

**Two New Species of *Trioza* from Kasugayama, Nara Prefecture  
(Homoptera: Psyllidae)\***

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春日山原生林から発見されたトガリキジラミ属の二新種

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1968年、1973年の2年間にわたって、奈良県当局の許可を得て春日山原生林の昆虫相調査を行った際、トガリキジラミ属の二新種が発見された。1種はクロバイに寄生し、他の1種はシロバイに寄生するもので、極めて近似の種である。既知種の中では、クロトガリキジラミおよびミドリトガリキジラミに、形態的・生態的に似ており、同一種群に属するものと思われる。クロバイの方の種を *Trioza esakii* (和名、クロバイトガリキジラミ—新称) として、シロバイの方の種を *T. kasugaensis* (和名、シロバイトガリキジラミ—新称) として本文中で記載した。前者は春日山以外にも、愛知県・福岡県・石垣島に分布していることが確認されたが、後者は春日山以外からは知られていない。

During the entomological survey of the Kasugayama virgin forest, Nara Prefecture in 1968 and 1973 with permission of the prefectural authorities, two rather remarkable new species of the jumping plant-lice belonging to the genus *Trioza* were found. One of them feeds on *Symplocos prunifolia* and the other feeds on *S. lancifolia*, and they are close relatives each other. The former is newly described as *Trioza esakii* and the latter as *T. kasugaensis* in the present paper. Among the known species of the genus, they have a strong resemblance to *T. magna* and *T. nigra* both in external features and in host association. It is supposed that all of those species are included in the same species group. *Trioza kasugaensis* is known only from Kasugayama so far, but *T. esakii* is known, in addition to Kasugayama, from Aichi Prefecture, Fukuoka Prefecture and Ishigaki Island of the Yaeyama Group. Examining the collection of Kyushu University, the author learned that the late Prof. T. ESAKI and his colleague collected numerous specimens of the latter species at Korasan, Kurume City in 1935 probably on the host tree. The specific name is, therefore, dedicated to him.

Both species overwinter in the adult stage and oviposit on shoots of the host plants in early spring. Nymphs are distinct gall formers, making a leaf roll gall in *T. esakii* and a leaf fold gall in *T. kasugaensis*. Adults emerge from the middle of May in *T. esakii* and half to one month later in *T. kasugaensis*. The exact descriptions of their biology and nymphal stages will be given in the future publication.

The type specimens and the large part of type series treated in this paper are kept at Osaka Museum of Natural History, and part of them will be deposited at Kyushu University and some other domestic and foreign museums.

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*Trioxa esakii* sp. nov.

(Fig. 1: E<sub>1</sub>—E<sub>8</sub>)

Color: General color yellowish to light green, or straw-colored to light brown and darker in the overwintered forms. Antenna (Fig. 1—E<sub>3</sub>) yellow to light brown, with two apical segments dark brown or black. Eyes brown or dark gray; ocelli orange. Forewing transparent, with veins light green to light brown, R and R<sub>1</sub> more or less dark brownish. Abdomen greenish, with rather conspicuous brown maculations on dorso-lateral surfaces of the 5th and the 6th segments.

Structure: Head (Fig. 1—E<sub>4</sub>) small, nearly vertical, wider than thorax; vertex half as long as wide, slightly deflexed, with deep impressions posteriorly on each side of median line, elevated near lateral ocelli, with posterior margin incised, hairy throughout; genal cones long, as long as vertex or slightly longer, divergent, slightly below plane of vertex, with long pubescence; eyes small, not hemispherical; clypeus strongly produced forward roundedly. Antenna (Fig. 1—E<sub>3</sub>) long, slender, nearly 1.8 times as long as width of head, with 1 long and 1 short apical setae, each segment with 2 or 3 long hairs, relative length of each segment as 3 : 2 : 11 : 6 : 5 : 6 : 5 : 4.5 : 3 : 2.

Thorax narrow, strongly arched, with conspicuous pubescence; pronotum vertical, much narrower than head, with long pubescence; praescutum strongly convex, anterior part produced cephalad, thus anterior margin vertical in lateral aspect. Forewing (Fig. 1—E<sub>1</sub>) long and elongate, nearly 3.4 times as long as wide, angulate at apex, veins with small setae biserially; Rs very long, bisinuate, apical half more or less parallel with C+Sc; M<sub>1+2</sub> arched, 2 times as long as M<sub>3+4</sub>; Cu<sub>1</sub> well arched; medial cell small; cubital cell large, somewhat quadrilateral; clavus ended far ahead of apex of Cu<sub>2</sub>. Hind wing (Fig. 1—E<sub>2</sub>) short, about 1/2 as long as forewing, 3 times as long as wide, narrowly rounded at apex, venation triozone, but bases of R and Cu obsolete, cubital cell flat, 3 times as wide as high. Legs long and massive, hairy; posterior tibia (Fig. 1—E<sub>7</sub>, E<sub>8</sub>) with 2 or 3 basal spurs, with 1 outer and 3 inner apical spurs; proximal segment of posterior tarsi without apical spurs; meracanthus long, projected caudad, never ventrad, subacute at apex. Abdomen (excl. genital segments) moderately long, nearly 2/3 as long as thorax, bare dorsally, with dense pubescence ventrally.

Male genitalia (Fig. 1—E<sub>5</sub>) small, 1/4 to 1/3 as long as the rest of abdomen; proctiger short and moderately stout, about 1.4 times as long as forceps, caudal margin produced caudad in lateral aspect, apex rugose and sclerotized, with sparse pubescence apically and along caudal margin; forceps stout, nearly parallel-margined, bent caudad apically, with strong bristles

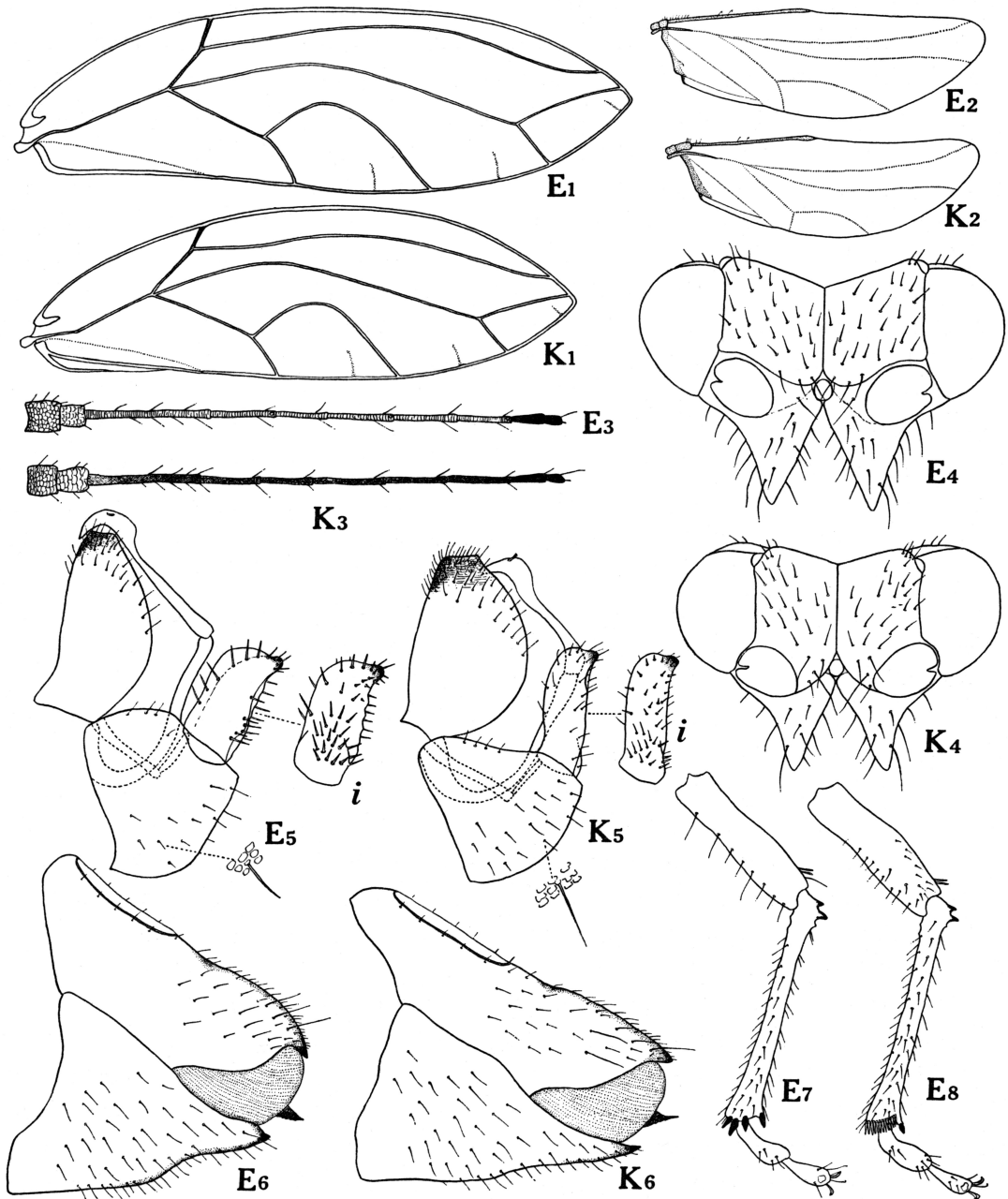


Fig. 1. *E*, *Trioza esakii* sp. nov. (E<sub>1</sub>, Forewing, ♂; E<sub>2</sub>, Hind wing, ♂; E<sub>3</sub>, Antenna, ♀; E<sub>4</sub>, Head, frontal view, ♀; E<sub>5</sub>, Male genitalia (i, Inner face of forceps); E<sub>6</sub>, Female genitalia; E<sub>7</sub>, Inner side of posterior leg, ♂; E<sub>8</sub>, Outer side of posterior leg, ♂). *K*, *Trioza kasugaensis* sp. nov. (K<sub>1</sub>, Forewing, ♂; K<sub>2</sub>, Hind wing, ♂; K<sub>3</sub>, Antenna, ♀; K<sub>4</sub>, Head, frontal view, ♀; K<sub>5</sub>, Male genitalia (i, Inner face of forceps); K<sub>6</sub>, Female genitalia).

along anterior and posterior margins, with strong setae on inner surface (Fig. 1-E<sub>5</sub>-i) mostly in basal half and near apices which are sclerotized and blunt; aedeagus long, apex of the second segment sickle-shaped; subgenital plate short and high, with sparse hairs ventrally and along dorsal margin. Female genitalia (Fig. 1-E<sub>6</sub>) short, 1/3 as long as the rest of abdomen; dorsal valve short, slightly longer than ventral valve, but shorter than inner valve, in lateral aspect somewhat hood-shaped and overhanging, acute at apex, with dorsal margin sinuate, pubescent in apical half; ventral valve in lateral aspect stout basally, with ventral margin produced outward near midpoint, apical portion narrow, acute at apex, pubescent nearly throughout.

Length of body ♂ 1.9–2.3 mm, ♀ 2.1–2.5 mm (to tip of folded wings ♂ 4.2–4.6 mm, ♀ 4.5–4.8 mm); length of forewing ♂ 3.6–4.0 mm, ♀ 3.7–4.1 mm; width of forewing ♂ 1.0–1.1 mm, ♀ 1.1–1.2 mm; length of antenna ♂ 1.0–1.1 mm, ♀ 1.1–1.2 mm.

Holotype (♂): Onkasayama, Kasugayama, Nara City, 9. vi. 1968, on *Symplocos prunifolia*, Y. Miyatake leg.

Paratopotypes: 24♂15♀ (2♂2♀ on slides), the same data as the holotype. 4♂7♀ (1♂1♀ on slides), 18. vii. 1968; 2♀ (hybernated individuals), 26. iv. 1973; 12♂8♀ (teneral), 18. v. 1973; 1♂4♀, 3. x. 1973; Onkasayama, Kasugayama, Nara City, on *S. prunifolia*, Y. Miyatake leg. 3♂2♀, Ohsugi, Kasugayama, Nara City, 24. vi. 1968, on *S. prunifolia*, I. Hiura leg. 1♀, Damu—Ohgami-jinjya, Kasugayama, 6. ix. 1968, Y. Miyatake leg. 2♂1♀, 9. vi. 1968; 2♂1♀, 21. vi. 1973; Kaedeno-taki—Onkasa-tôge, Kasugayama, on *S. prunifolia*, Y. Miyatake leg. 19♂22♀, 21. vi. 1973; 1♂4♀, 3. x. 1973; SE ridge of Mt. Kasuga (s. str.), Kasugayama, on *S. prunifolia*, Y. Miyatake leg. 5♂2♀, Goshiki-momiji—Myôkengû, Kasugayama, 2. vii. 1973, on *S. prunifolia*, Y. Miyatake leg.

Paratypes: 9♂8♀, 29. vi. 1974, on *Castanopsis cuspidata*; 2♂8♀, 10. viii. 1974; Jokoji, Seto, Aichi Pref., Y. Hori leg. 1♂, Kôrasan, Kurume City, Fukuoka Pref., 3. xi. 1931, K. Yasumatsu leg. 12♂20♀, Kôrasan, Kurume City, Fukuoka Pref., 26. v. 1935, Esaki, Yasumatsu, Kawahara, Nomura, Hashimoto & Fujino leg. 2♂1♀, Kôrasan, Kurume City, Fukuoka Pref., 7. viii. 1951, S. Miyamoto leg. 1♂ (teneral), Omoto-dake, Ishigaki Is., 16. iii. 1964, on *S. prunifolia*, Y. Miyatake leg.

Distribution: Japan (Nara Pref., Aichi Pref., Fukuoka Pref., Ishigaki Is.).

Host plant: "Kurobai"—*Symplocos prunifolia* SIEB. et ZUCC. [Symplocaceae].

Differs from *nigra* KUWAYAMA in having a much more elongate forewing with Rs and M<sub>1+2</sub> ended closer to apex of forewing and more elongate medial cell, male forceps which are stouter and not constricted near apex, and a overhanging dorsal valve of female genitalia. Differs from *magna* KUWAYAMA in being distinctly smaller, in having a more elongate forewing with Rs ended closer to apex of M<sub>1+2</sub> and comparatively shorter M<sub>3+4</sub>, a shorter antenna which is 1.8 times as long as width of head (2.2 times in *magna*), and female genitalia which is short and has a overhanging dorsal valve.

***Trioza kasugaensis* sp. nov.**(Fig. 1: K<sub>1</sub>—K<sub>6</sub>)

**Color:** General color light green to green, light brownish with darker markings in the overwintered forms. Antenna dark brown to black, with 2 basal segments yellow and 2 apical segments always black. Eyes brown to dark brown; ocelli yellow or orange. Forewing transparent, with veins light green, R<sub>1</sub> and apical half of R-stem dark brown. Abdomen dark green; tips of proctiger and forceps of male genitalia dark brown to black.

**Structure:** Head (Fig. 1—K<sub>4</sub>) wider than thorax, vertical; vertex slightly deflexed, half as long as wide, deeply depressed posteriorly on each side of median line, with posterior margin incised, conspicuously rounded anteriorly, elevated posteriorly near lateral ocelli, pubescent; genal cones long, 1.3 times as long as vertex, distinctly divergent, acute at apex, with long hairs sparsely. Antenna (Fig. 1—K<sub>3</sub>) long and slender, 1.9 times as long as width of head, with 1 long and 1 short apical setae, each segment with a pair of long hairs near apex, with sensoria at apices of IV, VI and VIII, relative length of each antennal segment as 2.5: 2: 10: 6: 5: 6: 5: 3: 2.

Thorax narrow, strongly arched, conspicuously pubescent; pronotum much narrower than head, with long pubescence; praescutum strongly arched, produced cephalad beyond pronotum; mesoscutum rather flat dorsally. Forewing (Fig. 1—K<sub>1</sub>) quite long and elongate, about 3.4 times as long as wide, angulate at apex; Rs quite long, sinuate, ended close to apex of forewing; R<sub>1</sub> short and stout; M<sub>1+2</sub> long, 2.1 times as long as M<sub>3+4</sub>, reaching almost apex of forewing; medial cell small and elongate; cubital cell large, somewhat quadrilateral, 1.5 times as wide as high. Hind wing (Fig. 1—K<sub>2</sub>) short, narrow, nearly 1/2 as long as forewing, 3 times as long as wide, narrowly rounded at apex, venation triozone, but R and Cu obsolete basally, R ended near apex of hind wing. Legs long, hairy; posterior tibia with 2 or 3 basal spurs, with 1 outer and 3 inner apical spurs; proximal segment of posterior tarsi without apical spurs; meracanthus long, slender, projected caudad, subacute at apex. Abdomen (excl. genital segments) 1/2 as long as head and thorax combined, bare dorsally and densely pubescent ventrally.

Male genitalia (Fig. 1—K<sub>5</sub>) moderate in size, nearly half as long as the rest of abdomen; proctiger in lateral view stout, about 1.2 times as long as forceps, with anterior margin rather straight and caudal margin strongly produced caudad, narrow and rugose apically, truncate at apex, with sparse pubescence along caudal margin and apically; forceps in lateral view stout and more or less sinuate, with both anterior and posterior margins almost parallel, apically curved caudad, terminating in a blunt point at apex, with setae along anterior and posterior margins, inner surface (Fig. 1—K<sub>5</sub>) with strong setae nearly throughout; aedeagus long, apical segment shorter than basal segment, with apical portion transformed as sickle-shaped, apex acute; subgenital plate subtriangular in lateral view, with ventral margin produced ventro-caudad, pubescent at dorsal margin and in ventral half. Female genitalia (Fig. 1—K<sub>6</sub>)

large, about 4/5 as long as the rest of abdomen; dorsal valve slightly longer than ventral valve, shorter than inner valve, in lateral aspect with dorsal margin descending, slightly sinuate, apical portion attenuate, with apex subacute, pubescent in apical half; ventral valve in lateral aspect stout in basal half and narrow in apical half, with ventral margin produced outward medially, acute at apex, pubescent nearly throughout.

Length of body ♂ 1.9–2.0 mm, ♀ 2.1–2.3 mm (to tip of folded wings ♂ 4.1–4.3 mm, ♀ 4.2–4.6 mm); length of forewing ♂ 3.5–3.6 mm, ♀ 3.7–4.0 mm; width of forewing ♂ 1.0–1.1 mm, ♀ 1.1–1.3 mm; length of antenna ♂ 1.0–1.1 mm, ♀ 1.0–1.1 mm.

Holotype (♂): Myôkengû-michi, Kasugayama, Nara City, 9. vi. 1968, on *Symplocos lancifolia*, Y. Miyatake leg.

Paratopotypes: 44♂47♀ (1♂1♀ on slides), the same data as the holotype. 30♂27♀ (2♂2♀ on slides), 18. vii. 1968; 2♀, 8. x. 1968; Myôkengû-michi, Kasugayama, Nara City, on *S. lancifolia*, Y. Miyatake leg. 10♂9♀ (hybernated individuals), 7. iv. 1973; 1♂4♀ (hybernated individuals), 26. iv. 1973; 20♂17♀, 21. vi. 1973; Myôkengû-michi, Kasugayama, Nara City, on *S. lancifolia*, Y. Miyatake leg. 1♂, Takisaka-michi, Kasugayama, Nara City, 2. vii. 1973, on *S. lancifolia*, Y. Miyatake leg.

Distribution: Japan (Nara Pref.).

Host plant: “Shirobai”—*Symplocos lancifolia* SIEB. et ZUCC. [Symplocaceae].

This species is very similar to the preceding species, *T. esakii* in most respects, but differs from the latter in having antenna which is entirely dark brown except for two basal segments, abdomen without brown maculations on dorsal surface of the 5th and the 6th segments, the longer female genitalia with a dorsal valve which is descending, but not typically overhanging as in *esakii*, and in having male genitalia with stouter proctiger, slenderer forceps and low subgenital plate.