoppers new to Japan. — 15–16, *Megadelphax bidentatus*; 17, *Nemetor nigrifactus*; 18–19, *Nycheuma nilotica*; 20–22, *N. dimorpha*; 23–24, *Sogatellana marginata*; 25–26, *Trichodelphax splendidus*; 27–28, *Unkanodes* (*Kwonianella*) *insularis*. All specimens are males except Figs. 16, 21, 23, 26, 27.

Harutahama, 22. VIII. 2013, S. Fujinuma; [Okinawa Is.] 22♂ 22♀ (SF), Aha Riv., Aha, Kunigami, 3. V. 2010, S. Fujinuma; 50♂ 28♀ (SF), Yabu Beach, Nago, 6. V. 2013, S. Fujinuma; 143♂ 132♀ (TUA), Maehara, Ginoza, 20. X. 2015, M. Hayashi.

Megadelphax bidentatus (Anufriev, 1970)
[Japanese name: Kitaguni-unka]
(Figs. 15–16, 40)

Ribautodelphax bidentatus Anufriev, 1970, Bull. Acad. Polon. Sci., [2] 18: 144 [Type locality: Soviet Maritime Territory,



Figs. 29–37, 39–46. Faces of delphacid planthoppers new to Japan. — 29, *Epeurysa distincta*; 30, *Tropidocephala andunna*; 31, *Altekon marpessa*; 32, *Cemus punctatus*; 33, *Coronacella sinhalana*; 34, *Javesella forcipata*; 35, *Falcotoya citipes*; 36, *F. daluoensis*; 37, *F. shaluensis*; 39, *Latistria placita*; 40, *Megadelphax bidentatus*; 41, *Nemetor nigrifactus*; 42, *Nycheuma nilotica*; 43, *N. dimorpha*; 44, *Sogatellana marginata*; 45, *Trichodelphax splendidus*; 46, *Unkanodes* (*Kwonianella*) *insularis*. Fig. 38 is *Latistria eupompe* for comparison.

Iman-Vvedenka].

Megadelphax bidentatus: Vilbaste, 1980, Homoptera Cicadinea of Tuva: 14.

This planthopper, so far known from Mongolia, the Far East Russia and Canada, is newly recorded from Hokkaido. Japanese individuals are orange-tinged pale brown except for the dark brown male genitalia and female genital scale, and the forewings are transparent without any distinct marking. Body length (mean): ♂ brachypter, 2.7–2.9 mm (2.7 mm); ♀ macropter, 4.8 mm; brachypter, 3.2–3.3 mm (3.2 mm). This species is similar to pale-colored *Javesella pellucida* (Fabricius, 1794), but distinguishable by the orange-tinged body and the aedeagus with arrowhead-shaped apex. Adults were found in grasslands surrounded by subarctic coniferous forests.

Specimens examined. [Hokkaido] 8♂ 18♀ (TUA), Tokachi-Mitsumata, Kami-shihoro, 24. VI. 1986, M. Hayashi.

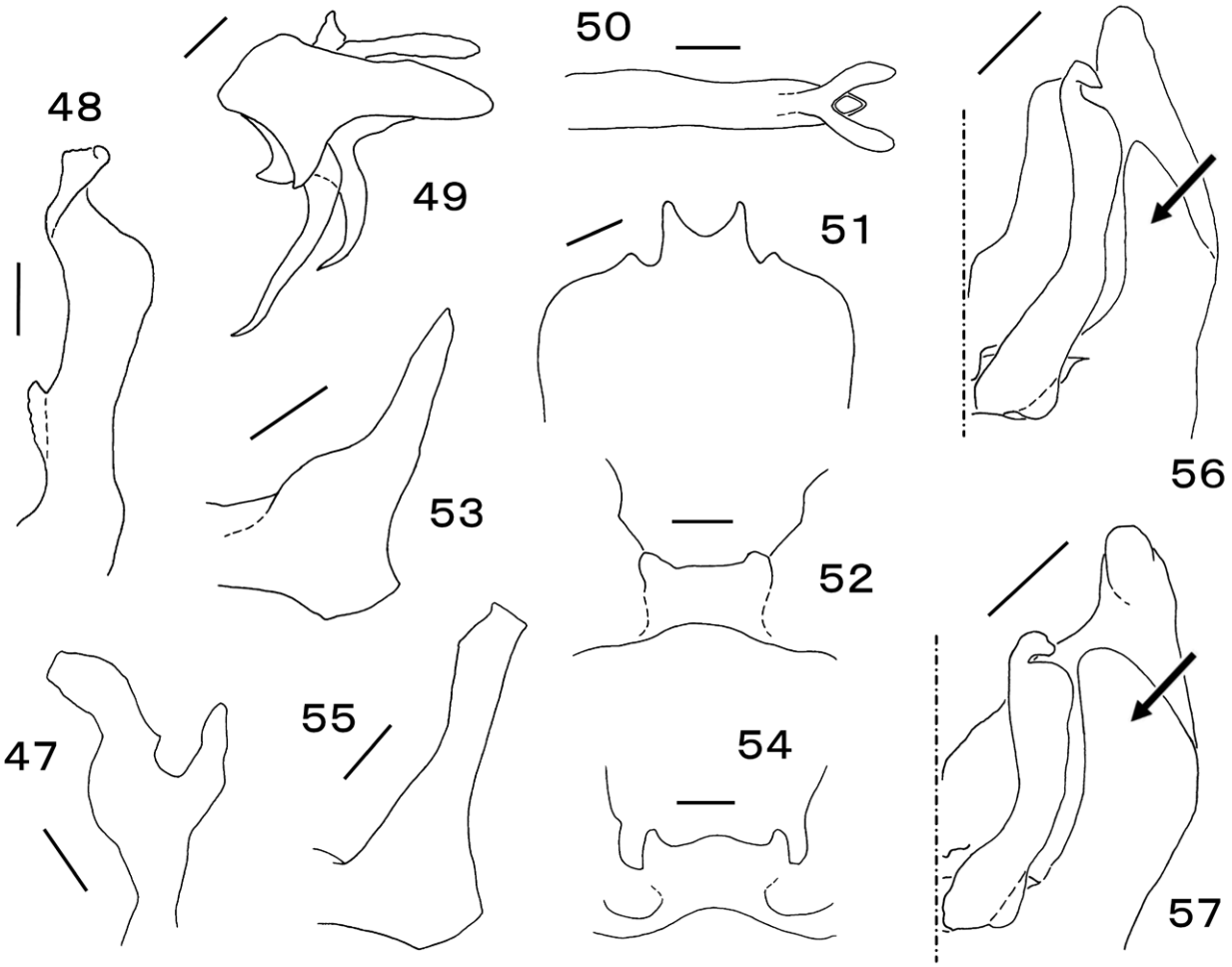
Nemetor nigrifactus Ding, 2006

[Japanese name: Chigozasa-kokuro-unka]

(Figs. 17, 41)

Nemetor nigrifactus Ding, 2006, Faun. Sin. Ins., 45: 604 [Type locality: China (Hainan)].

This planthopper, so far known from China, is newly recorded from Honshu and the southern Ryukyus. Brachypterous forewings are short and the abdomen is mostly exposed (Fig. 17). Body length (mean): ♂ brachypter, 1.2–1.4 mm (1.3 mm); ♀ brachypter, 1.5–1.7 mm (1.6 mm). This species is similar to *Diodelphax obstipus* Yang, 1989 in the dark coloration and small body-size, but distinguishable by the widest position of male pygofer in caudal angle, this species at lower half while the latter at upper half. This species feeds on *Isachne globosa* (Thunb.) (Poaceae) and was found sympatrically with *D. obstipus* on Iriomote Is. The record of *Altekon nigriella* (Ishihara, 1954) recently transferd from *Rhombotoya* to *Altekon* (Fujinuma, 2016) from Mie Prefecture is probably identical to this species because recorded specimens (Kisimoto, 1995) were not collected from *Oplismenus* sp. (Poaceae) (regarded as a host of *A. nigriella*) but *I. globosa*.



Figs. 47–51, 54–56. Male genitalia of delphacid planthoppers new to Japan. — 47, *Epeurysa distincta*; 48–49, *Tropidocephala andunna*; 50, *Altekon marpessa*; 51, *Cemus punctatus*; 54–55, *Latistria placita*; 56, *Unkanodes* (*Kwonianella*) *insularis*. Figs. 52–53 & 57 are *Latistria eupompe* and *U*. (*K*.) *albifascia*, respectively for comparison. Angles: 51, pygofer, ventral view; 56–57, right half of pygofer, caudal views, arrows indicate lateral white processes of pygofer; 52, 54, diaphragm of pygofer, ditto; 50, aedeagus, ventral view; 48, right paramere, caudal view; 47, left paramere, ditto; 53, 55, ditto, left lateral views; 49, anal tube, ditto. Scales: 0.1 mm (48, 50, 52–55) and 0.2 mm (49, 51, 56–57).

Specimens examined. [Honshu] 2♂ 2♀ (SF), Mariyatsu, Kisarazu, Chiba Pref., 3. VII. 2011, S. Fujinuma; 2♂ (SF), Kumase Riv., Tônohama, Nanao, Ishikawa Pref., 13. IX. 2010, S. Fujinuma; 3♂ (SF), Komono (near Ôbaneen Sta.), Mie Pref., 31. VII. 2010, S. Fujinuma; [Ryukyus] 2♂ 1♀ (SF), Kabira, Ishigaki Is., 15. VII. 2011, S. Fujinuma; 9♂ 5♀ (SF), Komi, Iriomote Is., 1–8. IX. 2012, S. Fujinuma.

Nycheuma nilotica Linnavuori, 1973

[Japanese name: Neguro-mitsutoge-unka]

(Figs. 18–19, 42)

Nycheuma (*Dicranotropis*) *idas nilotica* Linnavuori, 1973, Notul. Entomol. 53 (3): 105 [Type locality: Sudan (Blue Nile, Singa, Damazin)].

Nycheuma nilotica: Asche, 1988, Revue fr. Entomol. (N. S.), 10: 197.

Nycheuma coctum Yang, 1989, NSC Spec. Publ., (6): 98 [Type locality: Taiwan (Pingtung)].

This planthopper, widely known from China, Australia to Sudan, is newly recorded from the Ogasawara Isles and the Ryukyus. This species is basically brown with a dorsal whitish area having two orange-tinged stripes along the midline (Fig. 18). Body length (mean) ♂ macropter, 3.5–3.6 mm (3.5 mm); brachypter, 2.0 mm (2.0 mm); ♀ macropter, 3.8 mm (3.8 mm); brachypter, 2.7 mm (2.7 mm). This species is similar to *Nycheuma anderida* (Kirkaldy, 1907) formerly recorded as *N. cognatum* (Muir, 1917) in the Ryukyus, but distinguishable by the uniform length of three processes on the ventromedial pygofer (with a distinctly longer median process in the latter). This species is infrequently observed on Okinawa Is. while rather abundant on Iriomote Is.

Specimens examined. [Ogasawara Isles] 14♂ 5♀ (TUA), Kominato, Chichijima Is., 9. XI. 1997, K. Higuchi; 4♂ 2♀ (TUA), Minami-fukurozawa, Chichijima Is., 15. XI. 1997, K. Higuchi; [Ryukyus] 1♂ (RUMF), Kita-Daito Is., 21. VIII. 1992, Ryukyu Univ. Coll.; 1♂ 1♀ (SF), Mt. Nago, Nago, Okinawa Is., 5. V. 2013, S. Fujinuma; 1♂ 1♀ (TUA), Maehara, Ginoza, Okinawa Is., 20. X. 2015, M. Hayashi; 3♂

6♀ (TUA), Akaishi, Ishigaki Is., 26. XI. 2006, M. Hayashi; 2♂ 2♀ (TUA), Omoto For. Rd., Ishigaki Is., 25. XI. 2006 (light trap), M. Hayashi; 1♂ (TUA), Nagura, Ishigaki Is., 23. XI. 2014, M. Hayashi; 7♂ 4♀ (TUA), Mt. Yarabu-dake, Ishigaki Is., 26. XI. 2006 (light trap) M. Hayashi; 18♂ 32♀ (SF), Komi, Iriomote Is., 1–8. IX. 2012, S. Fujinuma; 2♂ 2♀ (SF), Funaura, Iriomote Is., 3–7. IX. 2012, S. Fujinuma; 4♂ 1♀ (TUA), same locality, 28. IX. 1995 (light trap), M. Hayashi *et al*.; 7♂ 15♀ (TUA), same data except 22. XI. 2006 (light trap); 1♂ 2♀ (SF), Yoshikera Riv., Takana, Iriomote Is., 3–6. IX. 2012, S. Fujinuma.

Nycheuma dimorpha (Matsumura, 1910)

[Japanese name: Osuguro-mitsutoge-unka]
(Figs. 20–22, 43)

Dicranotropis dimorpha Matsumura, 1910, J. Col. Sci. Imp. Univ. Tokyo, 27: 37 [Type locality: Italy (Palermo)].
Cemus dimorpha: Nast, 1984, Ann. Zool. Warsz., 37: 391.
Nycheuma dimorpha: Asche, 1988, Revue fr. Entomol. (N. S.), 10: 195.
Dicranotropis capensis Muir, 1926 Ann. Mag. nat. Hist., (9) 17: 28 [Type locality: South Africa (Mossel Bay, Cape Province)].
Dicranotropis ibadanensis Muir, 1920, Bull. entomol. Res., 10: 141 [Type locality: Nigeria (Oloke-Meji, Ibadan)].
Dicranotropis idas Fennah, 1958, Bull. Inst. fr. Afr. noire, [A] 20: 479 [Type locality: Côte d'Ivoire (N' Zida)].

This planthopper, widely known from China to South Africa, is newly recorded from the Ryukyus. The brachypterous form shows distinct sexual dimorphism in the forewing coloration: shiny black in males and almost transparent in females (Figs. 21–22). Body length (mean): ♂ macropter, 3.2–3.6 mm (3.3 mm); brachypter, 1.6–1.7 mm (1.7 mm); ♀ macropter, 3.6 mm; brachypter, 2.1 mm. The macropterous form (Fig. 20) is similar to that of *Nycheuma nilotica* Linnavuori, 1973, but distinguishable by the relatively slender forewings with distinct dark markings along each apical part of ScP and 1st branch of CuA, the dark male sternum, and the male genitalia with a distinctly shorter median process on ventromedial pygofer. Brachypterous specimens were collected on a poaceous grass, more than 50 cm high, under coastal forests on Ishigaki Is.

Specimens examined. [Ryukyus] 1♂ (SF), Akakina, Tatsugo, Amami-Oshima Is., 11. X. 2015, T. Mita; 2♂ (SF), Todoroki Riv., Moriyama, Ishigaki Is., 16. VII. 2011, S. Fujinuma; 4♂ 2♀ (SF), same data except 9. IX. 2012, S. Fujinuma; 4♂ 7♀ (TUA), same locality, 25. III. 2014, M. Hayashi; 3♂ 1♀ (TUA), Omoto For. Rd., Ishigaki Is., 25. XI. 2006 (light trap), M. Hayashi; 5♂ 6♀ (TUA), Mt. Yarabu-dake, Ishigaki Is., 26. XI. 2006 (light trap), M. Hayashi; 2♂ (SF), Toyohara, Iriomote Is., 17. V. 2007 (light trap), S. Fujinuma; 5♂ (SF), Komi, Iriomote Is., 1–8. IX. 2012 (light trap), S. Fujinuma.

Sogatellana marginata Kuoh, 1980

[Japanese name: Ishigaki-hime-unka]
(Figs. 23–24, 44)

Sogatellana marginata Kuoh, 1980, Acta Zootaxon. Sin., 5: 169 [Type locality: China (Guangdong)].

This planthopper, so far known from China, is newly recorded in the southern Ryukyus. Body length (mean): ♂ macropter, 3.2–3.5 mm (3.3 mm); ♀ macropter, 3.8–3.9 mm (3.8 mm); brachypter, 2.7–2.9 mm (2.8 mm). This species is similar to *Himeunka tateyamaella* (Matsumura, 1935) and *Sogatella kolophon* (Kirkaldy, 1907), but distinguishable by having black markings on pro- and mesocoxae in males. The morphological similarity between *Sogatellana* Kuoh, 1980 and *Himeunka* Matsumura et Ishihara, 1945 is discussed by Asche & Wilson (1990). These genera share a distinctive character, namely two pairs of spinose processes on anal tube. However, it is desirable to reconfirm their relationships, because the other morphological differences are apparently poor. Adults were collected on a poaceous grass, about 50 cm high, growing along a riverside path.

Specimens examined. [Ryukyus] 7♂ 6♀ (SF), Sokohara Riv. (near Sokohara Dam), Ôhama, Ishigaki Is., 9. IX. 2012, S. Fujinuma.

Trichodelphax splendidus Vilbaste, 1968

[Japanese name: Osuguro-kubire-unka]
(Figs. 25-26, 45)

Trichodelphax splendidus Vilbaste, 1968, Über die Zikadenfauna des Primorje Gebietes: 34 [Type locality: Primorsky Krai].

This planthopper, so far known from the Far East Russia and Mongolia, is newly recorded from Nagano Pref., Honshu. The brachypterous form has a slender body and is sexually dimorphic in coloration: shiny black body with yellow antennae and legs, and pale brown to black forewings in males, while brown body with concolorous forewings in females. Body length (mean): ♂ brachypter, 2.4–2.6 mm (2.5 mm); ♀ brachypter, 2.9–3.2 mm (3.0 mm). This species is similar to *Trichodelphax lukjanovitshi* (Kusnezov, 1929) recently redescribed and recorded from northeast China (Qin *et al*., 2011), but distinguishable by the aedeagus with two larger spinose processes before gonopore. This species was observed in wet grasslands surrounded by Japanese oak, *Quercus crispula* Blume (Fagaceae) forests. Many adults were observed in mid-June, but they completely disappeared in early July.

Specimens examined. [Honshu] 28♂ 53♀ (SF), Azusayama (1,400 m alt.), Kawakami, Nagano Pref., 13. VI. 2015, S. Fujinuma.

Unkanodes* (*Kwonianella*) *insularis Anufriev, 1988

[Japanese name: Kita-shiroobi-unka]
(Figs. 27–28, 46, 56)

Unkanodes (*Kwonianella*) *insularis* Anufriev, 1988, Key to the identifications of Insects of the Soviet Far East 2: 409. [Type locality: S. Kur., Kunashir, Alekhino].

This planthopper, so far known from the South Kuril Islands, is newly recorded from Hokkaido and Honshu. Body length (mean): ♂ brachypter, 2.0–2.1 mm (2.0 mm); ♀ macropter, 3.5–3.6 mm (3.5 mm); brachypter, 2.4–2.6 mm (2.5 mm). This species is very similar to *U*. (*K*.) *albifascia* (Matsumura, 1900), but distinguishable by the slender lateral white processes of pygofer (Figs. 56–57). *Unkanodes* (*K*.) *albifascia* from Hokkaido formerly reported as a potential vector of Northern cereal mosaic virus (NCMV) to wheat (Ishii, 1966) is really identical to this species due to investigation of the material for the report. According to the report, nymphs were collected from *Poa pratensis* L. and emerged on early May at Tokachi Agricultural Experiment Station, Hokkaido. This species tends to dwell in colder districts than *U*. (*K*.) *albifascia*. Along Tama-gawa River in the Kanto plain, their habitable areas are isolated from each other probably by altitude: this species around 1,200 m alt. while the latter lower than 600 m alt.

Specimens examined. [Hokkaido] 1♂ (SF), Shôtoshibetsu, Rikubetsu, 28. VII. 2012, S. Fujinuma; 3♂ 1♀ (SF), Horoka, Kami-shihoro, 28. VI. 2013, S. Fujinuma; 1♂ (TUA), Mitsumata, Kami-shihoro, 24. VIII. 1995, M. Hayashi *et al*.; 1♂ 2♀ (EUMJ), Tokachi Agricultural Experiment Station, Memuro, 11. IV. 1964, K. Sato; [Honshu] 1♂ 1♀ (SF), Kôtoku, Nikko, Tochigi Pref., 7. VIII. 2011, S. Fujinuma; 1♀ (SF), Takamine (2,000 m alt.), Kambara, Gunma Pref., 11. VI. 2016, S. Fujinuma; 1♂ 1♀ (TUA), Irikawa Valley, Oku-Chichibu Mts., Saitama Pref., 15. VIII. 2001, M. Hayashi *et al*.; 1♂ 1♀ (SF), Obi, Sutama, Yamanashi Pref., 7. VIII. 2008, S. Fujinuma; 1♂ 2♀ (TUA), Harayama, Hara, Nagano Pref., 8. IX. 2007, M. Hayashi *et al*.; 1♂ (SF), Norikura Highlands, Azumi, Matsumoto, Nagano Pref., 14. IX. 2010, S. Fujinuma; 2♀ (SF), Kyôwa (1,000 m alt.), Saku, Nagano Pref., 11. VI. 2016, S. Fujinuma; 1♂ (SF), Shinhotaka Hot Spring, Takayama, Gifu Pref., 14. IX. 2010, S. Fujinuma; 1♂ 1♀ (SF), Nishibora, Takasu, Gujô, Gifu Pref., 11. IX. 2010, S. Fujinuma; 1♂ (TUA), Sukenobe Dam, Ôyama, Toyama Pref., 26. IX. 2002, M. Hayashi *et al*.

References

Asche, M. and M. R. Wilson., 1990. The delphacid genus *Sogatella* and related groups: a revision with special reference to rice-associated species (Homoptera: Fulgoroidea). *Systematic Entomology*, **15**: 1-42.

Ding, J., 2006. Homoptera: Delphacidae. Fauna Sinica, Insecta, 45: 1–776, 20 pls.

Fennah, R. G., 1969. Fulgoroidea (Homoptera) from New Caledonia and the Loyalty Islands. *Pacific Insects Monograph*, **21**: 1–116.

Fujinuma, S., 2016. Taxonomic notes on Japanese planthoppers (Auchenorrhyncha, Delphacidae), *Rostria* (59): 7–18. (In Japanese with English summary.)

Hayashi, M., 1997. New records of leafhoppers and planthoppers (Homoptera, Auchenorrhyncha) from Japan. *Japanese Journal of Systematic Entomology*, **3**: 281–288.

Hayashi, M., 1998. Heteroptera and Homoptera-Auchenorrhyncha (Rhynchota) from Saitama Prefecture, Honshu, Japan. Insects of Saitama Japan I, Saitama Konchu Danwakai: 147–234. (In Japanese.)

Holzinger, W. E., I. Kammerlander, and H. Nickel, 2003. Fulgoromorpha, Cicadomorpha excluding Cicadellidae. Volume 1. The Auchenorrhyncha of Central Europe. Brill Academic Publishing, Leiden, Netherlands: 673 pp.

Ishii, T., 1966. On the distribution and the wing form of *Delphacodes albifascia* (Matsumura) and its role for the transmission of Northern cereal mosaic. *Research Bulletin of the Hokkaido National Agricultural Experiment Station*, (89): 49–54. (In Japanese with English summary.)

Kisimoto, R., 1995. [Some planthoppers discovered in Mie Prefecture.] *Hirakura*, **39** (4): 51–60. (In Japanese.)

Qin, D., X. Chen, and Y. Lin., 2011. New record of the genus *Trichodelphax* Vilbaste from China with redescription of *T. lukjanovitshi* (Hemiptera, Fulgoroidea, Delphacidae). *Acta Zootaxonomica Sinica* **36**: 202–204.

[Received: October 8, 2016; accepted: November 17, 2016]