The genus *Systropus* from Japan, Korea, Taiwan and Thailand (Diptera, Bombyliidae)[1),2)]

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Abstract

This paper lists 17 species and 1 subspecies of the genus *Systropus* from Japan, Korea, Taiwan and Thailand, of which 12 species (including 3 undetermined species) and 1 subspecies are described and illustrated, and 2 new species (*aokii* and *joni*) and 1 new subspecies (*excisus yaeyamensis*) are presented. Keys to the species are prepared according to locality, etc. and the species-groups are discussed.

Key words: Taxonomy, Bee fly, Systropodinae, Male genitalia, Species-groups.

Introduction

There are several revisional works on or lists of *Systropus* as follows: BOWDEN (1967) (Afrotropical region); BRUNETTI (1920) (India and Burma); CARRERA and D' ANDRETTA (1950) (Brazil); ENDERLEIN (1926) (Oriental region); ENGEL (1932–37) (Palaearctic region); HESSE (1938, 1963) (southern Africa); PAINTER and PAINTER (1963) (North and Central America); YEATES and HAGAN (1988) (Australia).

Besides ENDERLEIN (1926), papers on *Systropus* from China, Japan, Korea, etc., include BEZZI (1905), BOWDEN (1975), EVENHUIS (1982), HENNIG (1941), KIM (1980), ROHLFIEN and EWALD (1979), MATSUMURA (1916), SÉGUY (1963a, b), TAKENAKA (1936) and ZAITZEV (1977).

We have been informed by Mr. Ding YANG (Kagoshima University) that Professor Chi-kung YANG (Beijing Agricultural University) and his associate have prepared a revisional paper on the Chinese *Systropus,* treating about 30 species. The publication of their paper is urgently awaited.

This paper treats 12 species and 1 subspecies of the genus *Systropus* from Japan, Korea,

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Taiwan and Thailand, of which 1 species from Korea (*joni*), 1 species from Taiwan (*aokii*), and 1 subspecies from Japan (*excisus yaeyamensis*) are new to science, 2 taxa (*excisus* and *luridus*) are new to Japan, 1 species (*excisus*) is new to Korea, and 1 species (*aurantispinus*) is new to Taiwan. There are 3 undetermined species, of which 1, occurring in Taiwan and Thailand, is possibly *flavicornis* ENDERLEIN, 1926, whose type-locality is S. China (Kwangtung), 1 from Thailand is possibly *flavipectus* ENDERLEIN, 1926, whose type-locality is India (Sikkim) and 1 from Taiwan and Japan is possibly *formosanus* ENDERLEIN, 1926.

There are 5 species previously recorded from Korea, Taiwan and Thailand, but no specimens from these areas were available in this study. These 5 species are *acuminatus* ENDERLEIN, 1926 from Taiwan; *barbiellinii* BEZZI, 1905 from N. China and Taiwan (type-locality: China [Peking]); *maccus* ENDERLEIN, 1926 from India (Sikkim), China and Korea (type-locality: Sikkim); *polistoides* WESTWOOD, 1876 from N. China and Thailand (type-locality: "Chantibon, Siam."); and *sauteri* ENDERLEIN, 1926 from Taiwan.

It is shown here that *S. tetradactylus* EVENHUIS, 1982 (type-locality: 20 km S of Taipei, Taiwan) is a junior synonym of *hoppo* MATSUMURA, 1916, and *bifurcus* EVENHUIS, 1982 (type-locality: Kirin, Manchuria Prov., China) is the same as that of *tripunctatus* ZAITZEV, 1977.

Thus, a total of 17 species are now known from Japan (5 species), Korea (6), Taiwan (9), and Thailand (3). *Systropus excisus* is widely distributed in Taiwan, S. China, Korea and Japan (Yaeyama Is.), *luridus* in Siberia, NE China and Japan, *nitobei* and *suzukii* (after KIM, 1980) in Japan and Korea, sp. A in Thailand and Taiwan, and sp. C in Taiwan and Japan.

A key to the subgenera and species-groups of *Systropus* based on 38 Afrotropical species is taken from BOWDEN (1967) in order to introduce various species. According to the key above, 12 species here discussed fall into the *hessei*-group of the subgenus *Systropus*.

Systropus maccus, in which no specimen is on hand, belongs to the subgenus *Dimelopelma,* judging from the original description in ENDERLEIN (1926) and Fig. 102 in HULL (1973).

The *hessei*-group of the subgenus *Systropus* is subdivided into a number of species-groups below.

Abbreviations used in the text and figures

Legs and abdomen: CX, coxa; S1, sternum 1; S8, sternum 8; T1, tergum 1; T8, tergum 8.

Wing (Fig. 102): A, r-m crossvein; B, vein between 1st basal cell and discal cell; C, vein between 1st posterior cell and discal cell; X, apex of 1st submarginal cell; Y, apex of 2nd submarginal cell; Z, apex of 1st posterior cell.

Male genitalia: AA, anterior bar of aedeagus; AVP, anterior ventral plate; BT, black tubercle on cercus; C, cercus; DH, distiphallus; DP, dorsal plate; ES, endophallic sclerite; GC, gonocoxites; GS, gonostylus; LP, lateral process (in posterior ventral plate); MP, median process (in posterior ventral plate); PLP, posterolateral process (in tergum 9); S10, sternum 10; T9, tergum 9.

Female terminalia: C, cercus; S8, sternum 8; T8, tergum 8.

Genus *Systropus* WIEDEMANN

Systropus WIEDEMANN, 1820, Nova Dipterorum Genera, p. 18. Type-species: *Systropus macilentus* WIEDEMANN, 1820 from southern Africa (Cape), by original designation (on plate).

For a complete generic name synonymy see EVENHUIS (1991), and for detailed generic diagnosis see HESSE (1938) and HULL (1973). An abridged diagnosis of *Systropus* is given below.

Resembling certain Hymenoptera; abdomen long and slender; hind leg much longer than fore and mid legs; metasternum+hypopleura greatly enlarged and metapleuron (= pleurotergite) reduced in area and with an oblique ridge; antenna long; head, thorax and abdomen without bristles; pile on body short and mostly recumbent; wing much shorter than body, slender, and narrowed at base; veins R_4 and R_5 forked and ending before and behind wing apex; two or three submarginal cells and three posterior cells present; anal cell closed.

A number of new species were described by ENDERLEIN (1926) as *Cephenius* ENDERLEIN, 1926 (Wien. Ent. Ztg., 43:70) whose type-species is *Systropus studyi* ENDERLEIN, 1926 (Zool. Jb., Abt. Zool. Physiol., 42:426) from China (Kwangtung). *Cephenius* was separated from *Systropus* by having the eyes in both sexes contiguous. However, this character, as well as the number of submarginal cells, are of no generic value.

Two characters, found in 12 species of *Systropus* on hand, are noticed here. The mesoscutum has a lateral concave area just above and before the wing base, and the outer part of this area is widely lamellate. The hind tibia has several scattered spines and its anterior apex has a vertical row of spines; hind tarsomeres 1–4 and mid tarsomere 1 have several ventral spines which are short on the latter; fore tarsomere 1 has brush-like ventral hairs.

Further, three characters are mentioned, following PAINTER and PAINTER (1963) who wrote, "A structure peculiar to this subfamily is situated on each side of the scutellum between that area and the base of wing (plate 3, fig. 7). It is called by WILLISTON (1901) the 'strigula', by VERRALL (1909) the 'membranous tubercle', by BEZZI (1924) 'scutellar callosity', and by HESSE (1938) the 'foliate scutellar callosity.' WILLISTON's term, which was also used by CARRERA and D'ANDRETTA (1950), is used here because of shortness and priority. The function of the structure is unknown but it looks like a much thickened squama. A similar but much smaller structure is present in *Dolichomyia* and *Toxophora* but is not known elsewhere in the Bombyliidae." This structure is yellow or whitish in 12 species on hand and similar in shape to an ear-lobe. We have also seen this structure in *Zaclava* HULL, 1973 and, to a lesser extent, in *Geron* MEIGEN, 1820.

A large elongate oval flat sensory patch is present on posteroventral surface of fore femur. Apex of this patch ends beyond middle of femur. PAINTER and PAINTER (1963) wrote, "This structure occurs only in *Systropus.*"

PAINTER and PAINTER (1963) also wrote, "Vein enlarged at or before juncture of R_1 and R_S as in Dolichopodidae. This character is found among Bombyliidae only in Systropinae." However, in 12 species of *Systropus* on hand, vein R_4+R_5 is thickened at the base of vein

R_{2+3}, instead of "at or before juncture of R_1 and R_S."

YEATES and HAGAN (1988) wrote, "It [*Systropus*] belongs to the Systropodinae, a small subfamily of 3 genera worldwide (HULL 1973): *Dolichomyia* WILLISTON, with 5 species in the Nearctic and Neotropical regions; *Zaclava* HULL, with 4 Australasian species; and *Systropus* WIEDEMANN, a mainly Pantropical genus of more than 130 species, but only 2 in Australia."

Based on PAINTER and PAINTER (1963), HULL (1973), HALL (1981), and YEATES and HAGAN (1988), a key to the genera of Systropodinae is given in this paper.

BOWDEN (1963) should be consulted concerning the subgenera and species-groups of *Systropus*. Only 1 subgenus (*Pioperna* ENDERLEIN, 1926) was not treated by BOWDEN. It has been synonymized by EVENHUIS (1991 : 61) under *Systropus*. In the *macilentus*-group of the subgenus *Systropus,* the hind femur has two or three short spines below (after BOWDEN, 1963). Of 17♂♂, 9♀♀ of *S. suzukii* from Japan, such spines are present in 1♂, 1♀ (on one leg) and 1♀ (on two legs). So, use of this character has to be cautious in separating species.

Numerous specimens of *Systropus* had aberrant wing veins. This is a common trait throughout the Bombyliidae and is not detailed here.

Male genitalia of *Systropus*

The following diagnosis is based on the 12 species discussed in this paper.

Gonocoxites fused; sternum 9 (=hypandrium) absent.

The so-called aedeagus is composed of the following parts: U-shaped dorsal plate; anterior U-shaped ventral plate; posterior ventral plate which is very often divided into median process and paired lateral processes; anterior bar; paired endophallic sclerites; distiphallus. Median and lateral processes above cylindrical or conical; anterior bar flattened laterally; distiphallus short, situated at the base of posterior ventral plate and protruded ventrally. Paired lateral processes in posterior ventral plate often absent or fused with median process.

Tergum 9 (=epandrium) usually with a posterolateral elongate process. Cercus flattened antero-posteriorly (not dorso-ventrally) and with a blackened tubercle. Sternum 10 is usually U-shaped band.

Gonocoxites, gonostylus, posterior part of dorsal plate, posterior ventral plate, black tubercle on cercus, sternum 10, etc. vary markedly in shape with species. Anterior bar of aedeagus in lateral view also may vary with species, but its shape may be somewhat roughly shown in some illustrations of this paper.

Species-groups of *Systropus* from Japan, Korea, Taiwan and Thiland

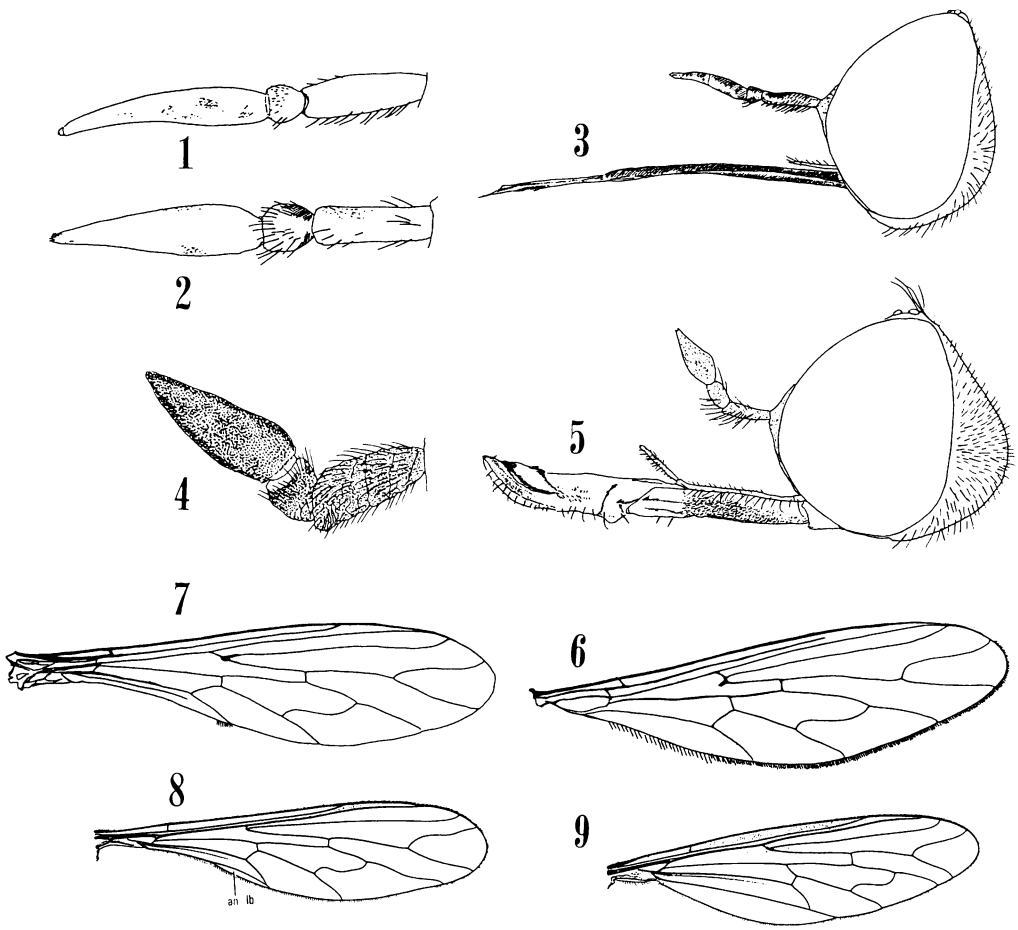
BOWDEN (1967) prepared a key to most of the subgenera and species-groups of *Systropus* on the basis of 38 Afrotropical speices. According to that key, all of 12 species in this paper fall into the *hessei*-group of the subgenus *Systropus*. Further, the *hessei*-group is subdivided

into a number of species-groups below.

From the structure of the male genitalia of the 12 species in question, it is evident that there are two species-groups, each of which contains 2 or 3 species closely related to one another. They are as follows: *aokii*-group: *aokii* (Taiwan), *suzukii* (Japan and Korea) and sp. C (Taiwan and Japan); *tripunctatus*-group: *tripunctatus* (Siberia, NE China and Korea) and sp. B (Thailand).

There is another species-group that probably forms one and the same natural unit, that is, the *aurantispinus*-group: *aurantispinus* (S. China and Taiwan), *luridus* (Siberia, NE China and Japan), *nitobei* (Korea and Japan) and sp. A (Taiwan and Thailand).

On the other hand, *excisus* (S. China, Korea, Taiwan and the Yaeyama Is.), *hoppo* (Taiwan) and *joni* (Korea) each stand alone.



Figs. 1–9. Systropodinae. 1, 3 & 7, *Dolichomyia gracilis* WILLISTON; 2, *Dolichomyia* sp.; 4, 5 & 6, *Zaclava* sp.; 8, *Dolichomyia* sp.; 9, *Systropus macer* LOEW; 1–7, from HULL (1973); 8–9, from HALL (1981); an 1b, anal lobe (=axillary).

Key (1) to the genera of Systropodinae [prepared from PAINTER and PAINTER (1963), HULL (1973), HALL (1981) and YEATES and HAGEN (1988)]

1. Metasternum only slightly enlarged; antennal segment 2 about as long as wide and segment 1 more robust (Figs. 1–5) than in *Systropus*; closed anal cell absent or, when present, anal lobe very reduced (Figs. 6–8)..... 2
– Metasternum greatly enlarged; antennal segment 2 several times longer than wide, and segment 1 much slender than in *Dolichomyia* and *Zaclava*; closed anal cell present and anal lobe normal in size (Fig. 9) ..... *Systropus*
2. Anal vein is present, although it is often incomplete (when anal vein is complete, anal lobe is reduced in area) (Figs. 7–8); antennal segment 3 conical; "metasternal plate scarcely noticeable "(after HULL, 1973)..... *Dolichomyia*
– Anal vein entirely lacking (Fig. 6); antennal segment 3 flattened; "metasternal plate shelflike, with spine or 1 or 2 teeth "(after HULL, 1973)..... *Zaclava*

Key (2) to the subgenera of *Systropus* [from BOWDEN (1967) based on 38 Afrotropical species]

1(2). Abdominal petiole two-segmented (segments 2, 3); face with dense tuft of hair below antennae; conspicuously black and yellow speices resembling vespid genus *Pelopoeus* .....Subgenus *Dimelopelma* ENDERLEIN, 1926 (6 species)
– Abdominal petiole three- or four-segmented (segments 2-4 or 2-5); face without dense tuft of hair, almost bare or with sparse hair only; species usually not conspicuously black and yellow or if so other characters conform..... 2
2(1). Wing with alula well developed, lobate; vein Sc bare beneath; propleuron with dense tuft of hair; abdomen attenuate, petiole four-segmented .....
.....Subgenus *Teinopelmus* BOWDEN, 1967 (4 species)
– Wing with alula greatly reduced, more or less linear; vein Sc hairly beneath; propleuron bare or at most with sparse pubescence; abdomen not markedly attenuate even if laterally compressed in some species, petiole three or four-segmented 3
3(2). Wing, if infuscate, unicolorous, not with broad yellow basal markings and contrasting darker apical colour; ground colour of body black or with prominent black and red or black and yellow pattern; ligament between wing base and scutellum bare, metanotum poorly developed; small to moderately sized species.....Subgenus *Systropus* WIEDEMANN, 1820 (27 species)
– Wing broadly yellow at base and costal area, apex darker, mauve to brownish-black, veins often outlined with darker colour; ground colour of body reddish; ligament between wing base and scutellum hairy, metanotum well developed; large or very large species simulating vespid genus *Belonogaster*...
.....Subgenus *Diaerops* ENDERLEIN, 1926 (1 species)

Key (3) to the species-groups of *Systropus* (*Systropus*)
[from BOWDEN (1967) on 27 Afrotropical species]

1(2). Wing with two submarginal cells 2
– Wing with three submarginal cells 8
2(1). Body conspicuously black and yellow; thorax largely yellow with black markings, wings clear hyaline 3
– Body never conspicuously black and yellow, thorax black with red or yellow markings 4
3(2). Metasternum with prominent black markings ..... *trispinosus*
– Metasternum entirely yellow ..... *quadrinotatus*
4(2). Hind femora without spines below 5
– Hind femora with two or three short spines below ..... *macilentus*-group (3 species + *sanguineus*)
5(4). Pubescence, especially on first antennal segment and thorax, markedly long and dense, white; first antennal segment entirely white-haired ..... *crudelis*-group (5 species)
– Pubescence not markedly long and dense, rarely entirely white on thorax; first antennal segment at most with some intermixed white hair 6
6(5). Club of abdomen in apical part (segments 6-8 or 7-8) with conspicuous, dense silvery or white pubescence ..... *snowi*-group (6 species)
– Club of abdomen in apical part without conspicuously silvery or white pubescence, at most with scattered or sparse silvery or white hair 7
7(6). Abdomen, especially club, strongly laterally compressed, petiole including anterior half of fifth segment and gradually expanding into club ..... *hessei*-group (3 species + *holaspis* + *leptogaster*)
– Abdomen rounded, not laterally compressed, petiole distinctly only three-segmented and club well differentiated ..... *silvestrii*-group (4 species)
8(1). Hind femora without spines below, abdomen strongly laterally compressed 9
– Hind femora with two or three short spines below, abdomen not compressed 10
9(8). Abdomen predominantly reddish or reddish-yellow, somewhat darkened towards apex; on thorax only humeral calli and upper part of pteropleuron yellowish ..... *holaspis* (belonging to *hessei*-group)
– Abdomen predominantly black, segments of stalk yellowish; thoracic markings more extensive, posterior calli and part of propleuron yellow ..... *leptogaster* (belonging to *hessei*-group)
10(8). Fore tibiae with silvery pubescence posteriorly; thoracic and abdominal markings yellow ..... *daveyi*
– Fore tibiae with black pubescence posteriorly; thoracic and abdominal markings red ..... *sanguineus* (belonging to *macilentus*-group)

Key (4) to the species of *Systropus* from Japan

1. Metasternum+hypopleura dark brown to black 2
– Metasternum+hypopleura yellowish brown (often excepting one or two pairs of dark brown to black spots) (Figs. 52, 53, 87–90) 4
2(1). Lateral border of mesoscutum yellowish brown (except for wide black patch above wing base in *nitobei*) (Figs. 103, 104, 116); mid femur yellowish brown 3
– Lateral border of mesoscutum dark brown to black, except for humeral and posterior calli and a transverse patch just behind humeral calli (Fig. 171); mid femur (except apical portion) darkened ..... sp. C
3(2). Body larger (20–23 mm in length); antennal segment 1 and frons (except area around antennae) dark brown to black; yellowish brown lateral border of mesoscutum not interrupted by wide black part above wing base (Fig. 116); hind basitarsus wholly yellowish brown (Fig. 117); pile on metasternum, abdominal sternum 1 and sides of tergum 1 longer than in *nitobei*; abdominal terga 2–5 (or 2–6) with lateral black stripes (Fig. 127); brown fumose wing membrane darker than in *nitobei*; apical part of female sternum 8 with a pair of lateral lamellate processes pointed at apex (Fig. 129) ..... *suzukii*
– Body smaller (12–18 mm in length); antennal segment 1 (except apical portion) and frons (except upper portion in ♀) yellowish brown (Fig. 103); yellowish brown lateral border of mesoscutum interrupted by wide black patch above wing base (Fig. 104); apical portion of hind basitarsus blackened (Fig. 103); pile on metasternum, abdominal sternum 1 and sides of tergum 1 shorter than in *suzukii*; abdominal dorsum without lateral black stripes (Fig. 113); brown fumose wing membrane paler than in *suzukii*; apical part of female sternum 8 acute-angled triangular (Fig. 115) ..... *nitobei*
4(1). Body larger (16–23 mm in length); metasternum with one or two pairs of large black spots (Figs. 52–53); male yellow mesoscutum lateral border acutely protruding inward before wing base (Figs. 49, 50); female mesoscutum with three broad black stripes which end far before scutellum (Fig. 51); posterior surface of halter knob yellowish brown; wing membrane dark brown fumose and darker than in *luridus*; abdominal terga 2–5 with black lateral stripes; apical part of female sternum 8 consisting of two lamellae ..... *excisus yaeyamensis*
– Body smaller (12–16 mm in length); metasternum often with one pair (rarely two pairs) of small black spots (Figs. 87–90); male and female yellow mesoscutum lateral border not protruding or slightly protruding inward before wing base (Fig. 86); posterior surface of halter knob darkened; wing membrane faintly brown fumose and paler than in *excisus*; abdominal terga 2–6 without black lateral stripes (Fig. 99); posterior margin of female sternum 8 not divided into two lamellae but with median and lateral gentle convexities (Fig. 101) ..... *luridus*

Key (5) to the species of *Systropus* from Korea

1. Metasternum+hypopleura dark brown to black 2
– Metasternum+hypopleura yellowish brown, although metasternum with one or two pairs of large dark brown to black stripes or spots (Fig. 74) 4

2(1). Antennal segment 1 (except apical portion) yellowish brown; yellowish brown lateral border of mesoscutum interrupted by wide black patch above wing base (Figs. 104, 130); in hind basitarsus, almost whole surface (except posterior surface) or apical portion darkened; brown fumose wing membrane paler than in *suzukii* 3
– Antennal segment 1 dark brown to black; yellowish brown lateral border of mesoscutum not interrupted by wide black part above wing base (Fig. 116); hind basitarsus wholly yellowish brown (Fig. 117); brown fumose wing membrane darker than in *nitobei* and *tripunctatus*; apical part of female sternum 8 with a pair of lateral lamellate processes pointed at apex (Fig. 129) ..... *suzukii*

3(2). Basal lesser 1/2 of hind basitarsus sharply yellowish brown (Fig. 103); black part on mid coxa absent or indistinct; hind trochanter yellowish brown; lateral black stripes on abdominal dorsum absent or practically so (Fig. 113); yellowish brown spot above posterior part of mesopleuron small (Fig. 104); mid-apical part of female sternum 8 consisting of a single lamella (which is triangular) (Fig. 115) ..... *nitobei*
– Hind basitarsus almost wholly darkened (although extreme base and posterior surface may be yellowish brown); mid coxa (except apical portion) dark brown to black; hind trochanter largely darkened; lateral black stripes on abdominal terga 2–5 distinct (Fig. 140); yellowish brown spot above posterior part of mesopleuron large (Fig. 130); mid-apical part of female sternum 8 consisting of two lamellae (Fig. 142) ..... *tripunctatus*

4(1). Abdomen relatively long and segment 4 parallel-sided in lateral view; abdomen largely yellowish brown (although the middle of dorsum is darkened); hind tibia partly yellowish brown (Fig. 35) 5
– Abdomen relatively short and segment 4 short and widened posteriorly in lateral view (Fig. 102); abdomen largely black; hind tibia wholly deep black; female sternum 8 "schmal und scharf bogig ausgeschnitten, hinten in zwei kurze dornartige Spitzen ausgezogen"; (after ENDERLEIN, 1926 based on ♂, ♀ from Sikkim) ..... *maccus*

5(4). Blackened apex of hind tibia distinct and larger than in *joni* (Fig. 35); yellowish brown spot above posterior part of mesopleuron isolated (Fig. 33) (this character may vary with individual); male gonostylus very long (Figs. 37–39); mid-apical part of female sternum 8 consisting of two lamellae..... *excisus*
– Blackened apex of hind tibia small and confined to anterior surface; yellowish brown spot above posterior part of mesopleuron connected with the spot

behind humeral callus (Fig. 73) (this character may vary with individual); male gonostylus long but distinctly shorter than in *excisus* (Fig. 77); mid-apical part of female sternum 8 single, thickened and pointed (Fig. 85) ..... *joni*

Key (6) to the species of *Systropus* from Taiwan

1. Metasternum+hypopleura dark brown to black (in sp. A, the posterolateral part of metasternum yellowish brown) 2
– Metasternum+hypopleura yellowish brown, but the former with one (or two) pair of large darkened stripes (or spots) (Fig. 56) 6
2(1). Fore coxa wholly or largely dark brown to black; antennal segment 1 wholly dark brown to black 3
– Fore coxa and antennal segment 1 yellowish brown 5
3(2). Lateral border of mesoscutum (except humeral and posterior calli and a spot just behind humeral callus) dark brown to black, that is, middle lateral yellowish brown spot absent 4
– Lateral border of mesoscutum (except area above or before wing base) yellowish brown, that is, anterior lateral spot connected with middle lateral spot ..... *aokii*
4(3). A blackened area on posterior surface of halter knob distinct; mid-apical part of female sternum 8 with two lateral processes (♀ unknown) (after ENDERLEIN, 1926); sp. C (♀) described in this paper may belong to *formosanus* ..... *formosanus*
– Posterior surface of halter knob without any distinct darkened area; mid-apical part of female sternum 8 single, triangular and long (after ENDERLEIN, 1926) ..... *acuminatus*
5(2). Antennal segment 2 dark brown to black; antennal segments 1–2 black haired; hind basitarsus (except base or basal portion) dark brown to black; metasternum (except mid-posterior seam) and scutellum wholly dark brown to black; mid-posterior margin of female sternum 8 not pointed but V-shaped in posterior view (Fig. 31) ..... *aurantispinus*
– Antennal segment 2 yellowish brown, antennal segments 1–2 pale yellow pilose; hind basitarsus (except extreme apex) yellowish brown; posterolateral part of metasternum and posterior part of scutellum yellowish brown; mid-apical part of female sternum 8 single, acutely pointed, not lamellate but rather thickened (Figs. 155, 156) ..... sp. A
6(1). Apical portion of hind tibia yellowish brown; body larger; posterior surface of halter knob with a large well-defined blackened area 7
– Apical portion of hind tibia blackened; body smaller (body 14–15 mm; wing 8.5–9.5 mm); posterior surface of halter knob without a large well-defined blackened area; body slender and abdominal terga 6–8 less conspicuously widened laterally as usual; pteropleuron wholly dark brown to black; mid-

apical part of female sternum 8 consisting of two lamellae, each of which has a rounded apical margin in lateral view ..... *excisus*

7(6). Body slender 8

– "Body robust; tarsi black, but fore tarsomeres 1–3 and basal half of dorsal surface of mid tarsomere 1 yellowish brown; posterior margin of female sternum 8 with a short pointed process; "(after ENDERLEIN,1926) ..... *sauteri*

8(7). Abdominal terga 6–8 more conspicuously widened laterally (Fig. 58); tarsi darkened, but fore tarsomeres 1–2 (or 1–3) and mid tarsomere 1 (often except apical portion) yellowish brown; posterodorsal part of pteropleuron yellowish brown; mid-apical part of female sternum 8 consisting of a single triangular lamella (Fig. 72) ..... *hoppo*

– Abdominal terga 6–8 *probably* less conspicuously widened laterally as usual; tarsi darkened, but fore tarsomeres 1–5 and mid tarsomeres 1–3 yellowish brown; pteropleuron wholly dark brown to black; mid-apical part of female sternum 8 consisting of two blunt lamellae (after Bezzi, 1905 and Engel, 1933–37 based on ♂, ♀ from North China) ..... *barbiellinii*

Key (7) to the species of *Systropus* from Thailand

1. Hypopleuron or "a large oblong spot on each side of the thorax below the wings, extending to the base of the hind legs" yellowish brown (or whitish) (Fig. 159); abdominal segments 4–7 or 6–7 largely dark brown to black (Figs. 161, 162); antennal segment 2 dark brown to black (Fig. 157) 2

– Hypopleuron entirely dark brown to black or pleuron without large yellowish brown (or whitish) spot from wing base to hind coxa; abdomen (except tergum 1) wholly or almost wholly yellowish (or reddish) brown (Fig. 154); antennal segment 2 (as well as segment 1) yellowish brown ..... sp. A

2. A transverse line behind wings, extending across dorsum, with each end pointed and directed forwards; abdominal segment 4 black, with a basal whitish band, interrupted at the middle of dorsum; abdominal segments 5–7 black, with the hind margin of each narrowly whitish (after Westwood, 1876) ..... *polistoides*

– A pair of triangular yellowish brown spots, including posterior calli, present (Fig. 157); abdominal segments 4–5 yellowish brown (except blackened dorsal parts and lateral stripes due to dense short recumbent black pile) (Figs. 161, 162) ..... sp. B

Key (8) to the local populations of *Systropus excisus*

1. In hind tibia, apical portion and basal over 1/2 (except basal portion) blackened (Figs. 35, 36); antennal segment 1 (except base) dark brown to black (Fig. 32); in lateral border of mesoscutum, three pale yellow spots are

isolated (Figs. 33, 34); in female mesoscutum, extent of black part is as in male 2

– Apical portion of hind tibia yellowish brown (basal 1/2 or more of hind tibia may be covered with black tomentum) (Fig. 54); antennal segment 1 (except apex) yellowish brown (Fig. 48); pale yellow lateral border of mesoscutum is interrupted only by a black patch above wing base (Fig. 49) (although three pale yellow spots are isolated in 1♂ of 4♂♂ and 1♀ [Fig. 50]); in female mesoscutum, black part is reduced in extent (Fig. 51) (although this character may possibly vary with individual) ..... specimens (4♂♂, 1♀) from Japan (Yaeyama Is.), that is, *excisus yaeyamensis*

2 Apical black part of hind tibia wider than long (Fig. 35); pale yellow spot behind humeral callus rather rectangular and smaller than in specimens from Taiwan (Fig. 33) ..... specimens (8♂♂, 2♀♀) from Korea

– Apical black part of hind tibia longer than wide (Fig. 36); pale yellow spot behind humeral callus rather triangular and larger than in specimens from Korea (Fig. 34) ..... specimens (2♂♂, 2♀♀) from Taiwan

Key (9) to 9 species of *Systropus* based on apical part of female sternum 8

1. Apical part of female sternum 8 yellowish (or reddish) brown and without any acute process or protruding lamellae (Figs. 31, 101) 2

– Apical part of female sternum 8 shining black and with one acute process or two protruding lamellae 3

2(1). Posterior margin of sternum 8 with gentle median and lateral convexities (Figs. 100, 101) ..... *luridus* (Siberia, NE China and Japan)

– Posterior margin of sternum 8 consisting of two very gentle or shallow convexities (Fig. 31) and when compressed laterally it is V-shaped in posterior view ..... *aurantispinus* (Taiwan and S. China)

3(1). Apical part of sternum 8 with one acute process 4

– Apical part of sternum 8 with two protruding lamellae 7

4(3). Sternum 8 with a mid-apical process which is acute-angled triangularly 5

– Apical part of sternum 8 large, lamellate and forming almost equilateral triangle (Fig. 72) ..... *hoppo* (Taiwan)

5(4). Mid-apical process of sternum 8 somewhat thickened or nearly lamellate in lateral view (Figs. 114, 155) 6

– Mid-apical process of sternum 8 conspicuously thickened in lateral view (Fig. 84) ..... *joni* (Korea)

6(5). Black area just before mid-apical process smaller (Fig. 115) ..... *nitobei* (Japan and Korea)

– Black area just before mid-apical process larger (Fig. 156) ..... sp. A (Taiwan and Thailand)

7(3). Paired lamellae narrower and divided by U-shaped concavity (Figs. 129, 142) 8

– Paired lamellae wider and divided by V-shaped concavity (Fig. 47) ....*excisus* (Taiwan, S. China, Korea and Yaeyama Is.)

8(7). Black area before lamellae smaller and divided by mid yellowish (or reddish) vitta (Fig. 142) ..... *tripunctatus* (Korea)

– Black area before lamellae larger and not divided (Fig. 129) ....*suzukii* (Japan, and Korea [after KIM, 1980])

Key (10) to 12 species of *Systropus* based on male genitalia

1. In posterior ventral plate, lateral processes absent (Figs. 40, 134, 166)..... 2

– In posterior ventral plate, lateral processes present 4

2(1). Gonostylus and median process (in posterior ventral plate) longer and thin (Figs. 39, 40); posterior part of dorsal plate protruded triangularly (Fig. 40); tergum 9 without posterolateral process (Figs. 43, 44) .....*excisus*

– Gonostylus and median process shorter and robust (Figs. 133, 134, 165, 166); posterior margin of dorsal plate transversely wide (Figs. 134, 166); tergum 9 with posterolateral process (Figs. 137, 139, 169, 170)..... *tripunctatus*-group.....3

3(2). Gonostylus in lateral view with dorsal rounded ridge (Fig. 165); posterolateral process of tergum 9 wide in ventral view and with rectangular posterior part in posterior view (Figs. 169, 170); blackened tubercle on cercus narrower (Fig. 169).....sp. B

– Gonostylus in lateral view without dorsal ridge (Fig. 133); posterolateral process of tergum 9 narrow and pointed (Figs. 137, 139); blackened tubercle on cercus wide (Fig. 138) ..... *tripunctatus*

4(1). Median process in posterior ventral plate ending far behind base of lateral process; mid-posterior part of dorsal plate not protruded vertically (dorsally); tergum 9 with elongate posterolateral process 5

– Median process in posterior ventral plate short (or practically absent) and ending near base of lateral process (Figs. 78, 79); mid-posterior part of dorsal plate tape-like and curved vertically (dorsally) like saddle (Fig. 78); tergum 9 with wide and short posterolateral part and without elongate process (Figs. 81, 82) .....*joni*

5(4). Median process in posterior ventral plate single and not divided into two lobes..... 6

– Median process in posterior ventral plate rugose at basal part and divided into two lobes at apical part (Figs. 63, 64)..... *hoppo*

6(5) Posterior part of dorsal plate rectangular (Fig. 23) or divided into two parts protruded posteriorly (Figs. 94, 108, 147)..... *aurantispinus*-group.....7

– Posterior part of dorsal plate triangular or with a protruded mid-apical part (Figs. 14, 121, 175, 181)..... *aokii*-group.....11

7(6) Median process in posterior ventral plate ending before apex of lateral process (Figs. 94, 108, 147, 153); posterior part of dorsal plate divided into

two parts protruded posteriorly (Figs. 94, 108, 147) 8

– Median process in posterior ventral plate ending beyond apex of lateral process (Figs. 23, 24); posterior part of dorsal plate rectangular (Fig. 23); gonostylus in dorsal and ventral views abruptly widened at basal part (Figs. 20, 21); posterolateral process in tergum 9 and blackened tubercle on cercus thin (Figs. 26, 27) ..... *aurantispinus*

8(7). Median process in posterior ventral plate not wider posteriorly (Figs. 108, 147); blackened tubercle on cercus situated along inner margin of cercus (Figs. 111, 150) 9

– Median process in posterior ventral plate wider posteriorly (Fig. 94); blackened tubercle on cercus far distant from inner margin or ventral inner corner of cercus (Fig. 97); posterolateral process of tergum 9 long and thin (Figs. 97, 98) ..... *luridus*

9(8). Each posterolateral part of dorsal plate semicircular or triangular (Figs. 147, 153); in posterior ventral plate from ventral view, lateral process wider than median process (Figs. 148, 153); gonostylus with apical ventral spine which is longer and distinct in lateral view (Fig. 146) ..... sp. A.....10

– Each posterolateral part of dorsal plate rectangular or pentagonal (Figs. 108, 109); in posterior ventral plate from ventral view, lateral process narrower than median process (Fig. 109); gonostylus with apical ventral spine short and indistinct (Fgi. 107) ..... *nitobei*

10(9). Lateral process in posterior ventral plate widest near apex (Fig. 147); each posterolateral part of dorsal plate rounded at apical margin (Fig. 147); median process in posterior ventral plate longer than in the specimen from Thailand (Fig. 148) ..... 2♂♂ from Taiwan

– Lateral process tapering apically (Fig. 153); each posterolateral part of dorsal plate pointed at apex (Fig. 153); median process shorter than in the specimens from Taiwan (Fig. 153) ..... 1♂ from Thailand

11(6). Anterior margin of sternum 10 extending or nearly extending to anterior margin of tergum 9 (Figs. 18, 126); outer margin of lateral process (in posterior ventral plate) from ventral view weakly concave or not concave (Figs. 15, 122) 12

– Anterior margin of sternum 10 far distant from anterior margin of tergum 9 (Figs. 180, 182); outer margin of lateral process strongly concave (Figs. 175, 176, 181) ..... sp. C

12(11). Lateral process in posterior ventral plate from dorsal or ventral view thin (Figs. 14, 15); blackened tubercle on cercus tapering ventrally and pointed (Fig. 17) ..... *aokii*

– Lateral process in posterior ventral plate from dorsal or ventral view wide (Figs. 121, 122); ventral end of blackened tubercle on cercus about as wide as dorsal end (Fig. 125) ..... *suzukii*

Key (11) to the species of *aokii*-group

1. Lateral border of mesoscutum yellowish brown, often except for black patch above wing base (Fig. 116); mid femur yellowish brown 2
– Lateral border of mesoscutum dark brown to black, except for humeral and posterior calli and a transverse patch just behind humeral callus (Fig. 171); mid femur (except apical portion) darkened ..... sp. C
2. Hind tibia yellowish brown, except for blackened part before apical portion (Fig. 117); hind tarsomeres 1–3 (sometimes 1 or 1–2) yellowish brown (Fig. 117) ..... *suzukii*
– Hind tibia darkened except for apical portion (Fig. 10); apical portion of hind tarsomere 1 (as well as tarsomeres 2–5) darkened (Fig. 10) ..... *aokii*

Key (12) to the species of *aurantispinus*-group

1. Metasternum + hypopleura dark brown to black 2
– Metasternum + hypopleura yellowish brown, but the former often with one (or two) pair of large darkened stripes (or spots); posterior margin of female sternum 8 with gentle median and lateral convexities (Fig. 101) ..... *luridus*
2(1). Antennal segment 2 dark brown to black (Fig. 103); antennal segments 1–2 black haired; hind tarsomere 1 (except base or basal portion) dark brown to black (Fig. 103) 3
– Antennal segment 2 yellowish brown; antennal segments 1–2 pale yellow pilose; hind tarsomere 1 (except extreme apex) yellowish brown; postero-lateral part of metasternum and posteiror part of scutellum yellowish brown; mid-apical part of female sternum 8 single, acutely pointed, not lamellate but rather thickened (Figs. 155, 156) ..... sp. A
3(2). Body larger (25–27 mm in length); mid-anterior black part of mesoscutum narrow (Fig. 19); abdominal terga 2–5 with black lateral stripes (Fig. 29); female sternum 8 without apical process (Fig. 31) ..... *aurantispinus*
– Body smaller (12–18 mm in length); mid-anterior black part of mesoscutum wide (Fig. 104); abdominal terga 2–5 without black lateral stripes (Fig. 113); female sternum 8 with a mid-apical acute-angled triangular process which is nearly lamellate or somewhat thickened in lateral view (Figs. 114, 115) ..... *nitobei*

Key (13) to the species of *tripunctatus*-group

1. Metasternum + hypopleura dark brown to black; hind tibia (except apical portion) blackened; apical part of female sternum 8 lamellate and with 2 black acute processes (Fig. 142) ..... *tripunctatus*
– Metasternum + hypopleura yellowish brown except for black spots on meta-sternum (Fig. 158); hind tibia largely yellowish brown (Fig. 160); (♀ un-known) ..... sp. B

Systropus acuminatus (ENDERLEIN)

Cephenius acuminatus ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 77. Type-locality: Toyenmongai, Tainan, Taiwan.

No specimens were available for study. The original description is as follows; "♂, ♀. Die Unterschiede von *C. studyi* sind: Mittel- und Hinterschenkel mehr rostgelb. Abdomen oben kaum gedunkelt. Subgenitalplatte des ♀ stark zugespitzt (in Spitze ausgezogen)..... Halterenknopf oben kaum gedunkelt.—Körperlange 21 1/2–23 mm. Flügellänge 9 1/2–11 1/2 mm....."

HENNIG (1941) treated *acuminatus* as a synonym of *formosanus*. He wrote, "Die Gestalt der weiblichen Subgenitalplatte ist so variabel, dass ich *acuminatus*, die auf Grund dieses Merkmals von *formosanus* abgetrennt würde, nicht als eigene Art anerkenen kann."

However, the female sternum 8 of *acuminatus* is so different in shape from *formosanus* that it is very difficult to believe that they are conspecific.

Distribution. Taiwan.

Systropus aokii sp. n.

(Figs. 10–18)

We do not hesitate to name this species as new to science, although only one male specimen is on hand. It may be found in future studies that it is better to treat this species as a subspecies of *suzukii*.

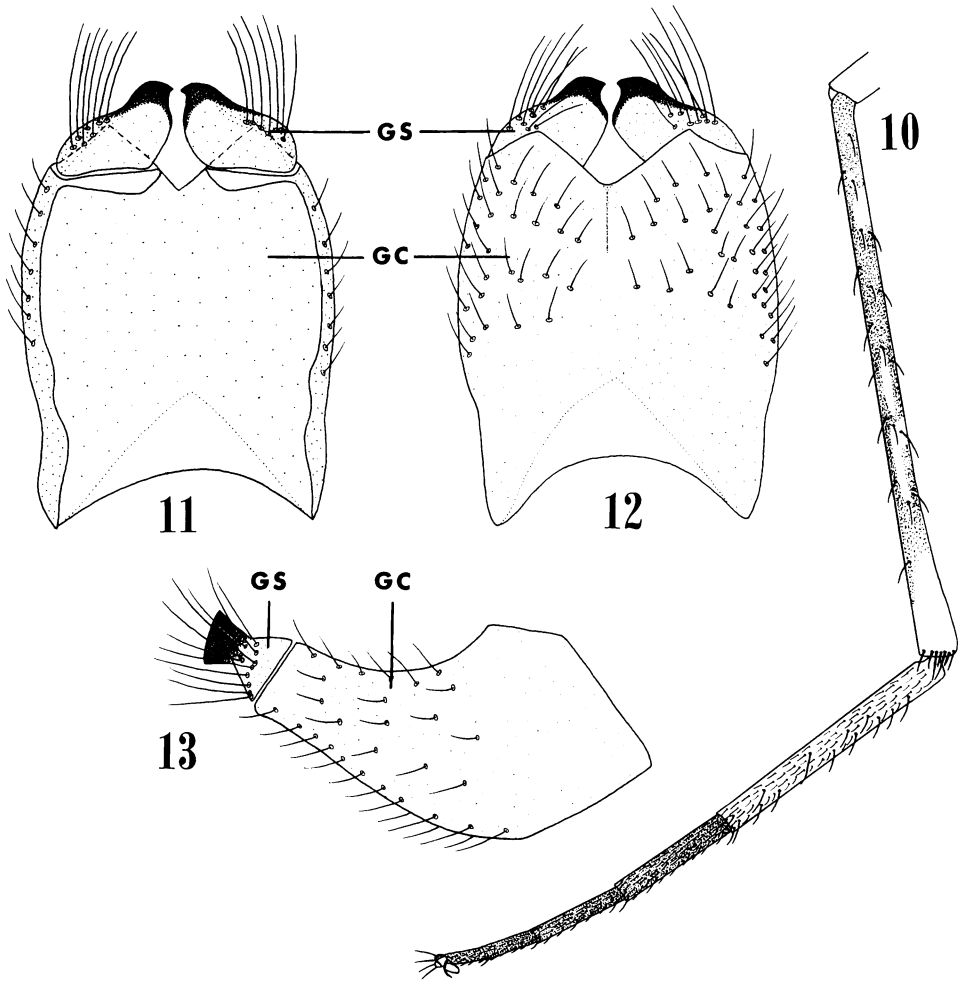
The male genitalia of *aokii* are very similar to those of *suzukii* and sp. C, but may be separated from the latter two by having the characters shown in couplets 11–12 of the key 10.

Among the species known from Taiwan, *aokii* may be separated from *formosanus* and *acuminatus* by having the lateral border of mesoscutum (except area above or before wing base) yellowish brown, that is, anterior lateral spot connected with middle lateral spot.

According to ENDERLEIN (1926), the middle lateral yellowish brown spot on mesoscutum is absent in *formosanus, acuminatus, studyi* ENDERLEIN, 1926 (from S. China), and *chinensis* BEZZI, 1905 (from N. & S. China).

S. aokii fits the description of *suzukii*, except for the characters given below.

Male. Head: Half width of head 1.1 times distance from antenna to median ocellus, 1.9 times width of face at lowest portion from a direct frontal view, 4.4 times width of frons just above antenna, and 2.8 times width of face at upper end of clypeus, which is 1.6 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.3 times that from antenna to median ocellus (in *suzukii* 1.4–1.6 times); relative lengths of antennal segments 1–3, 243:100:221 and their relative widths in lateral view 21:21:36; antennal segment 1 as long as distance from ridge below proboscis to antenna; no significant structural difference is seen between *aokii* and *suzukii*, possibly excepting the relative lengths of face and frons.

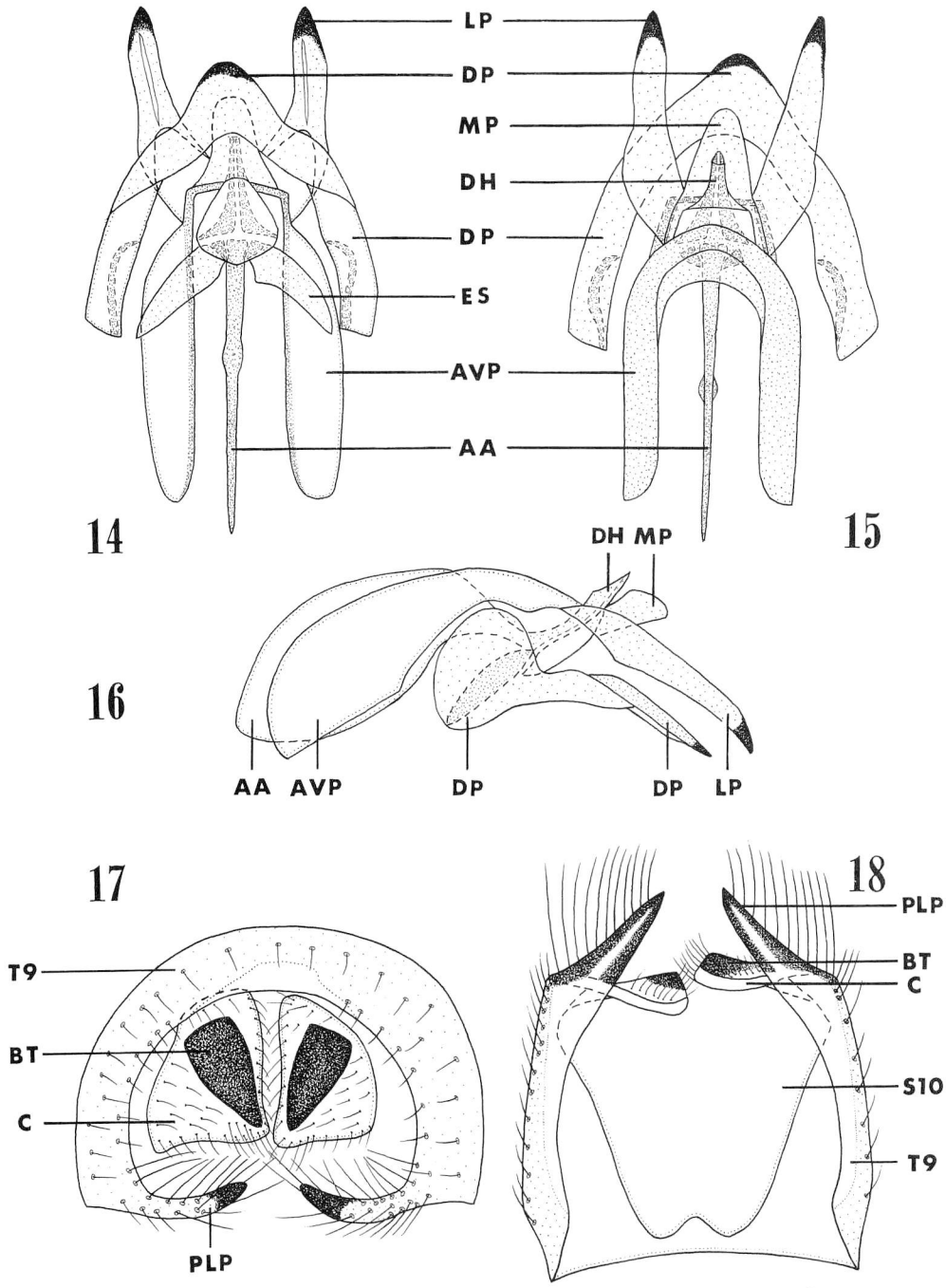


Figs. 10–13. *Systropus aokii* sp. n., male. 10, Hind tibia and tarsus, anterior view; 11–13, gonocoxites and gonostylus, dorsal, ventral and lateral views.

Wing: Y 1.9 times as long as X; Z 0.2 times as long as Y and 0.6 times as long as A; C 0.6 times as long as B (no significant difference is seen between *aokii* and *suzukii*).

Legs (Fig. 10): Coxae largely dark brown (in *suzukii,* apical portions of coxae, especially that of fore coxa, yellowish brown); hind tibia (except apical portion) darkened and hind tarsomeres 2–5 (including apical portion of hind tarsomere 1) blackened; relative lengths of segments (excluding coxa and trochanter) of fore leg 34:36:17:7:5:4:6, of mid leg 38:44:14:6:5:4:6, of hind leg 100:109:48:24:18:9:9 and in hind leg viewed from the side, relative widths of femur, tibia and tarsomeres 1–3, 8:8:6:4:3.

Male genitalia (Figs. 11–18): Fused gonocoxites (not flattened) longer than wide, with anterior margin deeply concave or having V-shaped pale part, and with posteiror margin having a pair of ventral convexities. Gonostylus in dorsal (or ventral) view with outer and inner margins wavy and with a minute apical inner ventral tooth; apical portion of gonostylus blackened. In posterior ventral plate from dorsal or ventral view, median process wide,



Figs. 14–18. *Systropus aokii* sp. n., male. 14–16, Aedeagus complex, dorsal, ventral and lateral views; 17–18, tergum 9, cerci, and sternum 10, posterior and ventral views.

tapering apically, short and ending far before apex of lateral process, and each lateral process blackened at apical portion and pointed. Dorsal plate V-shaped and with mid-posteiror protruded part which is large and triangular. Tergum 9 (not flattened) rectangular, roughly

as long as wide, and with posterolateral process which is blackened at apical portion and pointed. Cercus in posterior view rather trapezoidal, and with wide blackened tubercle which is pointed at ventral inner end. Sternum 10 large, about as long as wide, tapering anteriorly and with anterior margin having a median concavity. Specimen dissected: 1♂, Takeya, Horisha, 8. vii. 1940, A. Aoki.

Length: Body 25.7 mm; wing 12.8 mm; hind femur 7.9 mm.

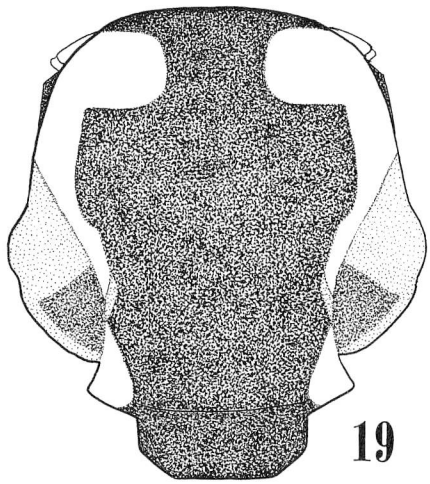
Female. Unknown.

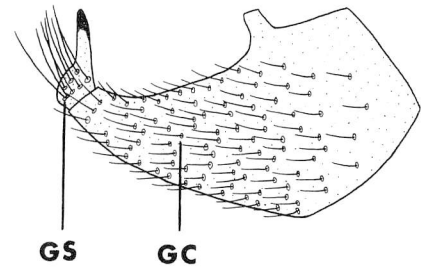
Distribution. Taiwan.

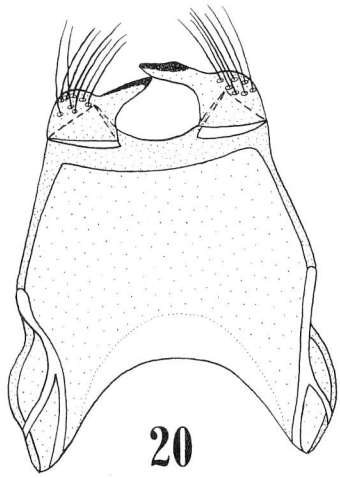
Holotype: ♂, Takeya, Horisha, 8. vii. 1940, A. Aoki.

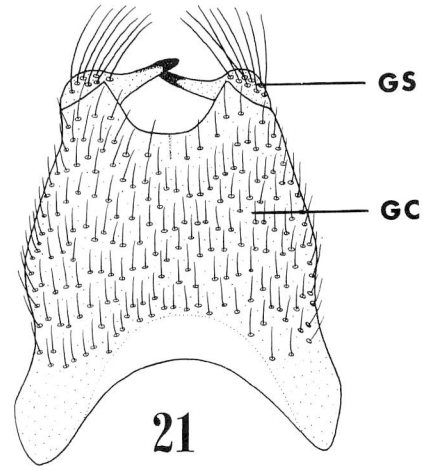
The holotype is deposited in National Institute of Agro-Environmental Sciences, Tsukuba.

This species is dedicated to the late Mr. Akira Aoki, who collected it.









Figs. 19–22. *Systropus aurantispinus* Evenhuis, male. 19, Mesoscutum and scutellum; 20–22, gonocoxites and gonostylus, dorsal, ventral and lateral views.

Systropus aurantispinus EVENHUIS

(Figs. 19–31)

Systropus (*Systropus*) *aurantispinus* EVENHUIS, 1982, Pac. Insects, 24:36. Type-locality: Shaowu, Fukien Prov., S. China.

S. aurantispinus, new to Taiwan, has peculiar male genitalia (couplet 7 of the key 10) and female sternum 8 (couplet 2 of the key 9). Among the species from Taiwan, *aurantispinus* is easily separated from sp. A (couplet 5 of the key 6).

Male. Head (antennal segment 3 lacking): Yellowish brown, but occiput (except wide area below neck) and proboscis (except ventral basal part) dark brown to black; antennal segment 2 blackened, due to dense black hairs; upper face and occiput pale pilose and white gray pollinose; antennal segments 1–2 black haired; half width of head equal to distance from antenna to median ocellus, 1.8 times width of face at lowest portion from a direct frontal view, 4.1 times width of frons just above antenna, and 2.9 times width of face at upper end of clypeus, which is 1.4 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.2 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 231:100:? and their relative widths (in lateral view) 19:19:?; antennal segment 1, 1.1 times as long as distance from ridge below proboscis to antenna.

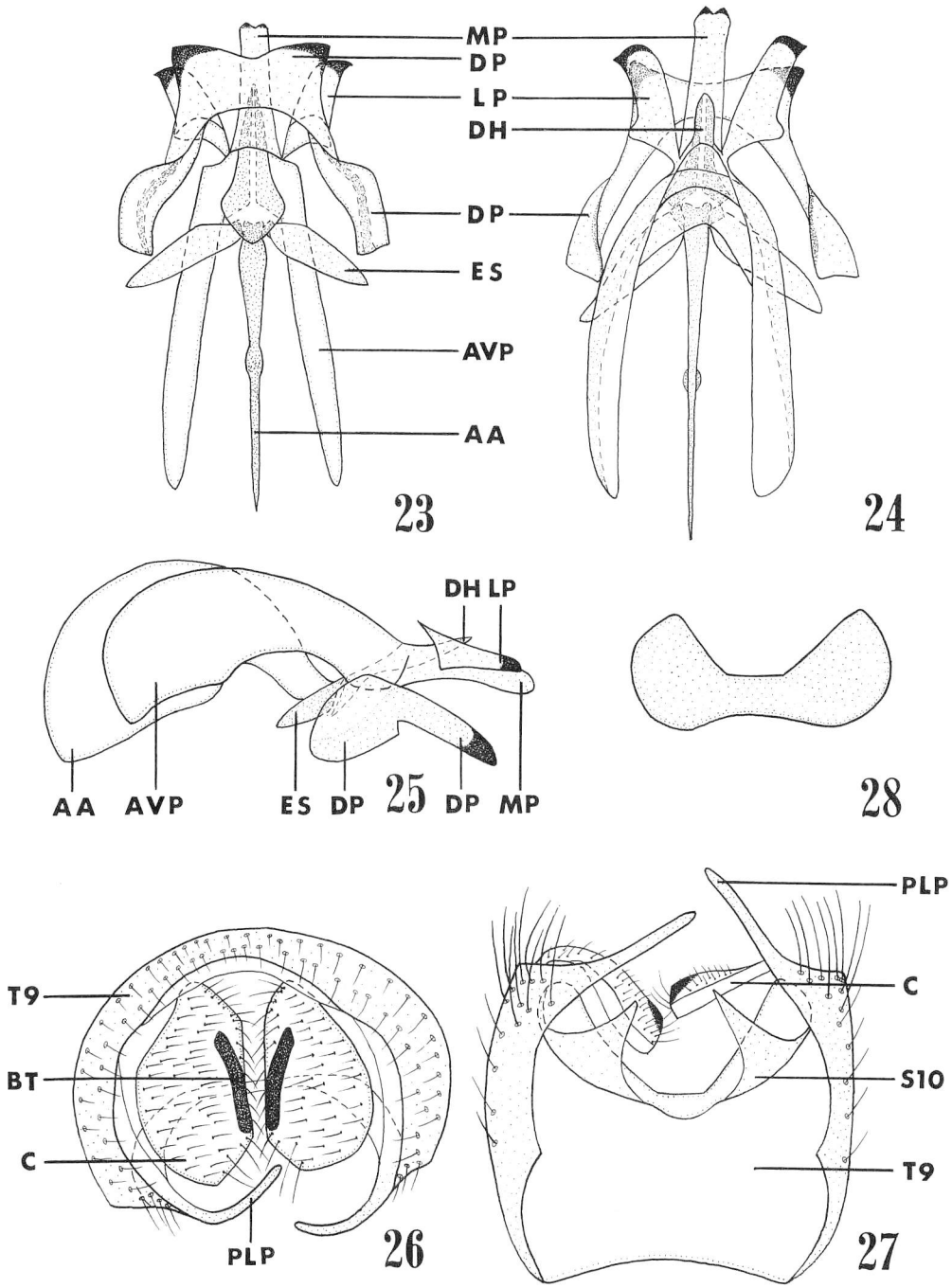
Thorax (Fig. 19): Dark brown to black and with white gray pollen; thorax with yellowish brown parts as follows: humeral and posterior calli, lateral border of mesoscutum (which is widely protruded inward behind humeral callus and is interrupted by black patch before posterior callus), area around anterior spiracle, propleuron and pteropleuron (except anterior part); pile on thorax pale (short black pile may be partly present).

Wing: Membrane brown fumose; veins brown to dark brown; halter yellowish brown, but posterior surface of knob with a darkened area; Y 1.8 times as long as X; Z 0.4 times as long as Y and 1.5 times as long as A; C 0.9 times as long as B.

Legs: Yellowish brown; mid and hind coxae partly dark brown to black; hind tibia (except basal portion and apex) and hind tarsus (except base of tarsomere 1) blackened; pile on coxa and femur pale yellow, short and recumbent and partly black on mid and hind legs; relative lengths of segments (excluding coxa and trochanter) of fore leg 38:40:22:9:7:4:5, of mid leg 44:48:17:9:6:4:6, of hind leg 100:107:56:26:16:9:9 and in hind leg viewed from the side, relative widths of femur, tibia and tarsomeres 1–3, 8:8:5:3:3.

Abdomen: Yellowish brown; tergum 1 dark brown to black and terga 2–5 with darkened lateral stripes; tergum 1 with short black pile which changes into pale on sides; rest of abdomen short recumbent pale or pale yellow pilose but dorsal surface of terga 2–7 with black tomentum-like pile.

Male genitalia (Figs. 20–28): Fused gonocoxites (not flattened) longer than wide, somewhat narrower posteriorly, with anterior margin concave or with U-shaped pale part, with posterior margin having a pair of ventral convexities, and with a lateral dorsal process before middle. Gonostylus abruptly widened at basal portion in certain angle of view, and with inner tip pointed in direct dorsal view. In posterior ventral plate, median and lateral



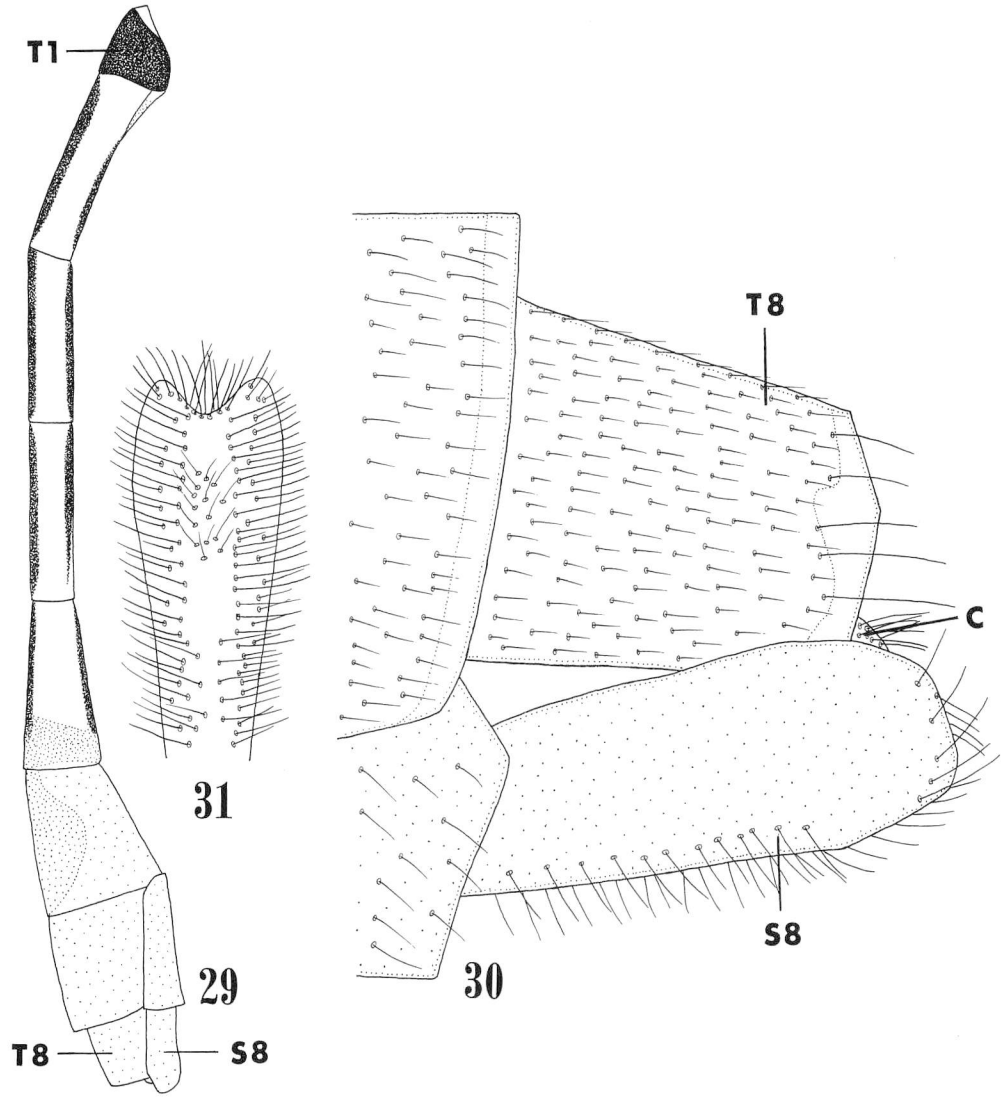
Figs. 23–28. *Systropus aurantispinus* EVENHUIS, male. 23–25, Aedeagus complex, dorsal, ventral and lateral views; 26–27, tergum 9, cerci and sternum 10, posterior and ventral views; 28, sternum 10, dorsal view.

processes rectangular and somewhat narrower posteriorly; apical margin of median process slightly but distinctly concave; each lateral process with a posteroouter tooth; median process extending beyond apices of lateral processes. Posterior part of dorsal plate rectangular and

with posterolateral corners blackened. Tergum 9 (not flattened) rectangular, roughly as long as wide, and with posterolateral process which is thin. Cercus in posterior view with inner margin nearly straight, with outer margin arched, and with thin blackened tubercle whose ventral portion is situated along inner margin of cercus. Sternum 10 U-shaped, thinner at middle, and with a pair of lateral anterior processes directed ventrally. Specimen dissected: 1 ♂, Taiwan, 4. vi. 1976, H. MAKIHARA.

Length: Body 24.7 mm; wing 12.5 mm; hind femur 7.4 mm.

Female. Similar to male except as follows: Head (antennal segments 1–3 complete): In 1 specimen measured, half width of head 3.9 times width of frons just above antenna, 3.0 times width of face at upper end of clypeus, which is 1.3 times width of frons just above antenna;



Figs. 29–31. *Systropus aurantispinus* EVENHUIS, female. 29, Abdomen, lateral view; 30, apex of abdomen, lateral view; 31, apical portion of sternum 8, ventral view.

relative lengths of antennal segment 1–3, 224 : 100 : 182 and their relative widths (in lateral view) 12 : 15 : 24.

Wing: In 1 specimen measured, Z 0.3 times as long as Y and 1.1 times as long as A, and C 1.1 times as long as B.

Legs: Relative lengths of segments of fore leg 39 : 41 : 25 : 9 : 7 : 4 : 5, of mid leg 45 : 49 : 20 : 9 : 6 : 4 : 5, of hind leg 100 : 107 : 55 : 24 : 17 : 9 : 9 and in hind leg viewed from the side, relative widths of femur, tibia and tarsomeres 1–3, 8 : 8 : 6 : 3 : 3.

Abdomen (Figs. 29–31): Posterior margin of sternum 8 has no process and consists of two very gentle convexities and when compressed laterally, it is V-shaped in posterior view; apical part of sternum 8 not black but yellowish (or reddish) brown.

Length: Body 27.0 mm; wing 13.9 mm; hind femur 7.7 mm.

Distribution. S. China, and Taiwan (new record).

Specimens examined (1♂, 1♀): 1♂, 1♀, Taiwan, 4. vi. 1976, H. MAKIHARA.

One of us (EVENHUIS) has examined the type female and 24 paratypes (see EVENHUIS, 1982: 36, for locality data) in the Bishop Museum.

Systropus barbiellinii BEZZI

Systropus barbiellinii BEZZI, 1905, Redia, 2 (1904): 271. Type-locality: Tang-san, Peking, China.

Among the species known from Taiwan, *barbiellinii* may easily be separated from *hoppo* as shown in the couplet 8 of the key 6.

HENNIG (1941) recorded *barbiellinii* from Taiwan and wrote, "Die anschliessend genannten formosanischen Exemplare des DEI sind von BEZZI as „*barbiellinii*" bezeichnet worden. Sie führen auch in ENDERLEINS Tabelle zu *barbiellinii*, weichen aber von dieser Art durch die Färbung der Vorder- und Mitteltarsen ab. Offenbar stellen sie eine besondere formosanische Subspecies dar."

Length (2♂♂, 1♀): Body 21–23 mm; wing 13–14 mm (after BEZZI, 1905).

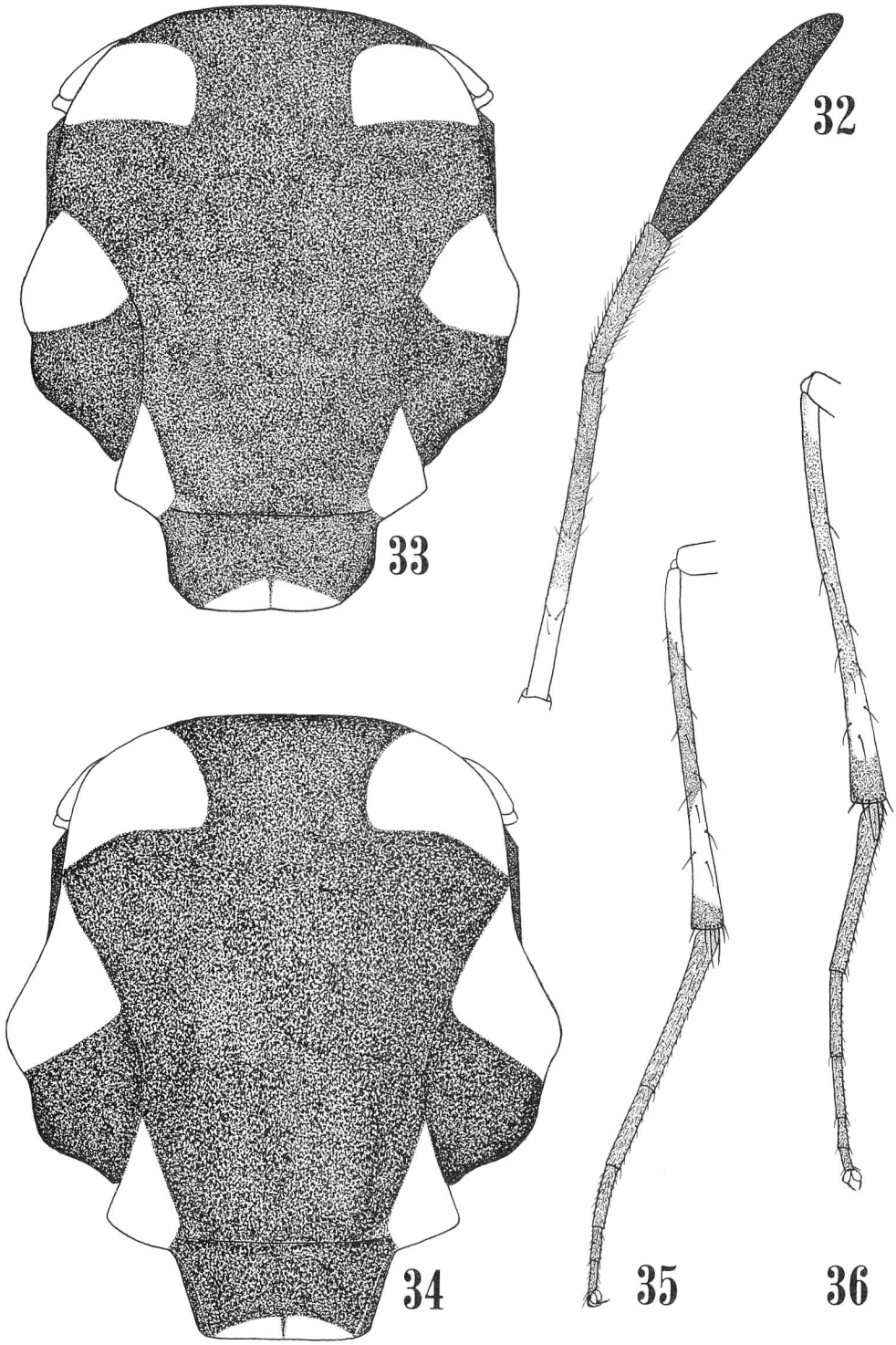
Distribution. N. China, Taiwan.

Systropus excisus (ENDERLEIN)

(Figs. 32–47)

Cephenius excisus ENDERLEIN, 1926, Wien. Ent. Ztg., 43 : 81. Type-locality: "Canton", S. China.

S. excisus was recorded from Taiwan by HENNIG (1941). There are 8♂♂, 2♀♀ from Korea, 2♂♂, 2♀♀ from Taiwan, and 4♂♂, 1♀ from Japan (Yaeyama Is.), but we have no specimen from China before us. *S. excisus* is new to Korea and the Yaeyama Is. (near Taiwan). The specimens from the Yaeyama Is. are here separated subspecifically from those of Taiwan and Korea (see the key 8).

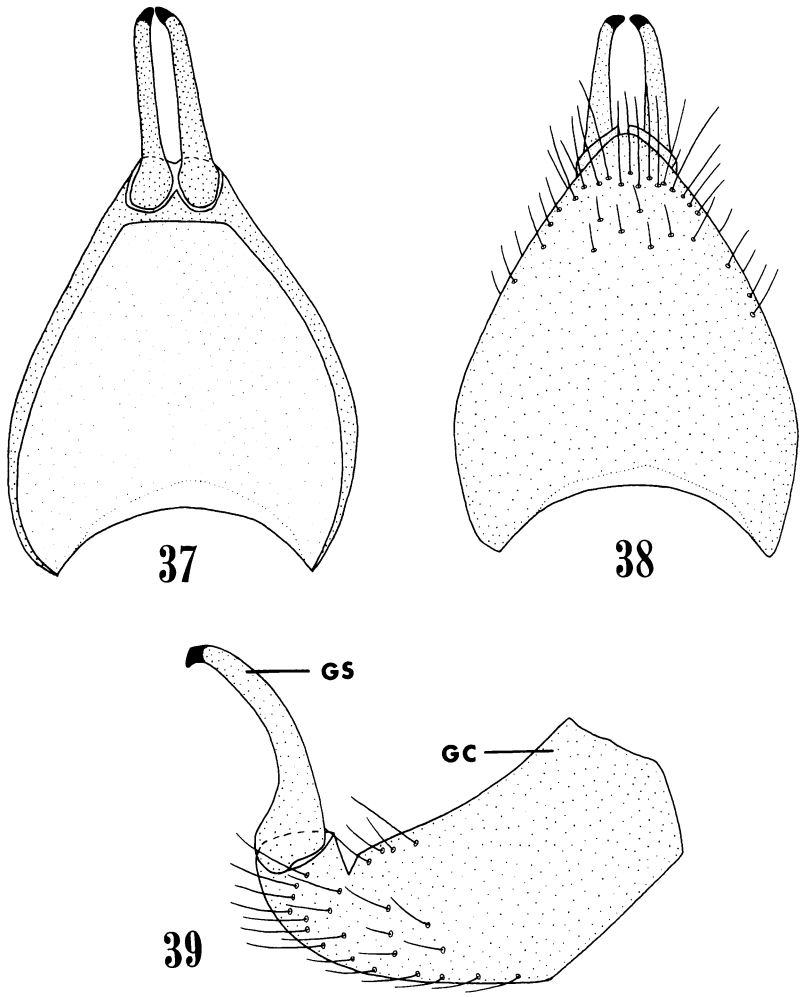


Figs. 32–36. *Systropus excisus* (ENDERLEIN), male. 32, Antenna; 33–34, mesoscutum and scutellum; 35–36, hind tibia and tarsus, anterior view; 32, 33 & 35, from Korea; 34 & 36, from Taiwan.

The male genitalia of *excisus* are very characteristic and at once distinguished from those of other species (couplet 1 of the key 10), although external characters and the female sternum 8 of *excisus* are not so.

The specimens from Korea (Figs. 32, 33, 35, 37–44)

Male. Head (Fig. 32): Whitish yellow; occiput (except wide area below neck), antenna (except basal portion of segment 1 which varies greatly with individual and often confined to extreme base) and proboscis (except reddish yellow ventral basal part) dark brown to black; ocellar triangle reddish brown; frons, face, cheek, and occiput with pale gray pollen; upper face, cheek, occiput and palpus pale pilose; antennal segments 1–2 black haired; half width of head 0.9–1.0 times distance from antenna to median ocellus, 1.8–2.0 times width of face at lowest portion from a direct frontal view, 3.6–4.4 times width of frons just above antenna, and 2.3–2.6 times width of face at upper end of clypeus, which is 1.6–1.7 times width of frons



Figs. 37–39. *Systropus excisus* (ENDERLEIN), male from Korea; gonocoxites and gonostylus, dorsal, ventral and lateral views.

just above antenna; distance from ridge below proboscis to antenna 1.1–1.2 times distance from antenna to median ocellus; relative lengths of antennal segments 1–3, 220 (205–243) : 100 : 191 (167–209) and their relative widths (in lateral view) 17 (16–19) : 18 (17–21) : 37 (33–41); antennal segment 1, 1.0–1.1 times as long as distance from ridge below proboscis to antenna; N=8.

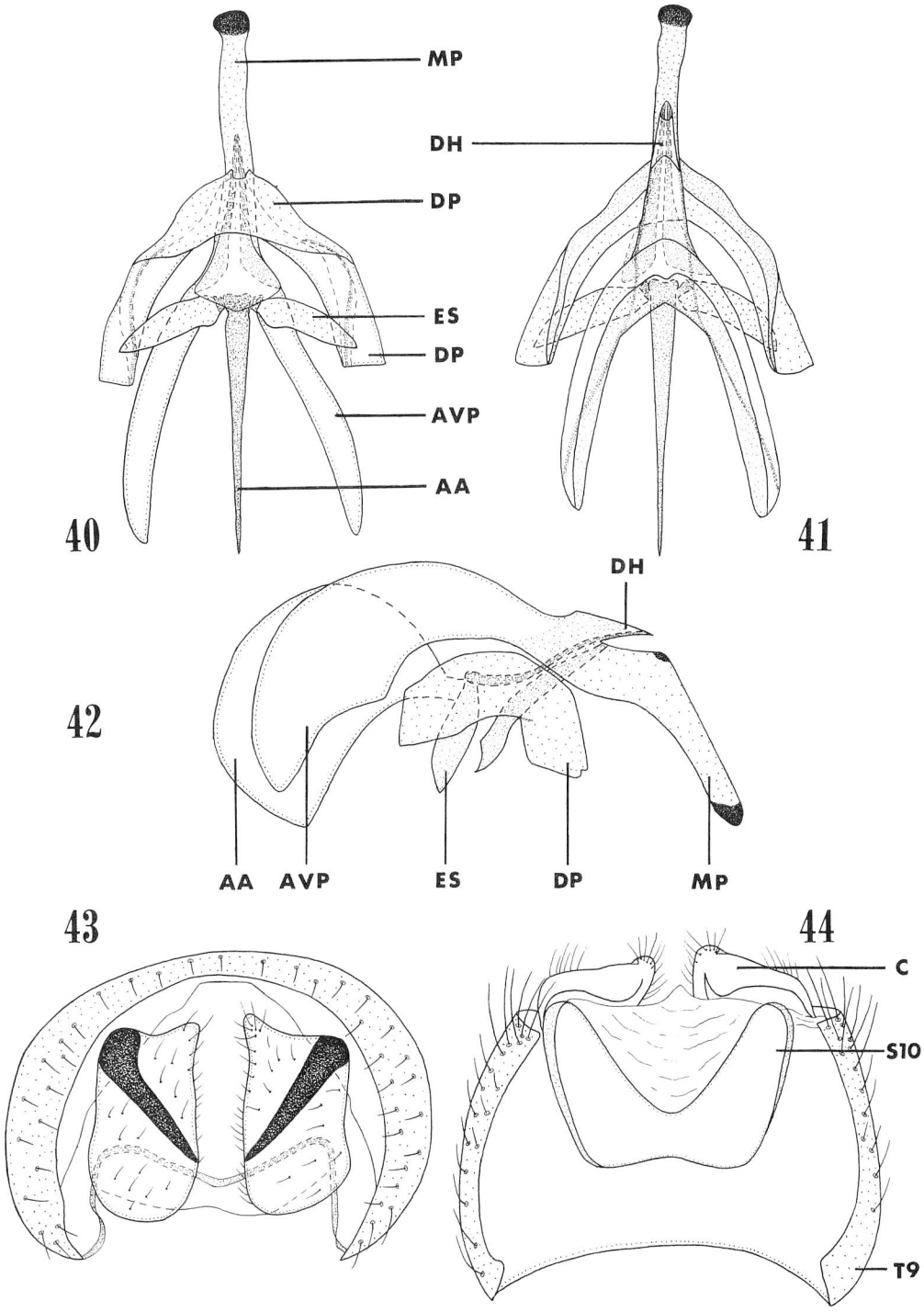
Thorax (Fig. 33): Dark brown to black, with following pale yellow parts: humeral callus, rectangular spot behind humeral callus, rather quadrate spot above posterior part of mesopleuron, rather small triangular spot including posterior callus, posterior border of scutellum (which is often indistinct), area around anterior spiracle, propleuron, hypopleuron (except lower end), and metasternum (except a pair of stripes whose inner margins are strongly concave behind middle); thorax with pale and black pile which is short on mesoscutum and scutellum (except posterior border) and long and erect on metasternum; black pile is confined to scutellum (except posterior border), black parts of mesoscutum and metasternum, and anterior part of mesopleuron; pale gray pollen is more distinct on meso-, sterno-, and upper part of pteropleuron.

Wing: Membrane faintly tinged with brown; costal and subcostal cells slightly darker; veins dark brown to black; halter yellowish brown and knob creamy yellow; Y 1.6–1.9 times as long as X; Z 0.2–0.3 times as long as Y and 0.8–1.1 times as long as A; C 0.8–1.3 times as long as B; N=8.

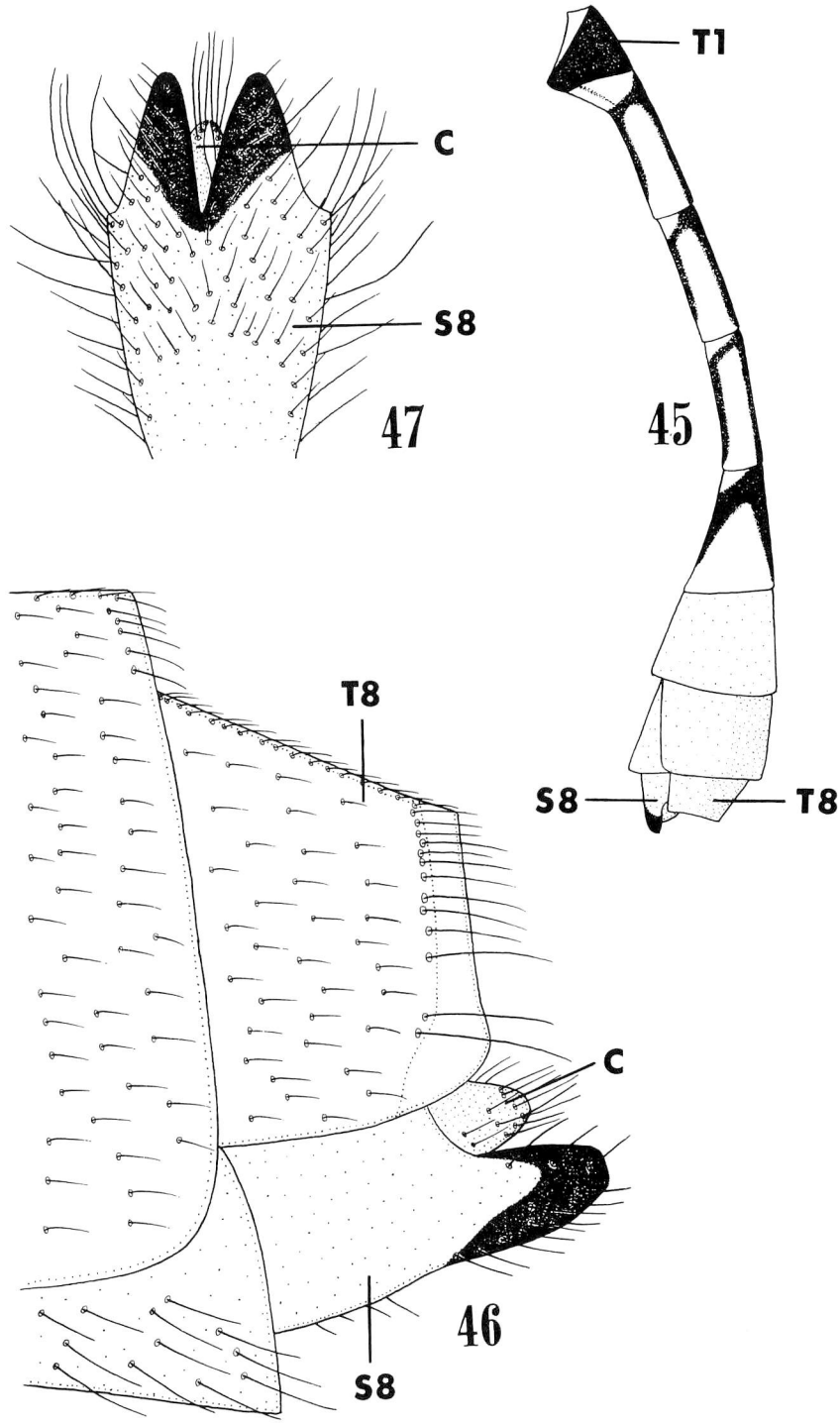
Legs (Fig. 35): Yellowish brown; hind coxa and hind trochanter dark brown to black; hind tarsomeres 1–5 and apex of hind tibia blackened; basal over 1/2 (except basal portion) of hind tibia darkened; fore femur (except apical portion and base), fore and mid tarsomeres 3–5 (or 4–5), outer basal part of mid coxa, mid femur (except apical portion), and often mid tibia (except base and apex) more or less darkened; mid coxa with some short black pile and hind coxa with short pale pile; fore and mid femora, and hind femur (except anterior and ventral surfaces) with short recumbent black pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 35 (34–35) : 38 (37–38) : 17 (16–18) : 8 (7–8) : 6 (5–6) : 4 (3–5) : 5 (5–6), of mid leg 38 (37–39) : 44 (43–46) : 15 (14–16) : 7 (7–8) : 5 (5–6) : 4 (4) : 5 (5–6), of hind leg 100 : 106 (101–111) : 52 (49–55) : 26 (24–27) : 19 (17–20) : 10 (10–11) : 8 (7–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (8–10) : 8 (7–9) : 5 (4–6) : 4 (3–4) : 3 (3); N=8.

Abdomen: Yellowish brown; tergum 1 black; middle of dorsum more or less darkened; each of terga 2–5, 2–6, or 2–7 with lateral black stripe; tergum 1 with black pile which is longer and erect on sides but bocomes pale on posterolateral part; rest of abdomen with black and pale yellow short recumbent pile.

Male genitalia (Figs. 37–44): Fused gonocoxites (not flattened) in ventral view roughly as long as wide, rather triangular, with anterior margin concave, and with apex bluntly pointed. Gonostylus running dorsally, tapering apically, very long (but shorter than gonocoxite), with ventral margin concave, and with blackened tip which is curved ventrally. In posterior ventral plate, median process almost parallel-sided; median process in lateral view running dorsally at apical portion and angulate opposite apex of distiphallus; paired lateral processes absent. Mid-posterior part of dorsal plate rather trapezoid, and protruded vertically (dor-



Figs. 40–44. *Systropus excisus* (ENDERLEIN), male from Korea; 40–42, Aedeagus complex, dorsal, ventral and lateral views; 43–44, tergum 9, cerci and sternum 10, posterior and ventral views.



Figs. 45–47. *Systropus excisus* (ENDERLEIN), female from Taiwan. 45, Abdomen, lateral view; 46, apex of abdomen, lateral view; 47, apical portion of sternum 8, ventral view.

sally). Tergum 9 (not flattened) rectangular, wider than long, and without posterolateral process. Cercus in posterior view roughly rectangular, and with blackened tubercle which starts from dorsolateral corner, tapers ventrally and ends before ventral inner corner. Sternum 10 more or less W-shaped. Specimens dissected: 2♂♂, Mt. Sudo-san (300–500 m), Kyongsangpuk-do, Korea, 21–22. viii. 1990, A. NAGATOMI.

Length: Body 11.6–16.0 mm; wing 6.4–8.5 mm; hind femur 4.3–5.4 mm.

Female. Similar to male except as follows: Head: In 2 specimens measured, half width of head 1.0–1.1 times distance from antenna to median ocellus, 1.9–2.1 times width of face at lowest portion from a direct frontal view; distance from ridge below proboscis to antenna 1.3 times distance from antenna to median ocellus; antennal segment 1, 0.9–1.0 times as long as distance from ridge below proboscis to antenna.

Legs: Relative lengths of segments of fore leg 34 (34) : 37 (36–37) : 18 (18) : 8 (7–8) : 5 (5) : 4 (3–4) : 5(5), of mid leg 38 (37–38) : 43 (42–43) : 16 (16) : 11 (7–14) : 5 (5) : 4 (3–4) : 5 (5), of hind leg 100 : 107 (105–108) : 52 (51–53) : 26 (26) : 19 (18–19) : 11 (10–11) : 8 (8) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsemeres 1–3, 10 (9–10) : 8 (7–8) : 5 (5) : 3 (3) : 3 (3); N=2.

Abdomen: Apical part of sternum 8 consisting of two black lamellae which are yellowish brown in basal portion and which are rather angulate at outer (=dorsal) apex.

Length: Body 13.4–13.9 mm; wing 7.7–8.0 mm; hind femur 4.7–4.8 mm.

The specimens from Taiwan (Figs. 34, 36, 45–47)

Similar to the specimens from Korea except as follows: Male. Head: In 2 specimens measured, half width of head 4.4–4.8 times width of frons just above antenna and 2.7–2.8 times width of face at upper end of clypeus; relative lengths of antennal segments 1–3, 261 (253–269) : 100 : 232 (231–233) and their relative widths (in lateral view) 20 (19–20): 26 (25–27) : 41 (40–41).

Thorax (Fig. 34): Pale yellow spot behind humeral callus triangular and larger in extent than in the specimens from Korea.

Wing: In 2 specimens measured, Z 1.3 times as long as A.

Legs (Fig. 36): In hind tibia, apical black part longer than wide and longer than in specimens from Korea, and yellow part near apical portion is shorter than in specimens from Korea or often confined to ventral part; relative lengths of segments of fore leg 36 (35–36) : 38 (38) : 17 (16–17) : 8 (8) : 5 (5) : 4 (4) : 6 (5–6), of mid leg 38 (38) : 44 (43–44) : 14 (14) : 8 (7–8) : 5 (5) : 4 (4) : 6 (5–6), of hind leg 100 : 105 (104–106) : 50 (48–51) : 25 (24–26) : 17 (16–17) : 9 (8–9) : 8 (8) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (9) : 8 (8) : 6 (5–6) : 4 (3–4) : 3 (3); N=2.

Abdomen: Pile on posterolateral part of tergum 1 not pale but black (this may be so in some specimens from Korea).

Male genitalia: No significant difference is seen between the specimens from Korea and Taiwan. Specimen dissected: 1♂, Chiepen, SE Taiwan, 4. x. 1971, N. FUKUHARA.

Length: Body 14.3–15.4 mm; wing 7.2–7.3 mm; hind femur 5.1–5.4 mm.

Female. Similar to male except as follows: Head: In 2 specimens measured, half width of head 3.7–4.1 times width of frons just above antenna and 2.6–2.9 times (as in ♂) width of

face at upper end of cylpeus; relative lengths of antennal segments 1–3, 223 (217–229) : 100 : 224 and their relative widths (in lateral view) 18 (17–18) : 23 (22–24) : 41 (antennal segment 3 is based on 1 specimen).

Wing: In 2 specimens measured, Z 1.0–1.3 times as long as A.

Legs: Relative lengths of segments of fore leg 36 (36) : 39 (38–39) : 18 (18) : 8 (8) : 6 (5–6) : 4 (4) : 5 (5), of mid leg 39 (38–39) : 44 (43–45) : 16 (15–16) : 8 (7–8) : 5 (5): 4 (4) : 5 (5), of hind leg 100 : 108 (106–109) : 50 : 24 : 18 : 10 : 8 and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10 (9–10) : 8 (8) : 5 : 4 : 4; N=2 (in 1 specimen, hind tarsomeres 1–5 lacking).

Abdomen (Figs. 45–47): Pile on posterolateral part of tergum 1 pale as in specimens from Korea (this may be so in some male specimens from Taiwan).

Length: Body 15.2–15.8 mm; wing 8.0–8.6 mm; hind femur 5.1–5.3 mm.

Distribution. S. China (Kwangtung), Taiwan, and Korea (new record).

Specimens examined (10♂♂, 4♀♀): KOREA (8♂♂, 2♀♀): 8♂♂, 2♀♀, Mt. Sudo-san (300–500 m), Kyongsangpuk-do, 21–25. viii. 1990, A. NAGATOMI. TAIWAN (2♂♂, 2♀♀): 1♀, Kôshun, 25. iv.–25. v., 1918, J. SONAN, K. MIYAKE, M. YOSHINO; 2♂♂, 1♀, Chiepen, SE Taiwan, 4. x. 1971, N. FUKUHARA.

One of us (EVENHUIS) has examined 2♂♂ (Kôshun, Kankau, Taiwan, v. 1912, H. SAUTER) currently in the collection of the Bishop Museum. These 2 specimens are labeled as "*Systropus lamatus* BEZZ." in BEZZI's handwriting. *S. lamatus* is a manuscript name (see ROHLFIEN and EWALD, 1979: 222).

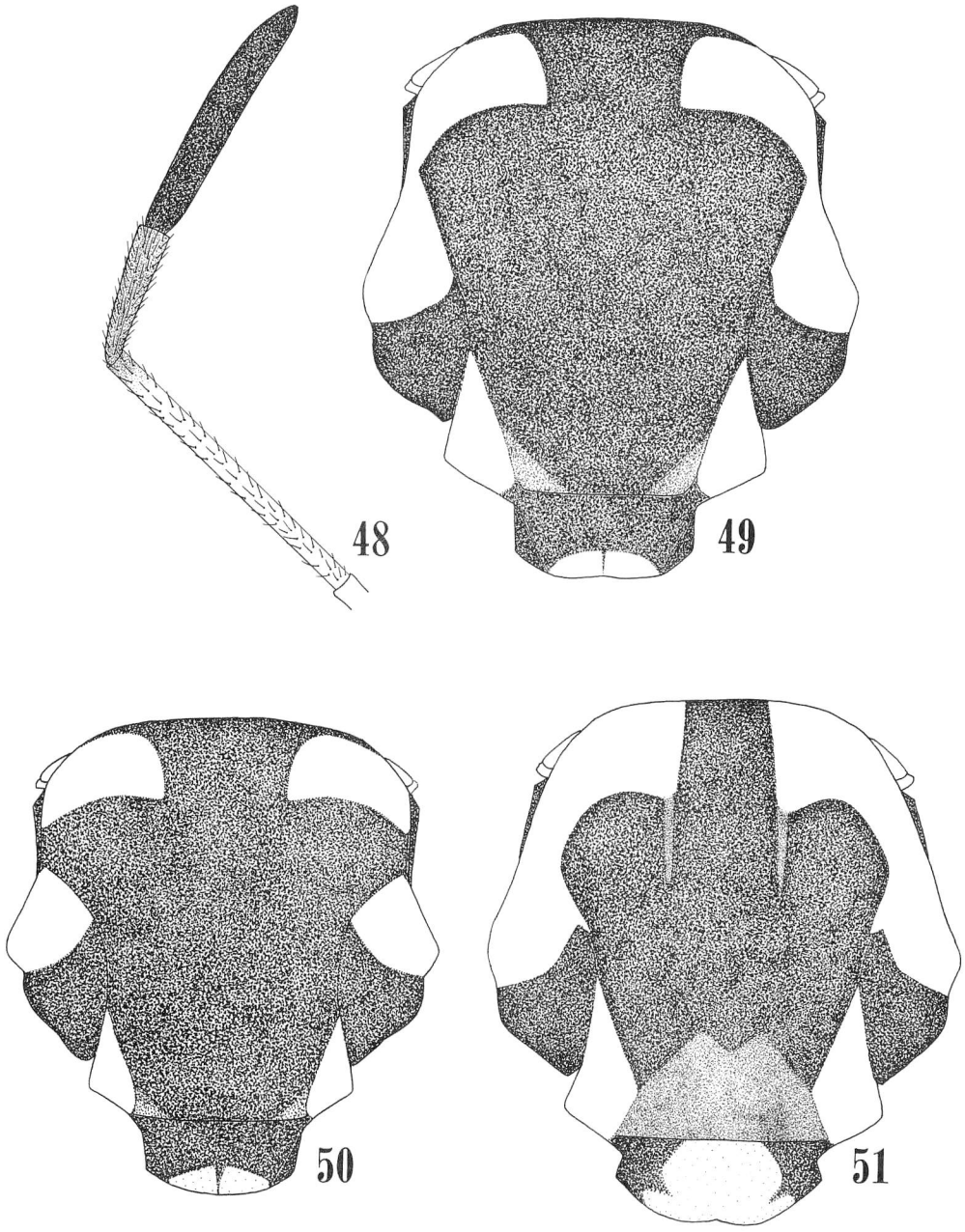
Systropus excisus yaeyamensis subsp. n.

(Figs. 48–54)

The specimens of the Yaeyama Islands (Japan) differ in some respects from those of Korea and Taiwan (see Key 13). It is here judged that they represent a new subspecies of *excisus*.

Male. Head (Fig. 48): Yellowish brown; occiput (except mid-lower part below neck), antennal segments 2–3 (including apex of segment 1), and proboscis (except ventral basal part) dark brown to black; clypeus may be darkened; occiput pale gray pollinose; occiput, cheek, mid-upper face, palpus, and antennal segment 1 (except apical portion) pale pilose; antennal segment 2 (including apical portion of segment 1) with black hairs; half width of head equal to distance from antenna to median ocellus, 1.9–2.1 times width of face at lowest portion from a direct frontal view, 3.8–4.4 times width of frons just above antenna, 2.5–2.7 times width of face at upper end of clypeus, which is 1.5–1.7 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.1–1.2 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 245 (233–258) : 100 : 220 (205–247) and their relative widths 19 (18–21) : 21 (14–24) : 39 (36–42); antennal segment 1, 1.0–1.1 times as long as distance from ridge below proboscis to antenna; N=4.

Thorax (Figs. 49, 50, 52, 53): Dark brown to black, and pale gray pollinose; hypopleura+metasternum (except anterior and lower parts of hypopleuron), posterior part (except sides)

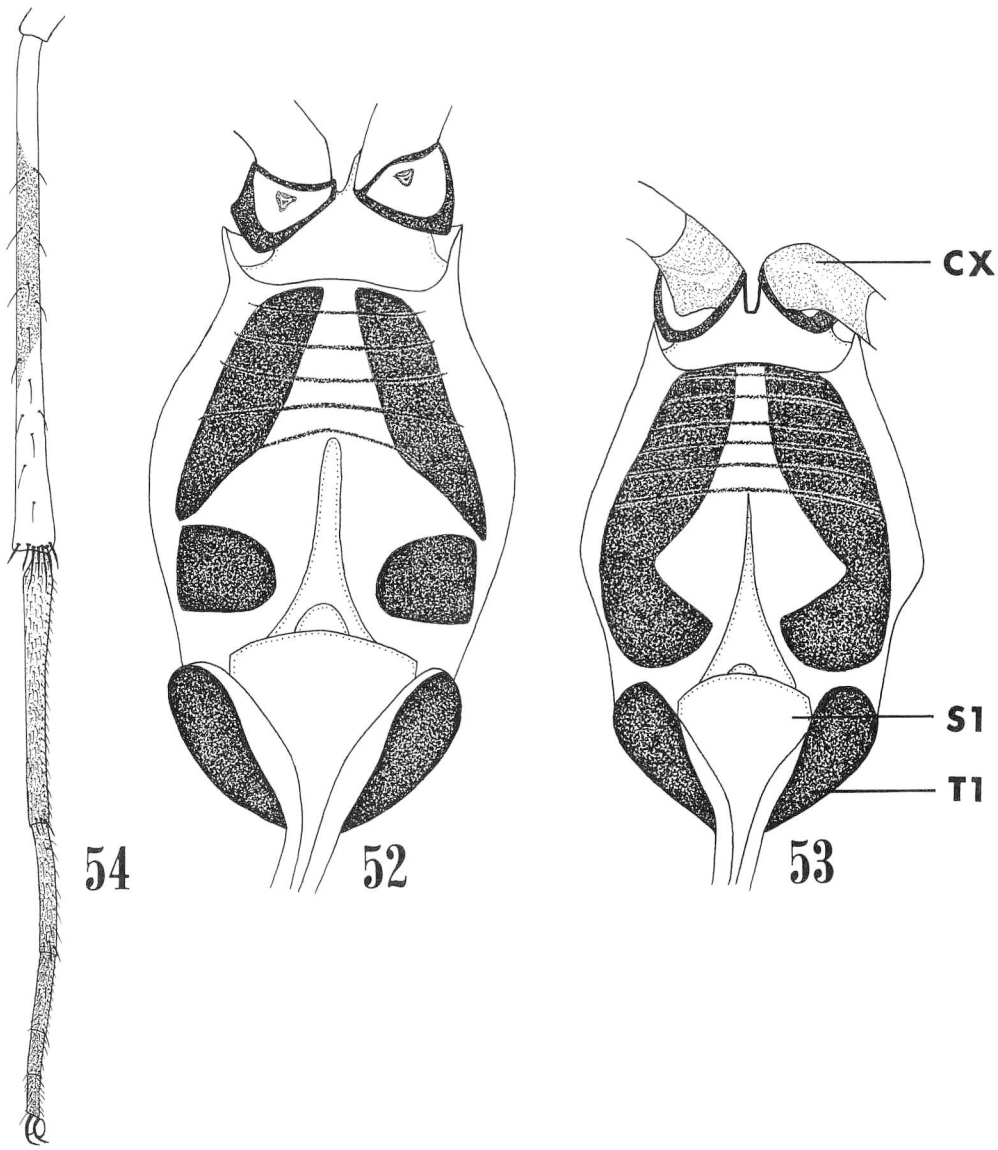


Figs. 48–51. *Systropus excisus yaeyamensis* subsp. n. 48, Antenna; 49–51, mesoscutum and scutellum; 48–50, male; 51, female.

of scutellum, lateral border of mesoscutum (including humeral and posterior calli), area around anterior spiracle, and propleuron yellow to yellowish brown; metasternum with one or two pairs of broad black stripes or spots, of which the anterior pair is elongate (when one stripe is divided into two spots) or each inner margin (when one pair of stripes are present) is strongly concave behind middle; lateral yellow mesoscutum stripe protruding inward behind

humeral callus and before wing base and widely interrupted by a triangular black patch above wing base and narrowly margined with black above mesopleuron; in 1♂ of 4♂♂, three yellow spots are isolated on lateral border of mesoscutum; median more pollinose broad stripe especially obscure before scutellum; pile on mesoscutum and scutellum largely black, pile on pleuron and metasternum pale, but that on upper part of mesopleuron and on black spots in metasternum black; upper part of sternopleuron with black hairs.

Wing: Membrane brown to dark brown fumose; veins dark brown to black; halter yellowish brown; in 4 specimens measured, Z 0.4 times as long as Y and 1.4–1.5 times as long as A.



Figs. 52–54. *Systropus excisus yaeyamensis,* subsp. n., male. 52–53, Metasternum, etc., posteroventral view; 54, hind tibia and tarsus, anterior view.

Legs (Fig. 54): Yellowish brown; in hind leg, tarsus (except posteroventral surface of tarsomere 1) blackened, basal over 1/2 of tibia covered with black tomentum, tip of femur black at dorsal part, and coxa and trochanter partly darkened; mid coxa may have a darker patch on posterior surface; hind coxa with pale recumbent pile; fore and mid coxae with short inconspicuous pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 36 (35–37) : 39 (38–39) : 18 (17–19) : 8 (8–9) : 6 (6) : 4 (4) : 6 (5–6), of mid leg 39 (38–40) : 45 (43–48) : 15 (14–16) : 8 (7–8) : 5 (5–6) : 4 (4) : 5 (5–6), of hind leg 100 : 106 (102–109) : 52 (52–53) : 26 (25–26) : 19 (18–20) : 10 (9–10) : 9 (8–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (9–10) : 9 (8–11) : 6 (5–6) : 4 (3–5) : 3 (3); N=4.

Abdomen: Yellowish brown; tergum 1 black, often excepting anterior part which is reddish brown; dorsal parts of terga 7–8 may be darker; terga 2–5 (or 2–6) with lateral black stripes which do not extend to anterior and posterior margins; tergum 1 with black hairs; segments 2–8 with tomentum-like, chiefly pale yellow pile which becomes black on dorsal (or middle) surfaces of terga 2–4 & 7–8 (sometimes 2–8).

Male genitalia: No significant difference is seen among the specimens from Korea, Taiwan, and Japan (Yaeyama Is.). Specimens dissected: 1♂, Komi, Iriomote I., 8. vi. 1977, A. NAGATOMI; 1♂, Bannadake, Ishigaki I., 3. vi. 1977, A. NAGATOMI; 1♂, Ôtomi, Iriomote I., 24. v. 1981, A. NAGATOMI.

Length: Body 16.3–20.0 mm; wing 8.5–10.0 mm; hind femur 5.4–6.6 mm.

Female. Similar to male except as follows: Head: In 1 specimen measured, half width of head 3.6 times width of frons just above antenna; width of face at upper end of clypeus 1.4 times width of frons just above antenna; relative lengths of antennal segments 1–3, 225 : 100 : 229 and their relative widths (in lateral view) 19 : 21 : 38.

Thorax (Fig. 51): In mesoscutum, black parts are confined as follows: three broad stripes, of which the lateral one runs from far behind humeral callus to behind wing base and tapering posteriorly, and the median stripe runs from the anterior margin of mesoscutum to opposite wing base and almost parallel-sided; a triangular patch above wing base; scutellum yellowish brown, except for anterolateral parts; pale yellow pilose areas on mesoscutum and scutellum more extensive than in male.

Wing: In 1 specimen measured, Z 1.2 times as long as A.

Legs: Relative lengths of segments of fore leg 37 : 39 : 20 : 9 : 5 : 4 : 5, of mid leg 40 : 46 : 18 : 8 : 5 : 4 : 4, of hind leg 100 : 106 : 53 : 25 : 18 : 11 : 9 and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10 : 9 : 6 : 4 : 4; N=1.

Length: Body 23.2 mm; wing 12.0 mm; hind femur 7.2 mm.

Distribution. Japan (Yaeyama Is.).

Japanese name: Yaeyama-haraboso-tsuriabu.

Holotype: ♂, Nakamagawa-rindo, Iriomote I., 3. vii. 1988, T. MORIYAMA.

Paratypes (3♂♂, 1♀): Ishigaki I. : 1♂, Bannadake, 3. vi. 1977, A. NAGATOMI; 1♀, Omotodake, 4. vi. 1977, A. NAGATOMI. Iriomote I.: 1♂, Komi, 8. vi. 1977, A. NAGATOMI; 1♂, Ôtomi, 24. v. 1981, A. NAGATOMI.

The holotype and paratypes are deposited in Kagoshima University, Kagoshima.

Systropus flavicornis (ENDERLEIN)

Cephenius flavicornis ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 79. Type-locality: "Canton", S. China.

S. flavicornis is not recorded from Taiwan. However, sp. A from Taiwan in this paper is possibly identical with *flavicornis*.

"♀ mit langem (ca. 1 mm), spitzem, pfriemenartigem schwarzem Dorn" (after ENDERLEIN, 1926).

Length (1♂, 1♀): Body 26 mm; wing 16 mm (after ENDERLEIN, 1926).

Distribution. S. China.

Systropus flavipectus (ENDERLEIN)

Cephenius flavipectus ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 85. Type-locality: Sikkim, India.

No specimens were available for study. However, sp. B (1♂) from Thailand in this paper may possibly be identical with *flavipectus* whose female is unknown.

Length: Body 18 mm; wing 10 mm (after ENDERLEIN, 1926).

Distribution. India (Sikkim).

Systropus formosanus (ENDERLEIN)

Cephenius formosanus ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 77. Type-locality: Toyenmongai, near Tainan, South Taiwan.

No specimen is on hand. However, sp. C from Taiwan and Japan may possibly be identical with *formosanus* whose male is unknown.

S. formosanus is separated from *studyi* (ENDERLEIN, 1926; Zool. Jb., Abt. Zool. Physiol., 42: 426 [♂, ♀]) (S. China), *chinensis* BEZZI, 1905 (N. & S. China), *acuminatus* (ENDERLEIN, 1926) (Taiwan) by having the female sternum 8 with "zwei seitlichen Spitzenecken." In *studyi, chinensis* and *acuminatus,* the female sternum 8 is "hinten nicht eingebuchtet (dreieckig zugespitzt)" (after ENDERLEIN, 1926).

Length (♀): Body 25 mm; wing 13 mm (after ENDERLEIN, 1926).

Distribution. Taiwan.

Systropus hoppo MATSUMURA

(Figs. 55–72)

Systropus hoppo MATSUMURA, 1916, Thous. Ins. Jap., Addit., 2, p. 285. Type-locality: Hoppo, Taiko-

kan, Taiwan.

Systropus (*Systropus*) *tetradactylus* EVENHUIS, 1982, Pac. Insects, 24: 32. Type-locality: 20 Km S of Taipei, Tao Ynan Rd, 155 m, Taiwan. **New Synonymy.**

Examination of the holotype of *tetradactylus* EVENHUIS shows that it is identical with *hoppo*. The shape of cercus in *tetradactylus* (see fig. 6 in EVENHUIS, 1982) may differ from that in *hoppo,* but this is evidently due to incomplete condition of the examined specimen.

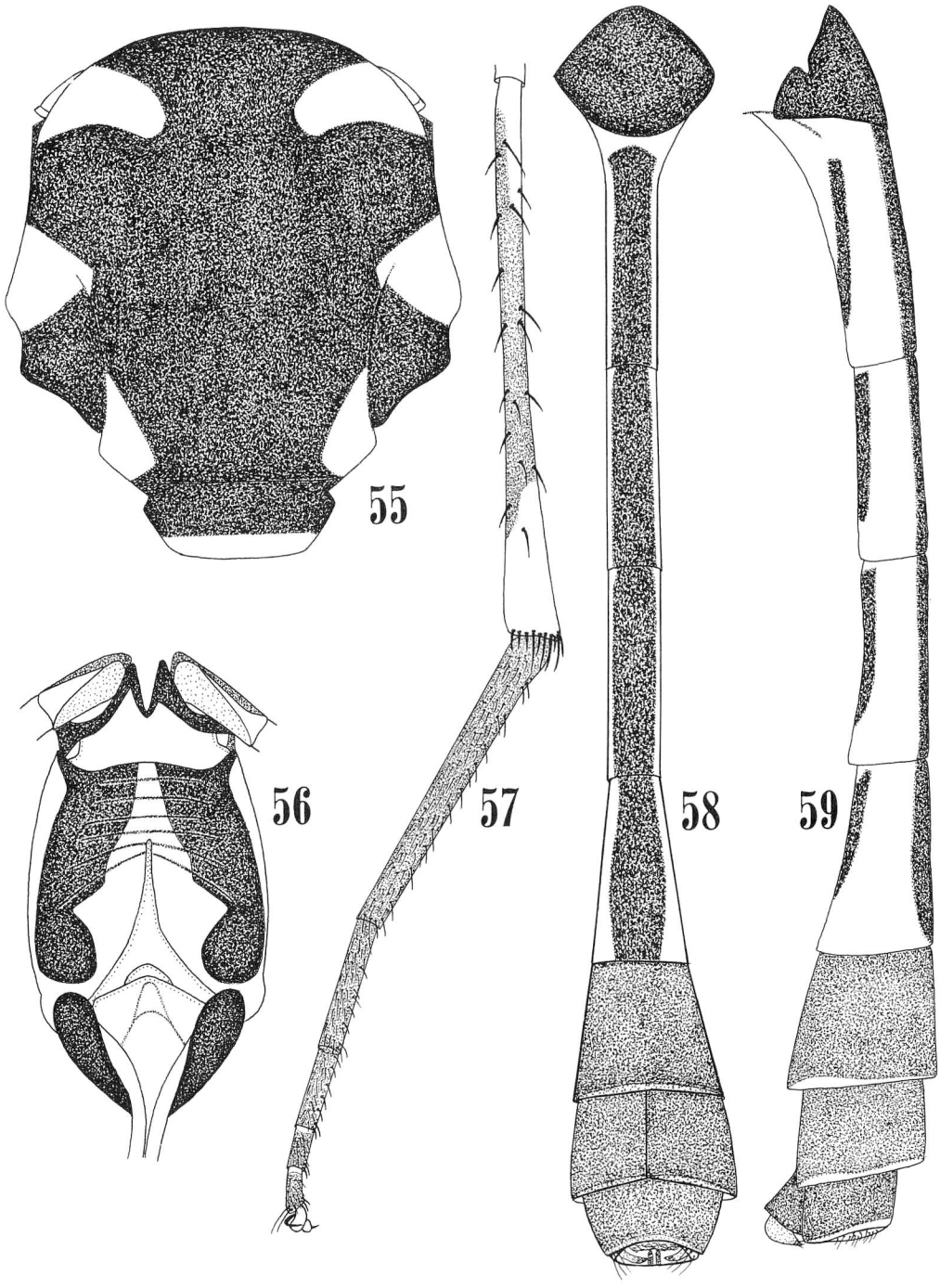
S. hoppo is characterized as follows: Abdominal terga 6–8 in both sexes more conspicuously widened laterally (Figs. 58, 70); median process of posterior ventral plate (in male genitalia) divided into two lobes at apical portion (Figs. 63, 64); apical part of female sternum 8 large, lamellate and forming almost equilateral triangle (Fig. 72).

Male. Head: Yellowish brown, but occiput (except area below neck), antenna (except basal part of segment 1 which varies in length with individual), and proboscis (except ventral basal part) dark brown to black; frons, face, cheek and occiput with pale gray pollen; mid-upper face, cheek, and occiput pale pilose and antennal segments 1–2 black haired; half width of head 1.0–1.1 times distance from antenna to median ocellus, 1.6–1.8 times width of face at lowest portion from a direct frontal view, 3.7–4.3 times width of frons just above antenna, 2.2–2.8 times width of face at upper end of clypeus, which is 1.4–1.7 times width of frons just above antenna; relative lengths of antennal segments 1–3, 259 (235–279) : 100 : 198 (176–221) and their relative widths (in lateral view) 20 (17–21) : 23 (20–25) : 39 (35–43); antennal segment 1, 0.9–1.0 times as long as distance from ridge below proboscis to antenna; N = 10.

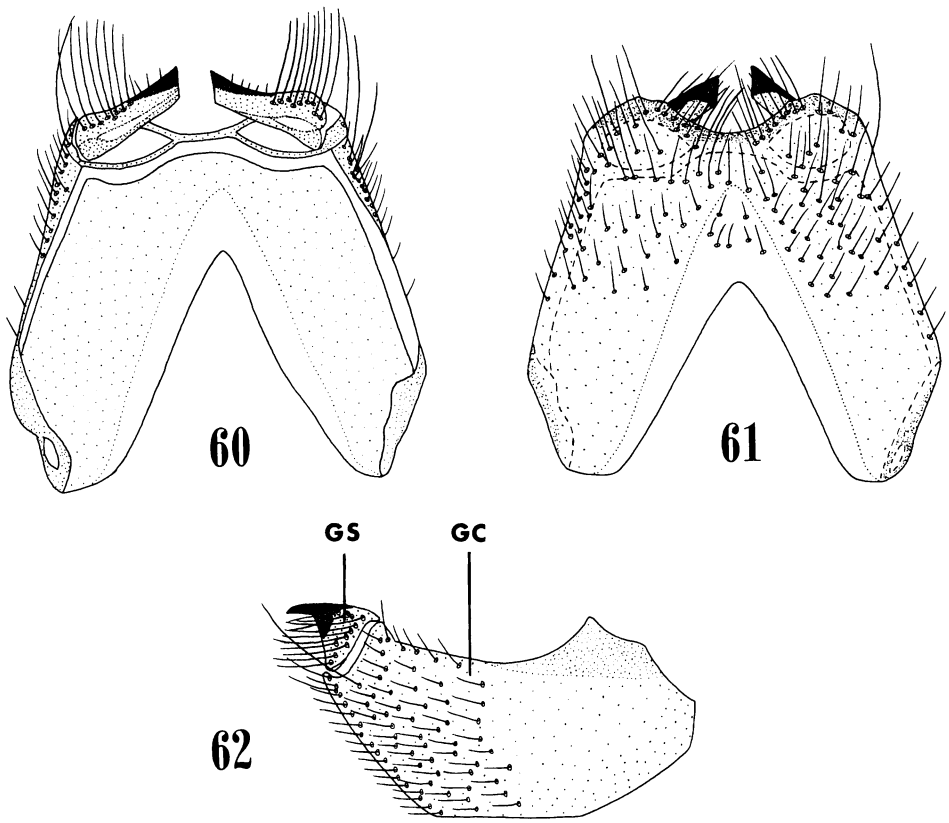
Thorax (Figs. 55–56): Dark brown to black, with following yellowish brown parts: hypopleura (except anterior and lower borders), metasternum (except one or two pairs of large stripes or spots), propleuron, area around anterior spiracle, upper (or posteroupper) part of pteropleuron, humeral callus, an elongate spot behind humeral callus, a triangular spot above posterodorsal corner of mesopleuron, a triangular spot including posterior callus, and posterior border of scutellum; pale gray pollen may be more distinct on median vitta of broad black part (in mesoscutum), meso-, and upper part of pteropleuron, etc.; thorax with pale and black pile.

Wing: Membrane faintly tinged with dark brown; veins brown to dark brown; halter yellowish brown, and posterior surface of knob with a distinct blackened area (apical border of knob widely yellowish brown); Y 1.9–2.4 times as long as X; Z 0.1–0.2 times as long as Y and 0.6–0.9 times as long as A; C 0.4–0.7 times as long as B; N = 10.

Legs (Fig. 57): Yellowish brown; mid and hind coxae and trochanters partly dark brown; hind tibia (except basal and apical portions), hind tarsomeres 1–5 (usually excepting posteroventral surface of tarsomere 1), fore tarsomeres 4–5 (or 3–5), and mid tarsomeres 4–5 (often including apex of tarsomere 1) darkened or blackened; mid and hind femora (sometimes as well as fore femur) partly darkened; black coloration on femur, tibia and tarsus is partly due to dense short black pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 41 (39–42) : 43 (42–45) : 22 (21–23) : 7(6–8) : 6 (5–6) : 4 (4) : 6 (5–6), of mid leg 45 (44–47) : 52 (50–56) : 18 (17–19) : 8 (7–8) : 6 (5–6) : 4 (4–5) : 6 (5–6), of hind leg 100 : 108 (106–111) : 60 (58–62) : 24 (23–27) : 17 (15–25) : 8 (7–9) : 9 (8–10) and in hind leg



Figs. 55–59. *Systropus hoppo* MATSUMURA, male. 55, Mesoscutum and scutellum; 56, metasternum, etc., posteroventral view; 57, hind tibia and tarsus, anterior view; 58–59, abdomen, dorsal and lateral views.

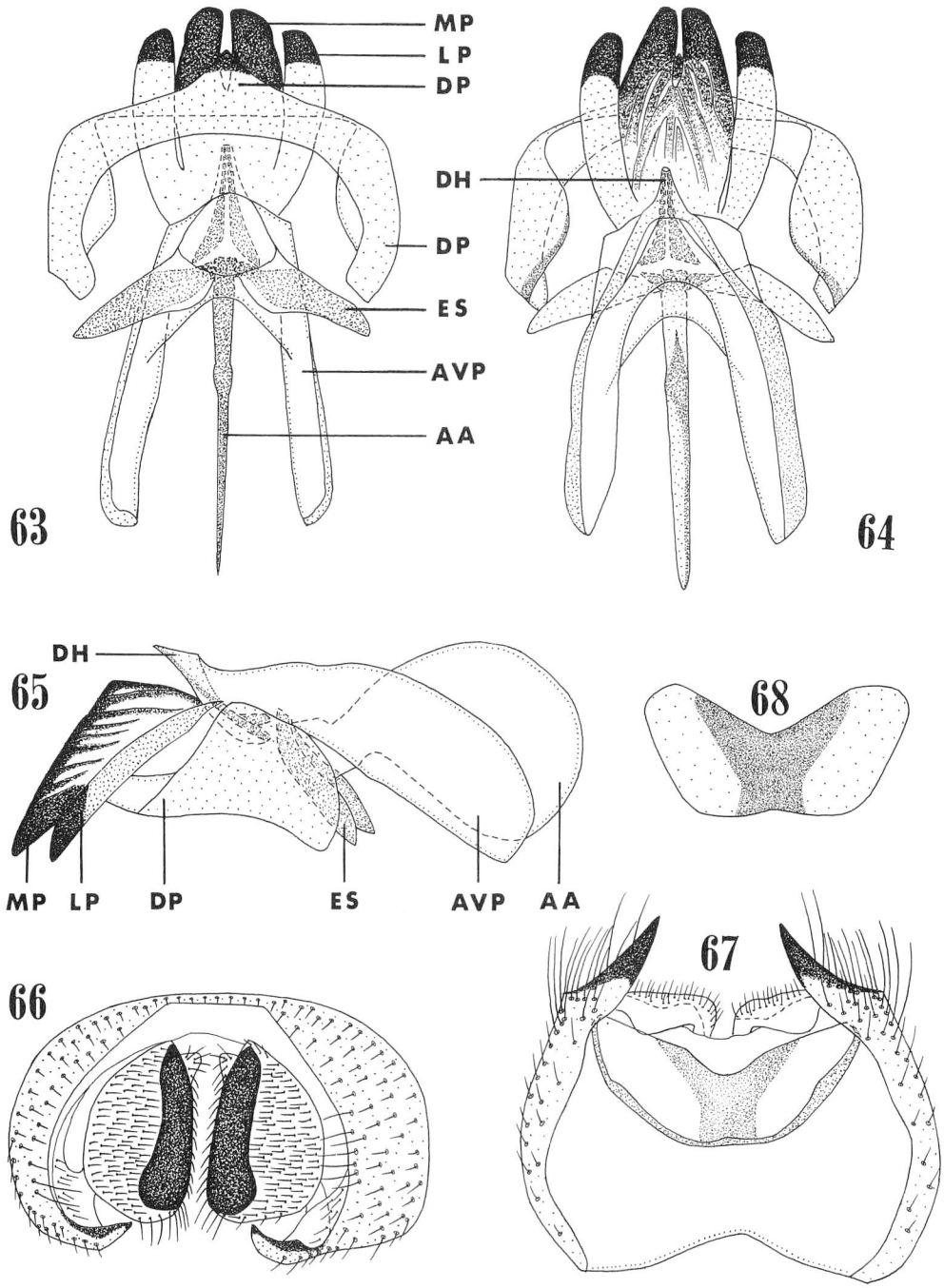


Figs. 60–62. *Systropus hoppo* MATSUMURA, male; gonocoxites and gonostylus, dorsal, ventral and lateral views.

viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10 (9–10) : 10 (9–10) : 6 (5–7) : 4 (3–4) : 3 (2–3); N = 10.

Abdomen (Figs. 58, 59): Yellowish brown; tergum 1 dark brown to black; each of terga 2–5 with a median black stripe and a lateral black stripe; terga 6–8 and sterna 6–8 darkened or largely so; terga 2–4 flattened laterally but terga 5–8 (especially 6–7) widened laterally; abdomen with pale (or pale yellow) and black short recumbent pile.

Male genitalia (Figs. 60–68): Fused gonocoxites (not flattened) nearly as long as wide, widest before middle, with anterior margin deeply concave, with posterior margin gently concave, and with V-shaped pale anterior part. Gonostylus with apex pointed; gonostylus in dorsal view rather rectangular and in lateral view with apical portion abruptly thin. In posterior ventral plate, median process (beyond distiphallus) divided into two log-like blackened lobes at apical portion, and paired lateral processes log-like, blackened at apical portion, and not extending beyond apices of paired median lobes; median process rugose except apical portions of paired lobes. In dorsal plate, mid-posterior part protruded triangularly and blackened at apex. Tergum 9 (not flattened) wider than long, with lateral margins convex, and with posterolateral process whose apical portion is blackened and pointed. Cercus in posterior view with outer margin arched, with inner margin nearly



Figs. 63–68. *Systropus hoppo* MATSUMURA, male. 63–65, Aedeagus complex, dorsal, ventral and lateral views; 66–67, tergum 9, cerci and sternum 10, posterior and ventral views; 68, sternum 10, dorsal view.

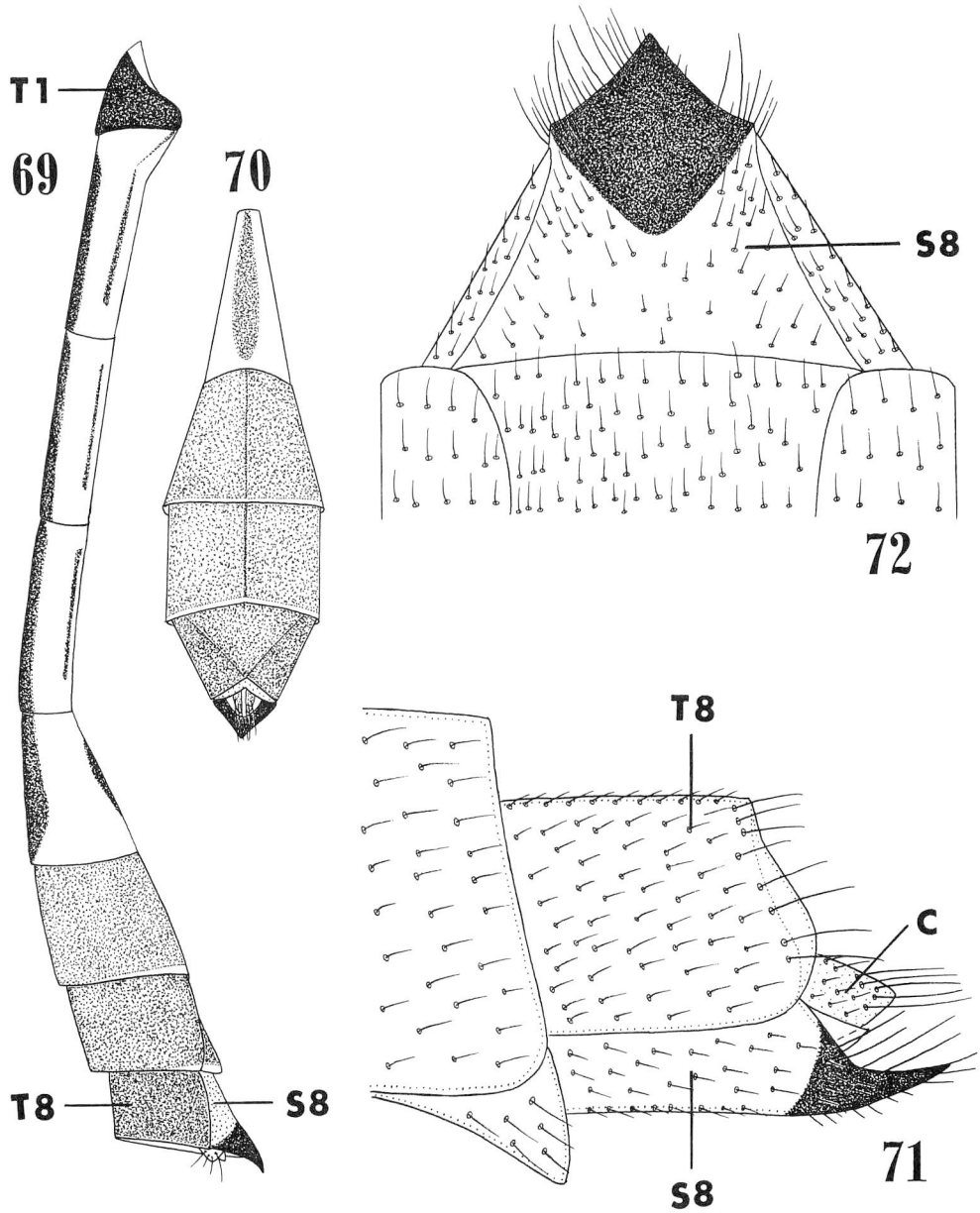
straight, and with blackened tubercle which is widened near ventral end and situated at inner margin of cercus. Sternum 10 band-like, darkened at middle, and with posterior margin gently concave. Specimens dissected: 1♂, Chiepen, SE Taiwan 4. x. 1971, N. FUKUHARA;

1♀, Tao-Nah, near Mao Lin, S. Taiwan, 30. v. 1986, K. BABA.

Length: Body 22.2–26.1 mm; wing 12.3–13.7 mm; hind femur 7.3–8.2 mm.

Female. Similar to male except as follows: Head: In 1 specimen measured, half width of head 1.9 times width of face at lowest portion from a direct frontal view; relative lengths of antennal segments 1–3, 275 : 100 : 233 and their relative widths (in lateral view) 21 : 25 : 42.

Legs: Relative lengths of segments of fore leg 39 : 44 : 20 : 6 : 5 : 3 : 5, of mid leg 45 : 53 : 17 :



Figs. 69–72. *Systropus hoppo* MATSUMURA, female. 69, Abdomen, lateral view; 70, abdominal terga 5–8 and sternum 8, dorsal view; 71–72, apex of abdomen, lateral and ventral views.

6:5:4:6, of hind leg 100:110:63:22:16:6:8 and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10:9:6:4:3; N=1.

Wing: In 1 specimen examined, one wing with vein R_4 having a minute aberrant vein at angulate part.

Abdomen (Figs. 69–72): Apical black part of sternum 8 large and almost equilateral triangular.

Length: Body 20.4 mm; wing 12.6 mm; hind femur 6.9 mm.

Distribution. Taiwan.

Specimens examined (10♂♂, 1♀): 1♂, no data; 1♂, Takeya, Horisha, 8. vii. 1940, A. AOKI; 2♂♂, Eboshiyama, Mt. Taiheizan, 25. vii. 1940, A. AOKI; 1♀, Tentsiang, E. Taiwan, 16, v. 1971, N. FUKUHARA; 3♂♂, Chiepen, SE Taiwan, 4–5. x. 1971, N. FUKUHARA; 1♂, Kôyô-onsen, 13. vi. 1976, H. MAKIHARA; 1♂, Tao Nah, near Mao Lin, S. Taiwan, 30. v. 1986, K. BABA; 1♂, Taipei, 16. vi. 1990, K. KIRITANI.

One of us (EVENHUIS) has examined the holotype of tetradactylus in the Bishop Museum.

Systropus joni sp. n.

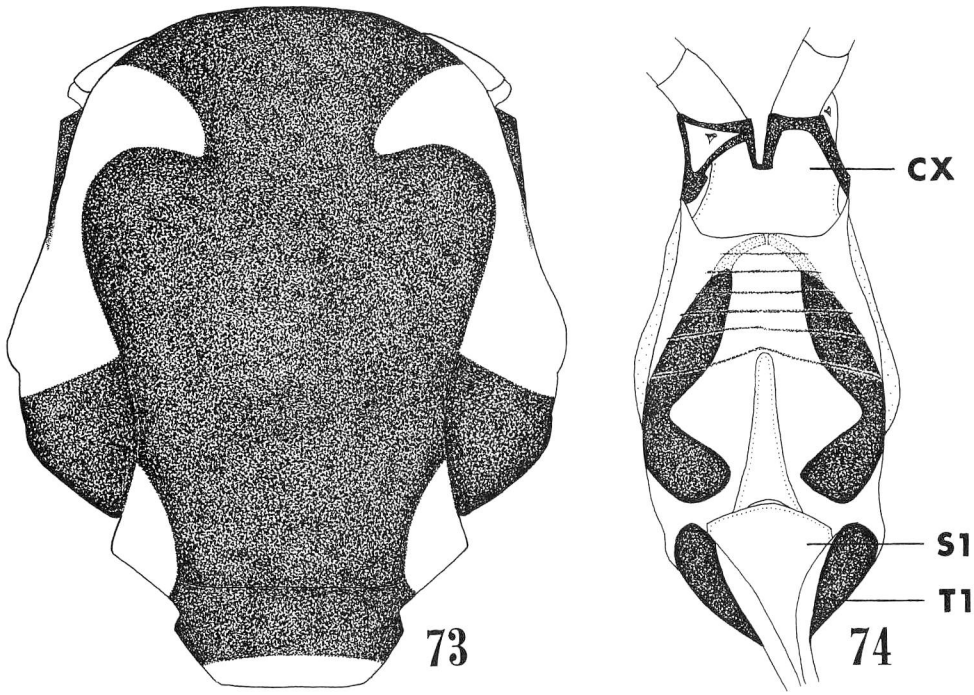
(Figs. 73–85)

S. joni has peculiar male genitalia (see couplet 4 of the key 15) and female sternum 8 (couplet 5 of the key 14). Among the Korean species, *joni* is easily distinguished from *excisus* (couplet 4 of the key 5).

Using ENDERLEIN's key (1926), *joni* runs to *mucronatus* (ENDERLEIN, 1926) from Sikkim but may be separated from it as follows: fore femur wholly yellow; yellow lateral border of mesoscutum interrupted by only one black patch above wing base. In *mucronatus*, basal half of fore femur darkened, and lateral border of mesoscutum with three isolated yellow spots.

ENDERLEIN (1926) wrote as to *mucronatus*, "Subgenitalplatte des ♀ in eine kraftige, lange, etwas nach oben gebogene Spitze ausgezogen." A direct comparison is needed between *joni* and *mucronatus*.

Male. Head: Yellowish white to yellowish brown, but occiput (except area below neck), antennal segments 2–3 (including apical portion of segment 1), and proboscis (except ventral basal part) dark brown to black; clypeus more or less darkened; face, cheek and occiput with pale gray pollen; mid-upper face, cheek, occiput, and palpus pale pilose; antennal segments 1–2 black haired; half width of head 0.9–1.0 times distance from antenna to median ocellus, 1.7–1.9 times width of face at lowest portion from a direct frontal view, 3.6–4.0 times width of frons just above antenna, 2.3–2.7 times width of face at upper end of clypeus, which is 1.4–1.7 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.1–1.2 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 206 (196–223):100:172 (161–176) and their relative widths (in lateral view) 15 (13–17):18 (16–20):31 (27–35); antennal segment 1, 1.0–1.1 times as long as distance from ridge below proboscis to antenna; N=6.

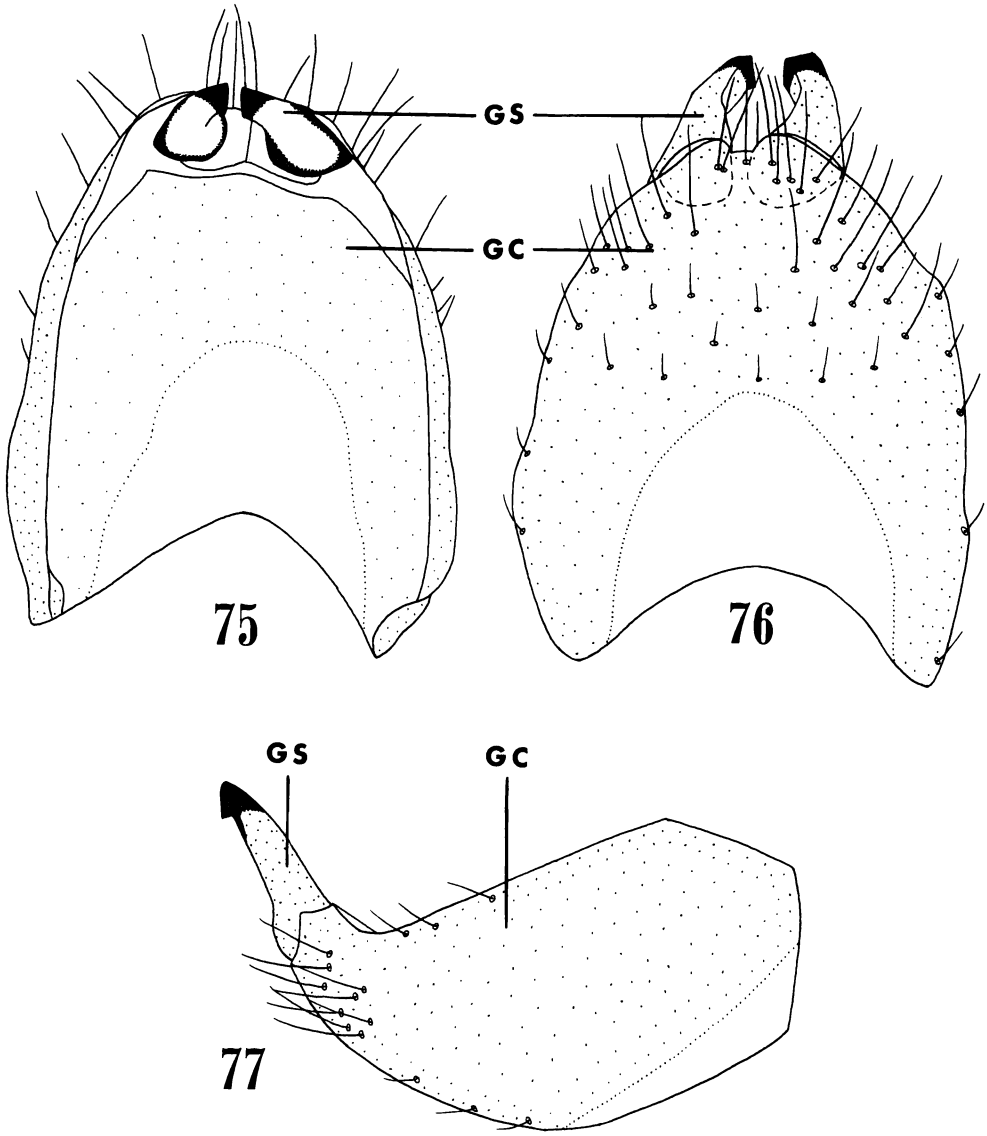


Figs. 73–74. *Systropus joni* sp. n., male. 73, Mesoscutum and scutellum; 74, metasternum, etc., posteroventral view.

Thorax (Figs. 73, 74): Dark brown to black, but with following yellowish brown parts: hypopleuron (except lower border), metasternum (except one or two pairs of stripes or spots), area around anterior spiracle, propleuron, lateral border of mesoscutum which is interrupted by black triangular patch before posterior callus and which is narrowed above middle of mesopleuron, and posterior border of scutellum; a black thin stripe is also present just above anterior about 1/2 of mesopleuron; pale gray pollen may be more distinct on black parts of pleuron; thorax with pale and black short hairs; pile on upper part of pteropleuron pale and longer and that on posterior black spots in metasternum black and longer.

Wing: Membrane faintly tinged with brown; apical portion of subcostal cell darker; veins dark brown to black; halter yellowish brown, and knob creamy yellow; Y 1.6–1.7 times as long as X; Z 0.3–0.4 times as long as Y and 1.1–1.8 times as long as A; C 1.0–1.1 times as long as B; N=6.

Legs: Yellowish brown; mid and hind coxae and hind trochanter partly dark brown to black; the following parts darkened or blackened due to short recumbent black pile: hind tibia (except apical portion and basal ventral part) and hind tarsus, fore and mid tarsomere 5 (or 4–5), mid femur (except apical portin) and sometimes hind femur (except ventral surface); relative lengths of segments (excluding coxa and trochanter) of fore leg 35 (34–36) : 38 (38–39) : 18 (18–19) : 9 (8–10) : 7 (6–7) : 4 (4–5) : 6 (6), of mid leg 39 (37–40) : 44 (43–44) : 16 (14–16) : 8 (8) : 6 (5–6) : 4 (4–5) : 6 (5–6), of hind leg 100 : 104 (102–109) : 54 (52–55) : 28 (27–29) : 20 (19–20) : 11 (10–11) : 9 (9–10) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (8–10) : 8 (8–9) : 6 (5–6) : 4 (3–4) : 3 (3–

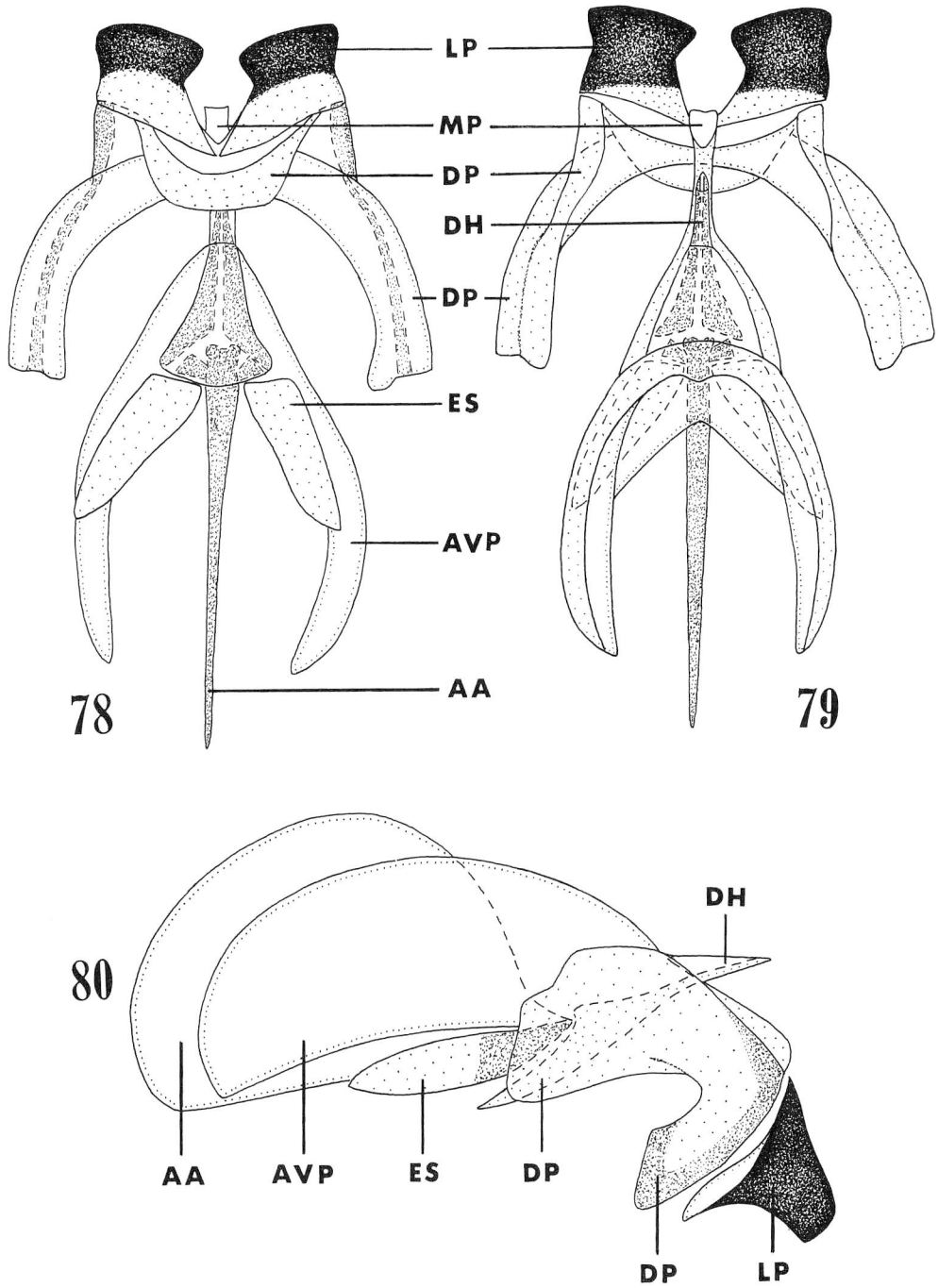


Figs. 75–77. *Systropus joni* sp. n., male; gonocoxites and gonostylus, dorsal, ventral and lateral views.

4); N=6.

Abdomen: Yellowish (or reddish) brown; tergum 1 black; terga 2–5 with blackened dorsal stripes (which often disappear due to loss of black recumbent pile) and blackened lateral stripes; tergum 1 with black pile which becomes longer and erect on sides; rest of abdomen with pale yellow and black recumbent short pile.

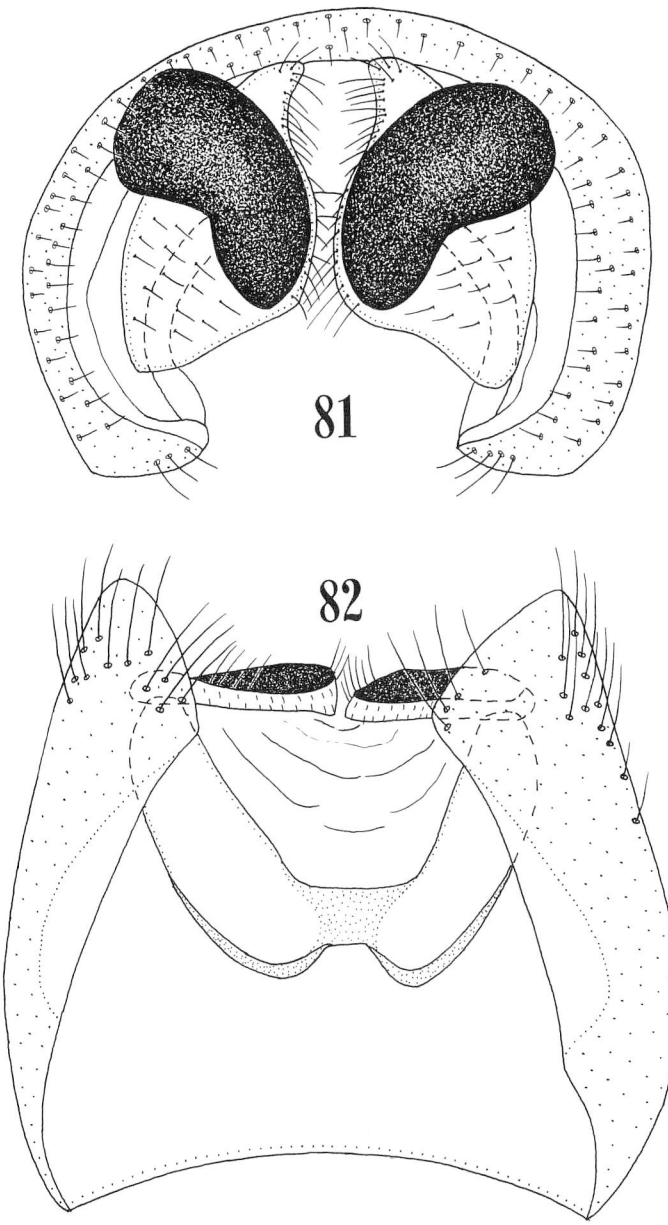
Male genitalia (Figs. 75–82): Fused gonocoxites (not flattened) roughly as long as wide or somewhat longer than wide, and narrower posteriorly. Gonostylus running vertically (dorsally), cylindrical, tapering posteriorly, blackened at apex which is curved vertically (ventrally). In posterior ventral plate, sclerotized median process is a tape-like and its apical



Figs. 78–80. *Systropus joni* sp. n., male; aedeagus complex, dorsal, ventral and lateral views.

portion is curved vertically (dorsally) like saddle and situated near bases of lateral processes; each lateral process (whose apical portion is blackened) rectangular in dorsal and ventral views and triangular in lateral view; basal fused part of ventral plate colorless, except for

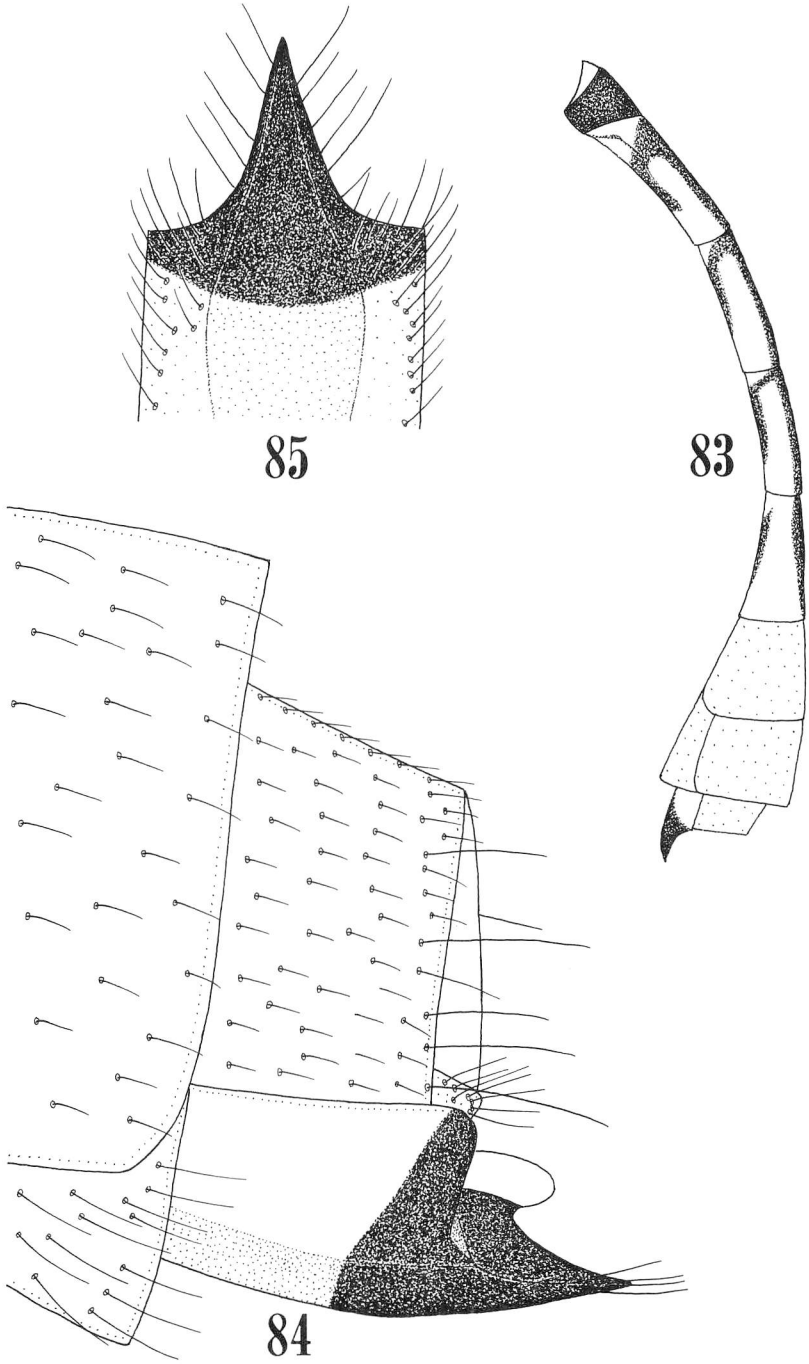
median sclerotized portion. Posterior part of dorsal plate tape-like and curved vertically (dorsally) like saddle. Tergum 9 (not flattened) wider than long, rectangular, and with posterolateral part protruded widely and shortly. Cercus more or less lozenge-shaped and with a large comma-shaped blackened tubercle starting near ventral inner corner and protruding beyond dorso-outer margin of cercus (dorso-outer part of this tubercle is wider). Sternum 10 U-shaped and wide. Specimens dissected: 2♂♂, Mt. Sudo-san (500 m), Kyongsangpuk-do, Korea, 24–25. viii. 1990, A. NAGATOMI.



Figs. 81–82. *Systropus joni* sp. n., male; tergum 9, cerci and sternum 10, posterior and ventral views.

Length: Body 15.6–17.2 mm; wing 8.5–9.4 mm; hind femur 5.3–5.7 mm.

Female. Similar to male except as follows: Head: In 4 specimens measured, half width of head 3.4–3.8 times width of frons just above antenna and 2.2–2.5 times width of face at



Figs. 83–85. *Systropus joni* sp. n., female. 83, Abdomen, lateral view; 84, apex of abdomen, lateral view; 85, apical portion of sternum 8, ventral view.

upper end of clypeus; distance from ridge below proboscis to antenna 1.2–1.3 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 206 (196–226) : 100 : 188 (178–195) and their relative widths (in lateral view) 16 (15–17) : 19 (17–21) : 35 (33–37); antennal segment 1, 0.9–1.0 times distance from ridge below proboscis to antenna.

Wing: In 3 specimens measured, Y 1.8–1.9 times as long as X.

Legs: Relative lengths of segments of fore leg 35 (34–36) : 39 (37–40) : 19 (18–19) : 8 (7–8) : 6 (5–6) : 4 (4) : 5 (5), of mid leg 38 (36–39) : 43 (42–44) : 17 (16–17) : 7 (7) : 5 (5) : 4 (4) : 5 (5), of hind leg 100 : 106 (104–107) : 55 (53–56) : 28 (27–29) : 20 (18–21) : 11 (10–11) : 9 (8–9) and in hind leg viewd from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10 (9–10) : 8 (8) : 6 (5–6) : 4 (4) : 3 (3); N=4.

Abdomen (Figs. 83–85): Apical part of sternum 8 with a black median process which is triangular in ventral view and markedly thickened in lateral view.

Length: Body 15.2–18.2 mm; wing 8.7–10.1 mm; hind femur 5.3–6.0 mm.

Distribution. Korea.

Holotype: ♂, Mt. Sudo-san (300–500 m), Kyonsangpuk-do, 21. viii. 1990, A. NAGATOMI.

Paratypes: 5♂♂, 3♀♀, Mt. Sudo-san (300–500 m), Kyonsangpuk-do, 21–25. viii. 1990, A. NAGATOMI; 1♀, Koryo, Hosen, Keikido, 17–19. vii. 1930, T. SHIRAKI.

The holotype (No. 14,922) is in Bishop Museum. The paratypes are in Bishop Museum, Kagoshima University, Kagoshima, and National Institute of Agro-Environmental Sciences, Tsukuba.

This species is dedicated to Mr. Ilman JÔN. One of us (NAGATOMI) received much help from him during the collecting trip in Korea.

Systropus luridus ZAITZEV

(Figs. 86–101)

Systropus luridus ZAITZEV, 1977, Akad. Nauk SSSR Trudy Zool. Inst., 70: 136. Type-locality: Primorskij kraj, Mikhaylovskij distr., Tarasovka (USSR).

The female sternum 8 of *luridus* is characteristic as follows: posterior margin of sternum 8 with gentle median and lateral convexities (Figs. 100, 101) and without any acute process or protruding lamella. The male genitalia of *luridus* are similar to those of sp. A and *nitobei* but are easily separated from the latter two by having the characters in the couplet 8 of the key 15. Among the Japanese species, the external characters of *luridus* are easily distinguished from those of *excisus yaeyamensis* (couplet 4 of the key 4).

Male. Head: Yellowish brown; ocellar triangle brown to dark brown; occiput (often excepting mid-lower part below neck), antennal segments 2–3 (often including apical portion of segment 1), and proboscis (excepting basal or ventral basal portion) dark brown to black; clypeus often darkened; occiput pale gray pollinose; occiput, cheek, mid-upper face, and palpus with pale pile; occiput just behind upper margin of eyes and antennal segments 1–2 with black hairs; half width of head 0.9–1.0 times distance from antenna to median ocellus,

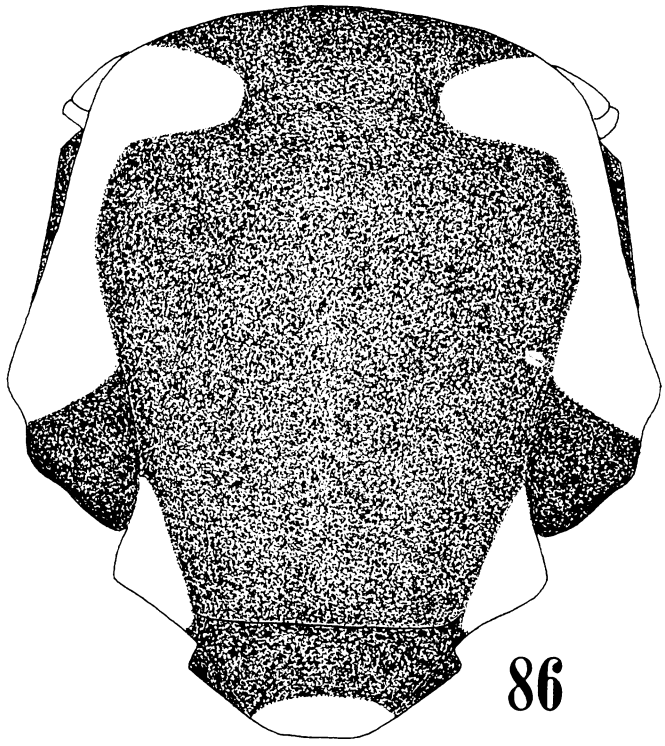
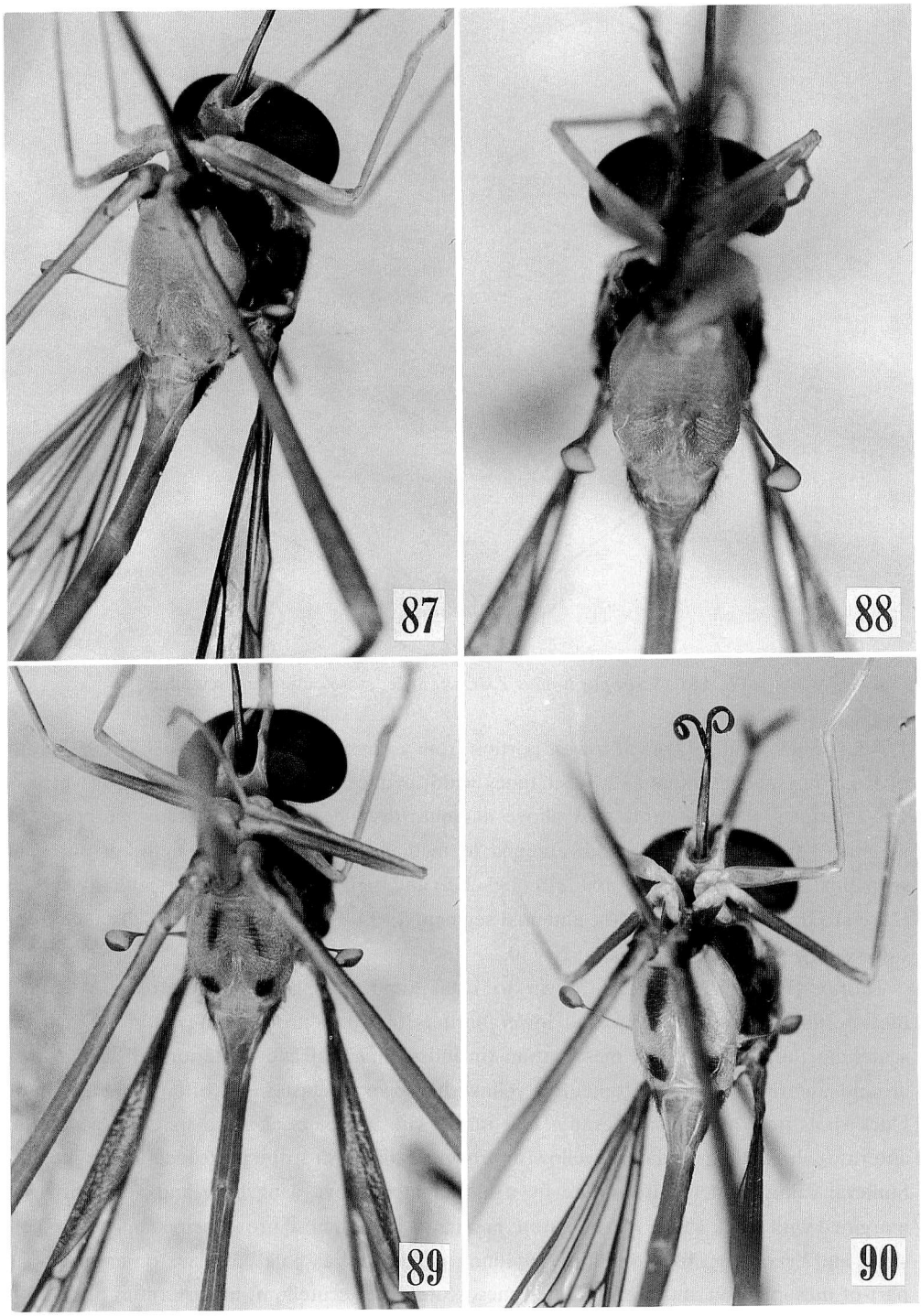


Fig. 86. *Systropus luridus* ZAITZEV, male; mesoscutum and scutellum.

1.7–2.1 times width of face at lowest portion from a direct frontal view, 3.9–4.7 times width of frons just above antenna, 2.8–3.1 times width of face at upper end of clypeus, which is 1.3–1.5 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.0–1.1 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 359 (322–400) : 100 : 210 (189–238) and their relative widths (in lateral view) 26 (22–31) : 31 (28–35) : 37 (33–44); antennal segment 1, 0.9–1.1 times as long as distance from ridge below proboscis to antenna; N = 10.

Thorax (Figs. 86–90): Dark brown to black, and pale gray pollinose; hypopleura + metasternum (except anterior and lower borders of hypoleuron), mid-posterior patch on scutellum, lateral border of mesoscutum (including humeral and posterior calli), and area around anterior spiracle + propleuron yellowish brown; metasternum often with a pair of black spots near abdominal sternum 1 or rarely with two pairs of black spots, of which the anterior pair is elongate; lateral yellowish brown mesoscutum stripe protruded inward behind humeral callus, widely interrupted by a black patch above wing base and very narrowly margined with black above mesopleuron; median more pollinose broad stripe almost parallel-sided and becoming obscure before scutellum; pile on thorax pale but black on anteroupper part of mesopleuron and black parts of mesoscutum and scutellum; metasternum often with black hairs on or around black spots.

Wing: Membrane brown fumose and veins mostly dark brown; halter yellowish brown, but posterior surface of knob darkened; Y 1.0–1.4 times as long as X; Z 0.6–0.8 times as long as

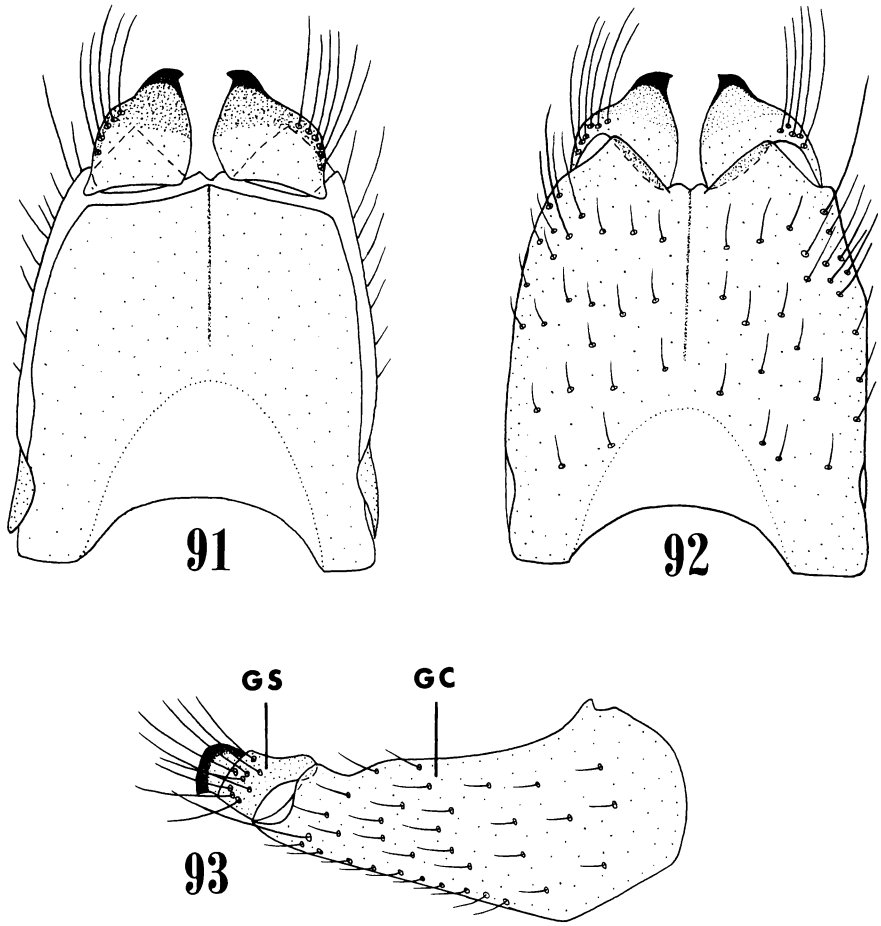


Figs. 87–90. *Systropus luridus* ZAITZEV, male; thorax, etc., ventral view (showing absence, presence and extent of black spots on metasternum).

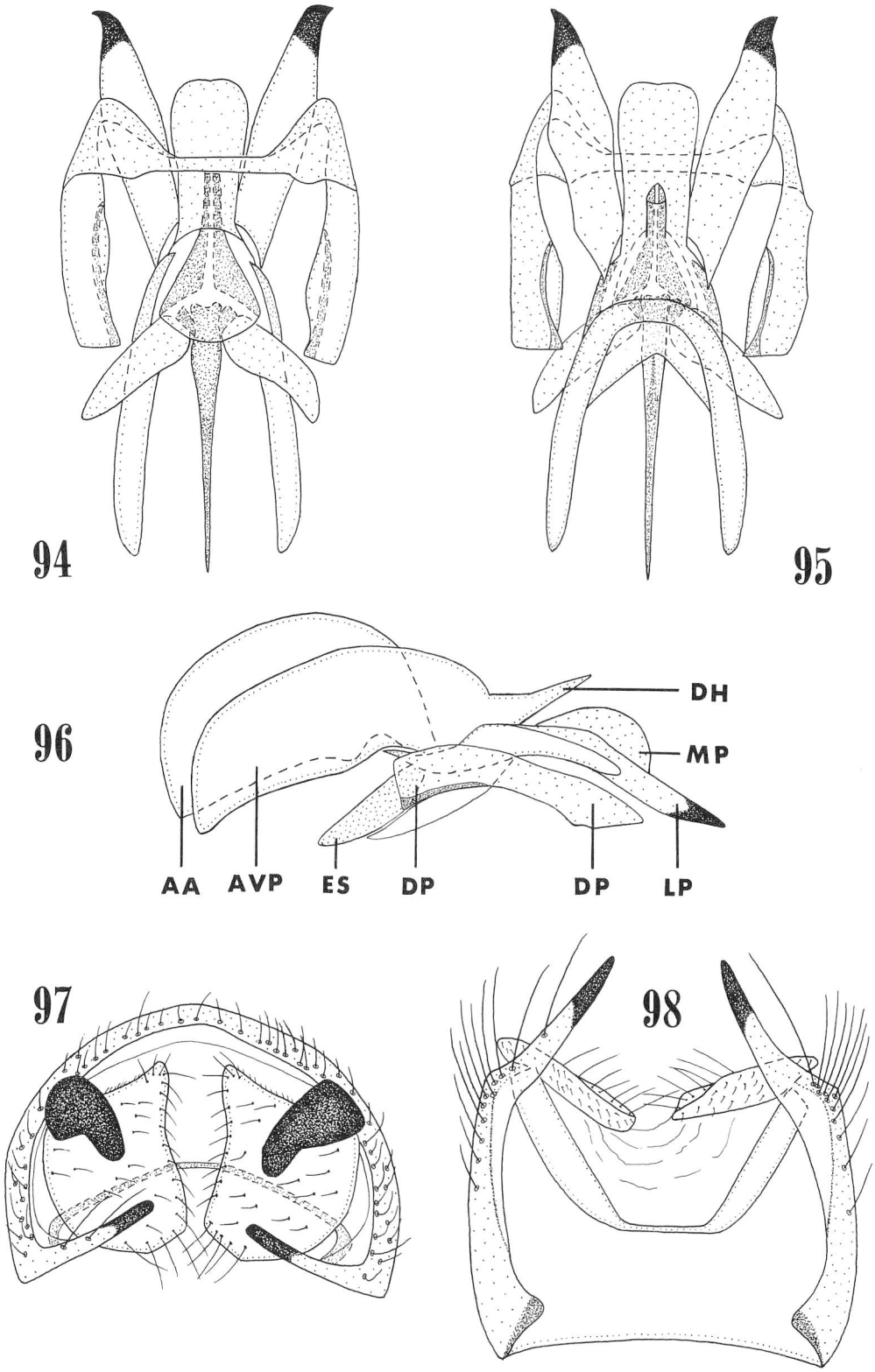
Y and 2.0–2.7 times as long as A; C 1.0–1.6 times as long as B; N=10.

Legs: Yellowish brown; outer basal part of mid coxa, dorsal surface of hind coxa, and anterior (=outer) surface of hind trochanter darkened; hind tibia (except basal portion and apex), hind tarsomeres 2–5 and apex of hind tarsomere 1 black; tarsomeres 4–5 (or 2–5) of fore and mid tarsi often somewhat darker; pile on hind coxa very short and inconspicuous; relative lengths of segments (excluding coxa and trochanter) of fore leg 34 (33–35):37 (35–38):17 (16–18):8 (7–8):6 (5–6):4 (4–5):5 (5), of mid leg 38 (37–41):44 (42–46):15 (13–16):7 (6–7):5 (5):4 (3–4):5 (4–5), of hind leg 100:106 (102–108):44 (41–45):24 (23–26):18 (16–20):8 (8–9):9 (8–10) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 8 (8–9):8 (7–8):5 (5):4 (3–4):3 (2–3); N=10.

Abdomen: Yellowish brown; tergum 1 (except anterior wide border) black and middle parts of terga 7–8 usually blackened; tergum 1 with short black hairs which become longer on sides; segments 2–8 pale yellow tomentum-like pile which becomes black on middle parts of dorsum.



Figs. 91–93. *Systropus luridus* ZAITZEV, male; gonocoxites and gonostylus, dorsal, ventral and lateral views.



Figs. 94–98. *Systropus luridus* ZAITZEV, male. 94–96, Aedeagus complex, dorsal, ventral and lateral views; 97–98, tergum 8, cerci and sternum 10, posterior and ventral views.

Male genitalia (Figs. 91–98): Fused gonocoxites (not flattened) longer than wide, with anterior margin with U-shaped pale part, and with posterior margin having a pair of large ventral convexities; gonocoxite in lateral view with a lateral tooth before middle. Gonostylus in dorsal or ventral view rather triangular and with a blackened posterior part which is somewhat directed inward and rather bluntly pointed. In posterior ventral plate, median process in ventral view wider apically, each lateral process in ventral view narrower and longer than median process and blackened at apical portion which is somewhat directed outward and pointed. Dorsal plate concave at posterior margin and its posterolateral parts rather triangular in shape. Tergum 9 (not flattened) wider than long, rather rectangular, with posterolateral process which is blackened at apical portion, thin, and pointed. Cercus in posterior view rather rectangular, and with dorsolateral blackened tubercle which is rather pointed at ventral end and protruded beyond dorsal margin of cercus. Sternum 10 U-shaped and narrow at middle. Specimens dissected: 1♂, Kojorô-dani, Hira Mts., Shiga Pref., 15. ix. 1988, A. YONETSU; 1♂, Kojorô-dani, Hira Mts., Shiga Pref., 15. ix. 1989, A. YONETSU.

Length: Body 11.6–15.6 mm; wing 6.2–7.5 mm; hind femur 4.3–5.4 mm.

Female. Similar to male except as follows: Head: Upper part of frons brown to dark brown; antennal segment 1 (except base) dark brown to black (this may be so in ♂); in 7 specimens measured, half width of head 3.6–4.0 times width of frons just above antenna, 2.6–3.2 times width of face at upper end of clypeus which is 1.3–1.7 times width of frons just above antenna; relative lengths of antennal segments 1–3, 324 (290–367) : 100 : 197 (189–210) and their relative widths (in lateral view) 23 (20–28) : 26 (20–30) : 34 (30–39).

Wing: Z 1.8–3.0 times as long as A; C 0.9–1.4 times as long as B; N=7.

Legs: Hind tibia except apex often wholly darkened (this may be so in ♂); relative lengths of segments of fore leg 32 (31–35) : 35 (33–37) : 17 (16–18) : 7 (6–9) : 5 (3–6) : 4 (3–4) : 5 (4–5), of mid leg 37 (35–39) : 42 (40–45) : 15 (14–16) : 6 (6–8) : 5 (4–5) : 4 (3–4) : 5 (4–5), of hind leg 100 : 106 (103–111) : 23 (22–25) : 16 (15–17) : 16 (15–17) : 8 (7–9) : 8 (7–8) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 8 (7–9) : 8 (7–8) : 5 (5–6) : 4 (3–4) : 3 (2–3); N=7.

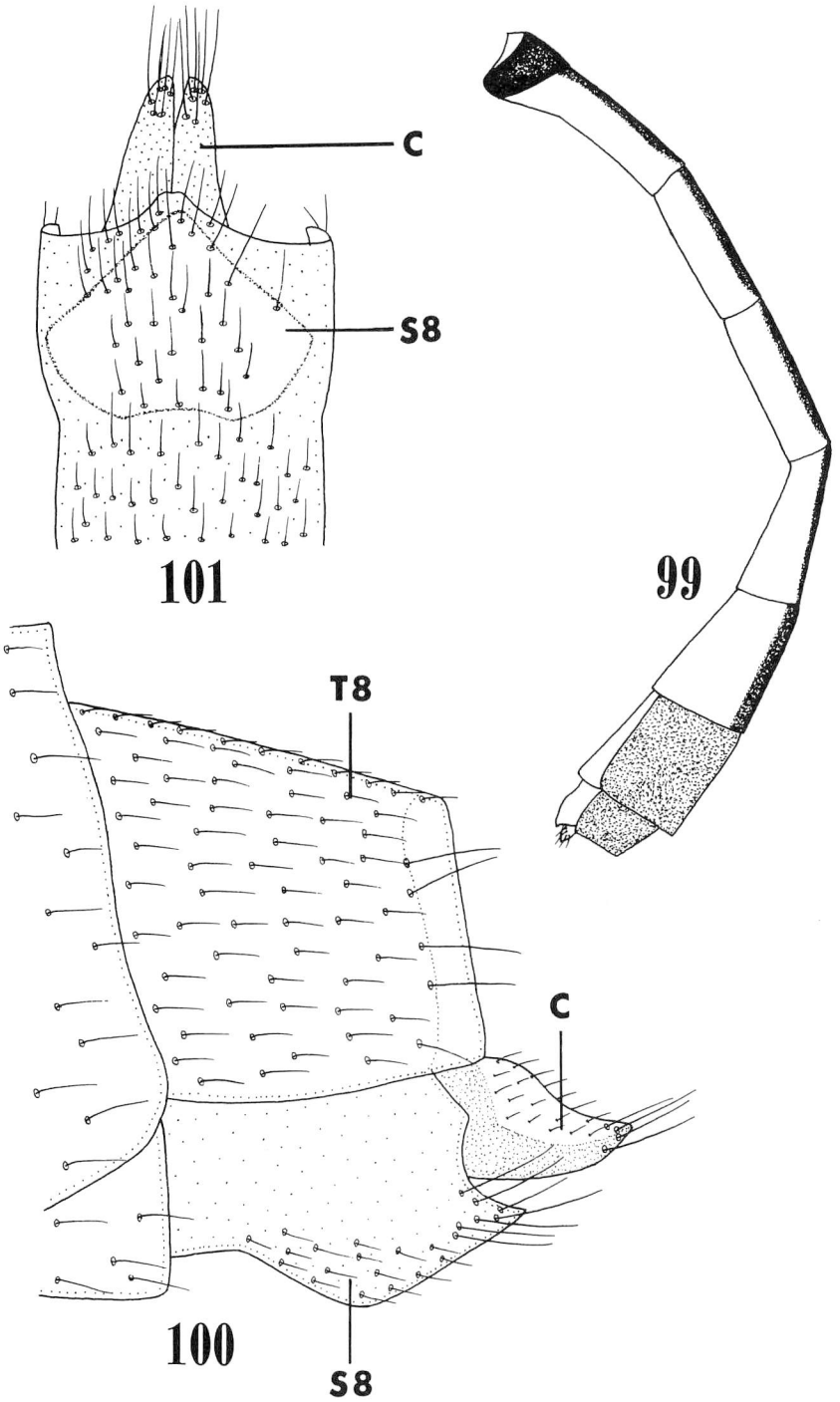
Abdomen (Figs. 99–101): Tomentum-like pile on terga 2–8 often almost wholly black (this may be so in ♂); posterior margin of sternum 8 waved or with median and lateral gentle convexities; apical part of sternum 8 not black but yellowish brown.

Length: Body 13.3–16.4 mm; wing 7.5–9.0 mm; hind femur 4.7–5.9 mm.

Distribution. Siberia, China, and Japan (Honshu) (new record).

Japanese name: Kimune-haraboso-tsuriabu.

Specimens examined (18♂♂, 7♀♀): *Niigata Pref* (1♀): 1♀, Kurokawa, N. Echigo, 29. ix. 1982, K. BABA. *Gunma Pref* (1♂): 1♂, Ônuma, Mt. Akagi, 3. viii. 1980, N. TAMAKI. *Tokyo Pref.* (2♀♀): 1♀, Takao, 17. ix. 1933, IIDA; 1♀, Nippara, 25. ix. 1949, I. HATTORI. *Nagano Pref.* (1♀): 1♀, Iwanadome, Kamikochi, 27. viii. 1931, N. KUMASAWA. *Shiga Pref.* (17♂♂, 3♀♀): 10♂♂, 1♀, Ushikoba, Hira Mts., 31. viii. 1989, A. YONETSU; 2♂♂, Kojorô-dani, Hira Mts., 15. ix. 1988, A. YONETSU; 3♂♂, 1♀, Kojorô-dani, Hira Mts., 15. ix. 1989, A. YONETSU; 1♂, 1♀, Bômura-Ushikoba, Hira Mts., 15. ix. 1989, A. YONETSU; 1♂, Kojorô-dani, Hira Mts., 15. ix. 1989, N. TAMAKI.



Figs. 99–101. *Systropus luridus* ZAITZEV, female. 99, Abdomen, lateral view; 100, apex of abdomen, lateral view; 101, cerci and apical portion of sternum 8, ventral view.

One of us (EVENHUIS) has examined 1♀ (Mt. Haku, Ishikawa Pref., Honshu, 16–17. ix. 1973, K. V. KROMBEIN).

Systropus maccus (ENDERLEIN)

(Fig. 102)

Cephenius maccus ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 85. Type-locality: Sikkim, India.

No specimen is on hand. *S. maccus* belongs to the subgenus *Dimelopelma.* Among the species from Korea, *maccus* is easily separated from *excisus* and *joni* as shown in the couplet 4 of the key 5.

Length (♂, ♀): Body 15.5–19 mm; wing 10–12.5 mm (after ENDERLEIN, 1926).

Distribution. India (Sikkim); China and Korea (after ZAITZEV, 1989).

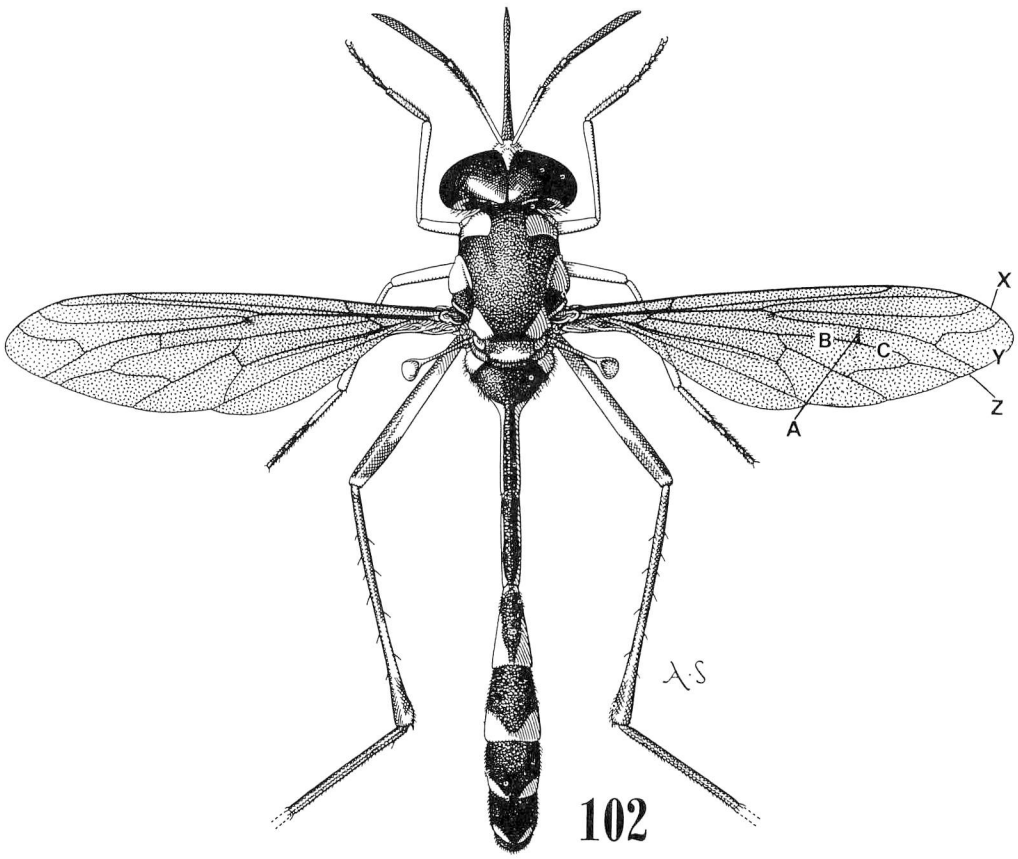


Fig. 102. *Systropus maccus* (ENDERLEIN), male; from HULL (1973).

Systropus nitobei MATSUMURA

(Figs. 103–115)

Systropus nitobei MATSUMURA, 1916, Thous. Ins. Jap., Addit., 2, p. 287. Type-locality: Japan (Honshu: Aomori).

The female sternum 8 of *nitobei* is as follows: sternum 8 has a mid-apical acute-angled triangular process which is nearly lamellate in lateral view and the black area just before mid-apical process is smaller than in sp. A (Fig. 115). The male genitalia of *nitobei* are similar to those of sp. A and *luridus* but easily distinguished from the latter two (couplets 8–9 of the key 10). Among the Japanese species, the external characters of *nitobei* are easily distinguished from those of *suzukii* (couplet 1 of the key 4).

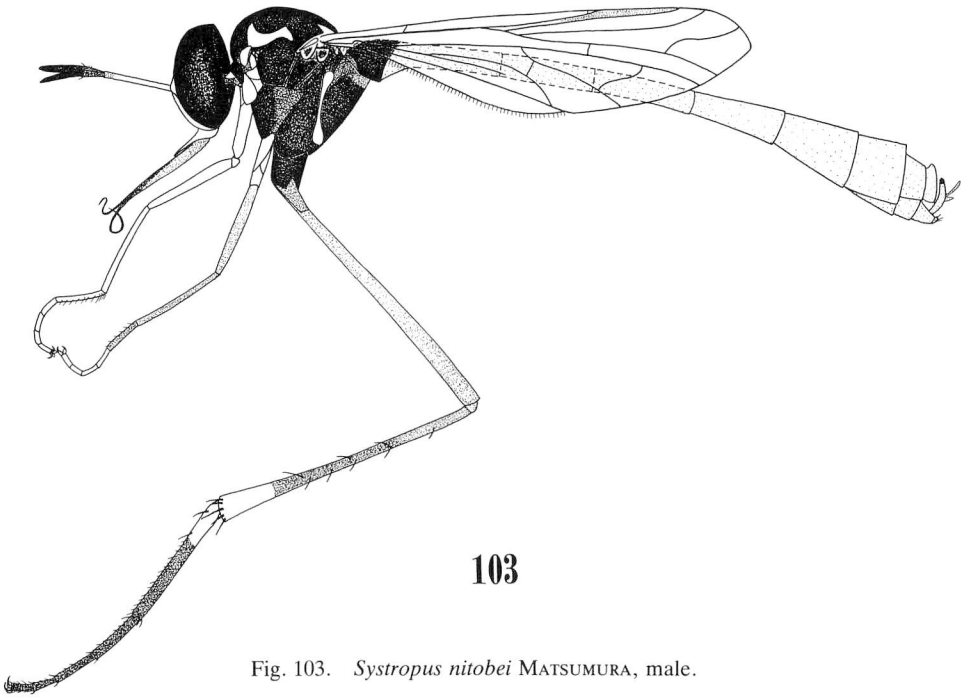


Fig. 103. *Systropus nitobei* MATSUMURA, male.

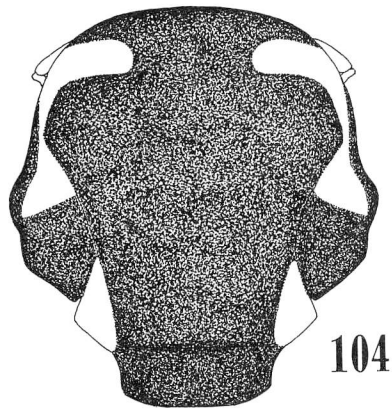
Male. Head (Fig. 103): Yellowish brown, but occiput (except mid-lower part below neck), antennal segments 2–3 (often including apical portion of segment 1), and proboscis (except ventral basal portion) dark brown to black; ocellar triangle brown; occiput pale gray pollinose; mid-upper face, occiput, cheek and palpus pale pilose; antennal segments 1-2 with black hairs; half width of head 0.8–0.9 times distance from antenna to median ocellus, 1.7–2.0 times width of face at lowest portion from a direct frontal view, 3.8–4.6 times width of frons just above antenna, 2.8–3.5 times width of face at upper end of clypeus, which is 1.2–1.5 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.0–1.1 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 261 (227–292) : 100 : 188 (170–205) and their relative widths (in lateral view) 18 (13–20) : 23 (19–25) : 35 (30–38); antennal segments 1, 0.9–1.0 times as long as distance from ridge below proboscis to antenna; N=10.

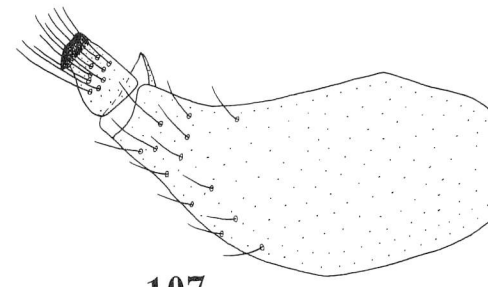
Thorax (Figs. 103, 104): Dark brown to black, and pale gray pollinose; lateral border of mesoscutum (including anterior and posterior calli), propleuron and area around anterior

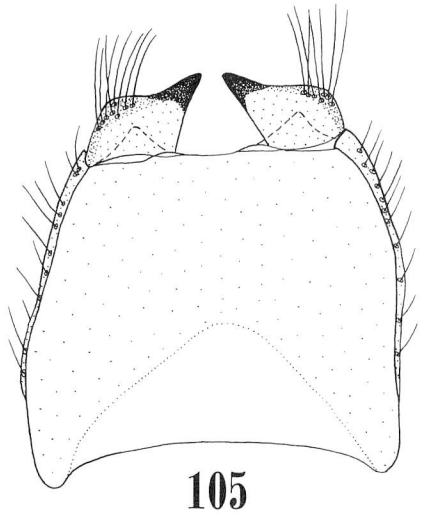
spiracle yellowish brown; posterior border of scutellum often brown; yellowish brown lateral border of mesoscutum is widely separated by a black patch above wing base, protruded inward behind humeral callus and margined with black above mesopleuron; metasternum just before abdominal segment 1 brownish; median broad mesoscutum stripe (where pollen is more distinct) almost parallel-sided and may become obscure before scutellum; mesoscutum and scutellum with short indistinct black hairs; humeral calli, pleura, metasternum, and posterior part of scutellum pale pilose.

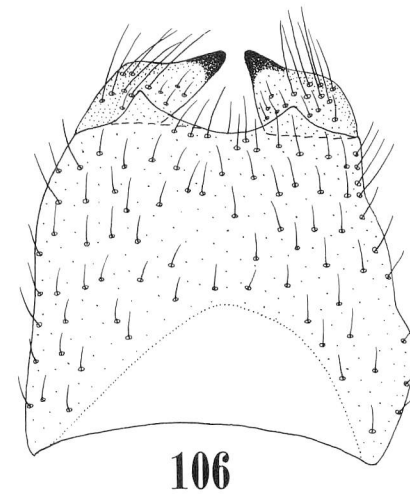
Wing: Membrane brown fumose but paler than in *suzukii*; veins brown to dark brown; halter yellowish brown; Y 0.9–1.7 times as long as X; Z 0.4–0.6 times as long as Y and 1.5–2.0 times as long as A; C 0.8–1.2 times as long as B; N=10.

Legs (Fig. 103): Yellowish brown; in hind leg, coxa, tibia (except base and apical part), tarsus (except basal part of tarsomere 1) dark brown to black; mid coxa often partly darkened; hind coxa pale gray pollinose and pale recumbent pilose; relative lengths of

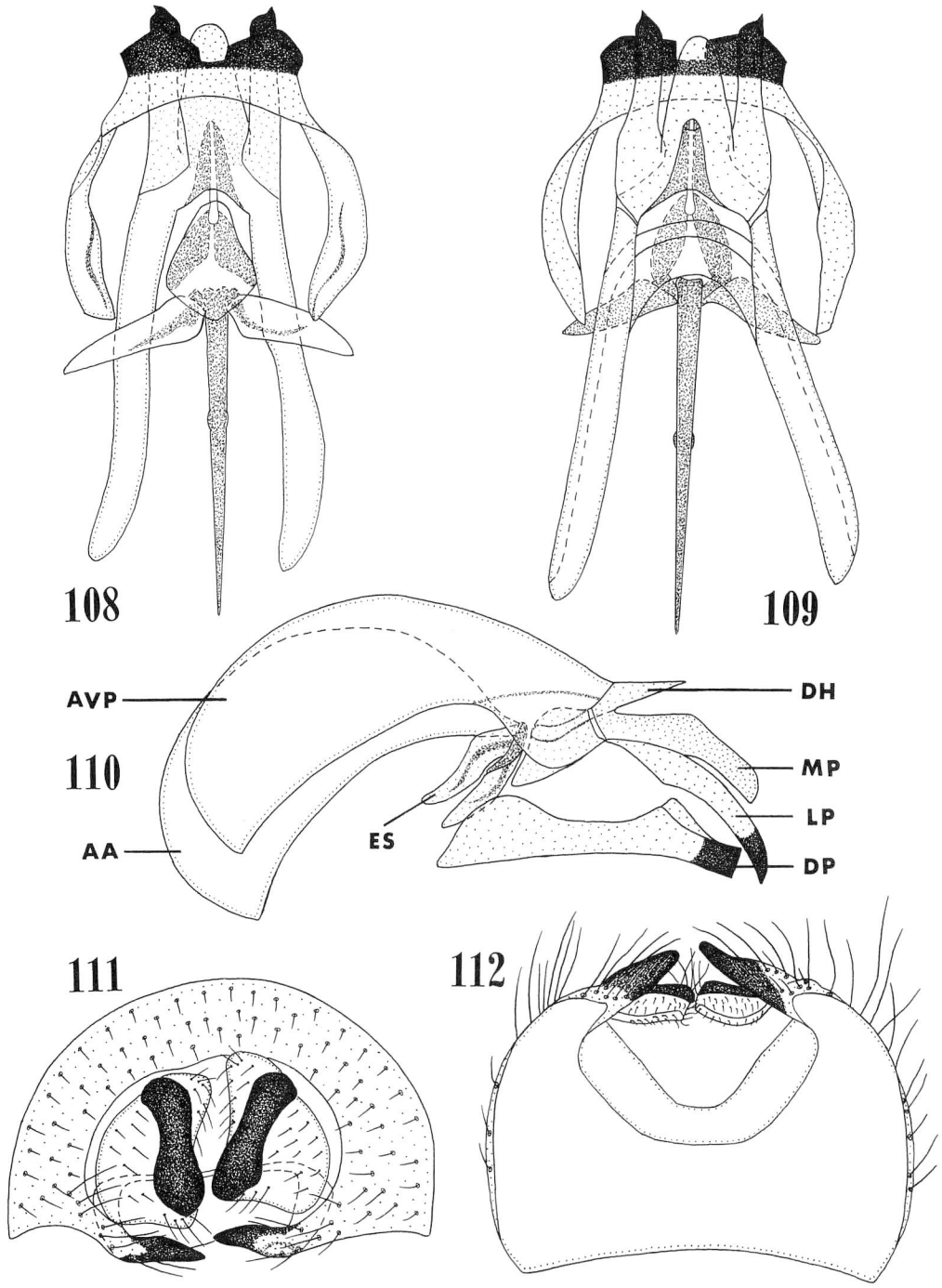








Figs. 104–107. *Systropus nitobei* MATSUMURA, male. 104, Mesoscutum and scutellum; 105–107, gonocoxites and gonostylus, dorsal, ventral and lateral views.



Figs. 108–112. *Systropus nitobei* MATSUMURA, male. 108–110, Aedeagus complex, dorsal, ventral and lateral views; 111–112, tergum 9, cerci and sternum 10, posterior and ventral views.

segments (excluding coxa and trochanter) of fore leg 36 (34–38) : 37 (36–39) : 20 (19–21) : 8 (7–9) : 6 (5–7) : 4 (4–5) : 5 (5–6), of mid leg 41 (38–43) : 45 (43–48) : 16 (11–17) : 7 (7–8) : 6 (5–6) : 4 (4) : 5 (4–5), of hind leg 100 : 104 (101–107) : 47 (42–49) : 22 (20–23) : 17 (15–18) : 8 (7–9) : 8 (7–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (8–9) : 8 (7–8) : 5 (4–6) : 3 (3–4) : 3 (2–3); N = 10.

Abdomen: Yellowish brown; tergum 1 black; segments 7–8 often partly darkened; tergum 1 pale pilose, except mid-posterior part having short indistinct black hairs; segments 2–8 with pale yellow tomentum-like hairs which become black on middle surfaces of terga 2–8.

Male genitalia (Figs. 105–112): Fused gonocoxites (not flattened) about as long as wide, with anterior margin having V-shaped pale part, and with ventral posterior margin waved and having two short peaks. Gonostylus in dorsal or ventral view rectangular, with apical portion blackened, pointed, and directed inward; gonostylus with a ventral spine which is short and indistinct. In posterior ventral plate, median process in ventral view wide, tapering apically, and at apex rounded; each lateral process in ventral view much narrower and somewhat longer than median process, and with an outer pointed tooth. Posterior part of dorsal plate blackened, concave at middle and divided into two wide rectangular parts. Tergum 9 (not flattened) wider than long, with posterolateral process which is blackened at apical portion. Cercus in posterior view rather crescent-shaped, widest near ventral margin and then tapering dorsally, and with elongate blackened tubercle whose ventral portion is situated at inner margin of cercus. Sternum 10 wide and with posterior margin deeply concave. Specimens dissected: 1 ♂, Kojorô-dani, Hira Mts., Shiga Pref., 15. ix. 1989, A. YONETSU; 1 ♂, Bômura-Ushikoba, Hira Mts., Shiga Pref., 15. ix. 1989, A. YONETSU; 1 ♂, M. Echigo, Niigata Pref., 25. ix. 1983, K. BABA; 1 ♂, Sudo-san (300–500 m), Kyongsangpuk-do, Korea, 21. viii. 1990, A. NAGATOMI.

Length: Body 11.8–16.4 mm; wing 6.6–9.0 mm; hind femur 4.0–5.7 mm.

Female. Similar to male except as follows: Head: Upper portion of frons brown to dark brown; in 10 specimens measured, half width of head 0.9–1.0 times distance from antenna to median ocellus; distance from ridge below proboscis to antenna 1.1–1.4 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 274 (245–309) : 100 : 226 (200–255) and their relative widths (in lateral view) 20 (17–25) : 23 (18–27) : 36 (32–42).

Thorax: Pile on posterior calli pale (possibly sometimes also in ♂).

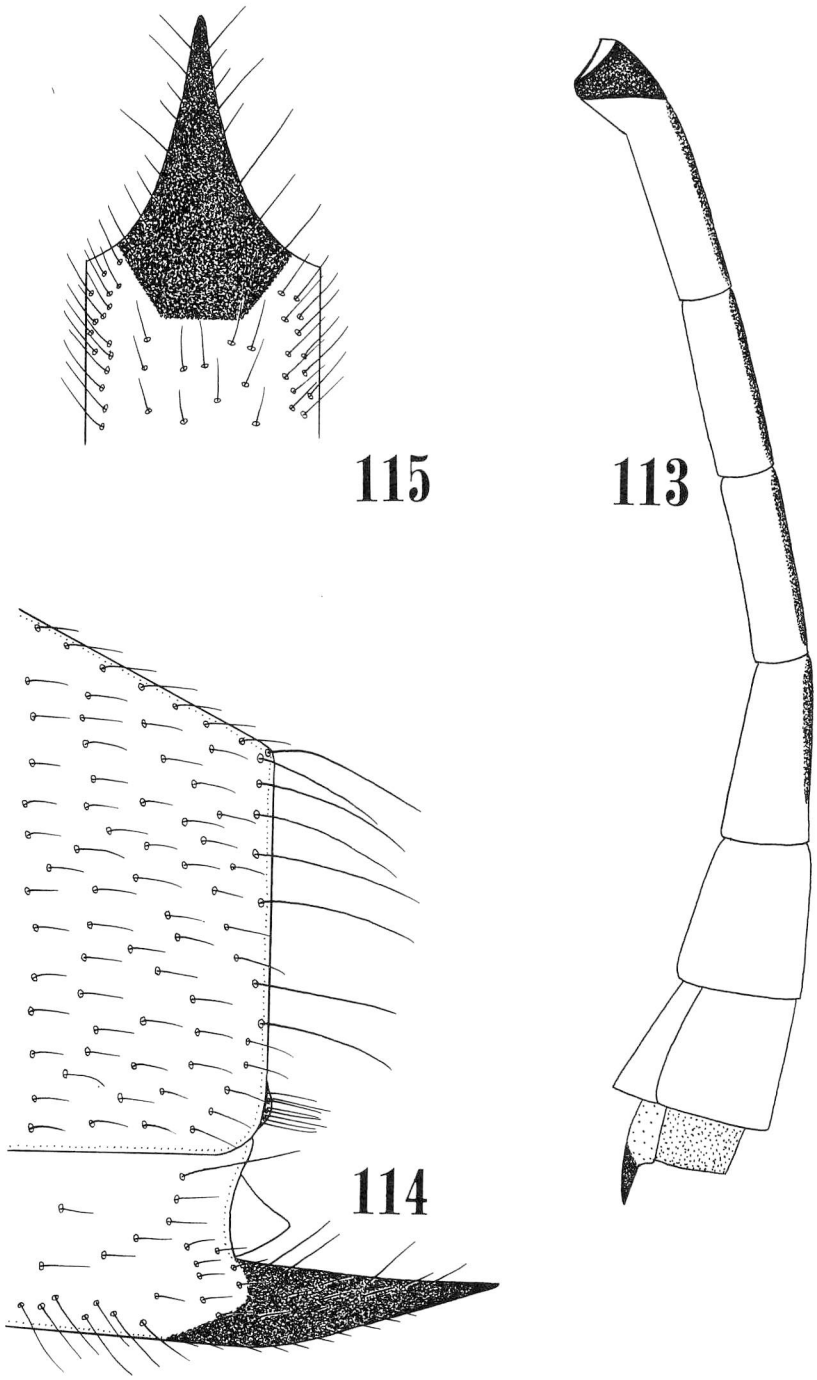
Wing: Z 1.5–2.3 times as long as A; N = 10.

Legs: Relative lengths of segments of fore leg 36 (34–37) : 37 (35–38) : 20 (19–20) : 9 (8–9) : 6 (5–7) : 4 (4–5) : 5 (4–6), of mid leg 40 (39–42) : 44 (41–45) : 16 (15–18) : 7 (6–8) : 5 (5–6) : 4 (3–4) : 5 (4–6), of hind leg 100 : 105 (100–112) : 46 (44–49) : 21 (19–23) : 16 (15–18) : 8 (7–9) : 8 (8–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 8 (8–9) : 8 (7–8) : 5 (4–6) : 3 (3–4) : 3 (2–3); N = 10.

Abdomen (Figs. 113–115): Mid-apical black part of sternum 8 is acute-angled triangular and has narrow or wide base according to individual in ventral view; it is somewhat thickened in lateral view.

Length: Body 12.3–17.8 mm; wing 6.7–10.0 mm; hind femur 4.1–6.0 mm.

Distribution. Japan (Hokkaido, Honshu, Shikoku, Kyushu), and Korea.



Figs. 113–115. *Systropus nitobei* MATSUMURA, female. 113, Abdomen, lateral view; 114, apex of abdomen, lateral view; 115, apical pirtion of sternum 8, ventral view.

Japanese name: Nitobe-haraboso-tsuriabu.

Specimens examined (45♂♂, 22♀♀): JAPAN: HOKKAIDO (1♂, 2♀♀): 1♂, 2♀♀, Sapporo, 27. vii. 1965, K. KUSIGEMATI.

HONSHU (36♂♂, 17♀♀): *Niigata Pref.* (12♂♂, 10♀♀): 4♂♂, 2♀♀, Sadogashima, 18. vii. 1955, K. BABA; 5♂♂, 4♀♀, N. Echigo, 1. ix.–24. ix. 1955–84, K. BABA; 3♂♂, 3♀♀, M. Echigo, 20. viii.–25. ix. 1954–83, K. BABA; 1♀, S. Echigo, 10. viii. 1982, K. BABA. *Saitama Pref.* (7♂♂); 1♂, Ogose-machi, 10. ix. 1978, N. TAMAKI; 6♂♂, Moroyama-cho, 1. ix.–28. x. 1980–85, N. TAMAKI. *Shiga Pref.* (17♂♂, 6♀♀): 6♂♂, 1♀, Bômura-Ushikoba, Hira Mts., 26. viii. & 15. ix. 1989, A. YONETSU; 9♂♂, 2♀♀, Kojorô-dani, Hira Mts., 26. viii. & 15. ix. 1989, A. YONETSU; 1♀, Bômura-Ushikoba, Hira Mts., 15. ix. 1989, N. TAMAKI; 2♂♂, 2♀♀, Kojorô-dani, Hira Mts., 15–16. ix. 1989, N. TAMAKI. *Kyoto Pref.* (1♀): 1♀, Ashiu, 1. viii. 1973, A. NAGATOMI.

KYUSHU (4♂♂, 1♀): *Ôita Pref.* (1♂, 1♀): 1♂, 1♀, Usa-jingu, 13. vii. 1973, H. MAKIHARA. *Kagoshima Pref.* (3♂♂): 1♂, Kaseda, 13. x. 1977, K. KUSIGEMATI; 2♂♂, Yakushima, 24–26. vii. 1968, A. NAGATOMI.

KOREA (4♂♂, 2♀♀): 4♂♂, 2♀♀, Mt. Sudo-san (300–500 m), Kyongsangpuk-do, 21–25, viii. 1990, A. NAGATOMI.

One of us (EVENHUIS) has examined 9♂♂, 4♀♀ from Japan as follows: HONSHU (8♂♂, 4♀♀): *Tokyo Pref.* (6♂♂, 3♀♀): 17. ix.–9. x. 1978, C. W. MILLS III. *Hyogo Pref.* (2♂♂, 1♀): Mt. Hyonosen, 26. vii. 1977, D. F. BOUFFORD. SHIKOKU (1♂): *Kochi Pref.* (1♂): Okitsu-zaki, 1904.

Systropus polistoides WESTWOOD

Systropus polistoides WESTWOOD, 1876, Trans. Ent. Soc. Lond., 1876: 575. Type-locality: Chantibon, Thailand.

Among the species from Thailand, *polistoides* may be separated from sp. B (1♂) as shown in the couplet 2 of the key 7.

Length (2♂♂): Body 18–19 mm; wing 11–12 mm (after BEZZI, 1905).

Female. Unknown.

Distribution. Thailand; N. China (after BEZZI, 1905).

Systropus sauteri (ENDERLEIN)

Cephenius sauteri ENDERLEIN, 1926, Wien. Ent. Ztg., 43: 82. Type-locality: South Taiwan.

No specimens were available for study. Among the species from Taiwan, *sauteri* may easily be separated from *hoppo* and *barbiellinii* as shown in the couplet 7 of the key 6.

"Subgenitalplatte des ♀ rostrot, Endhälfte schwarz, fast rechtwinklig verjüngt und in eine kurze, scharfe Spitze ausgezogen" (after ENDERLEIN, 1926).

Length (♂, ♀): Body 20.5–25 mm; wing 12.5–15 mm (after ENDERLEIN, 1926).
Distribution. Taiwan.

Systropus suzukii MATSUMURA

(Figs. 116–128)

Systropus suzukii MATSUMURA, 1916, Thous. Ins. Jap., Addit., 2, p. 286. Type-locality: Japan (Honshu: Kyoto).

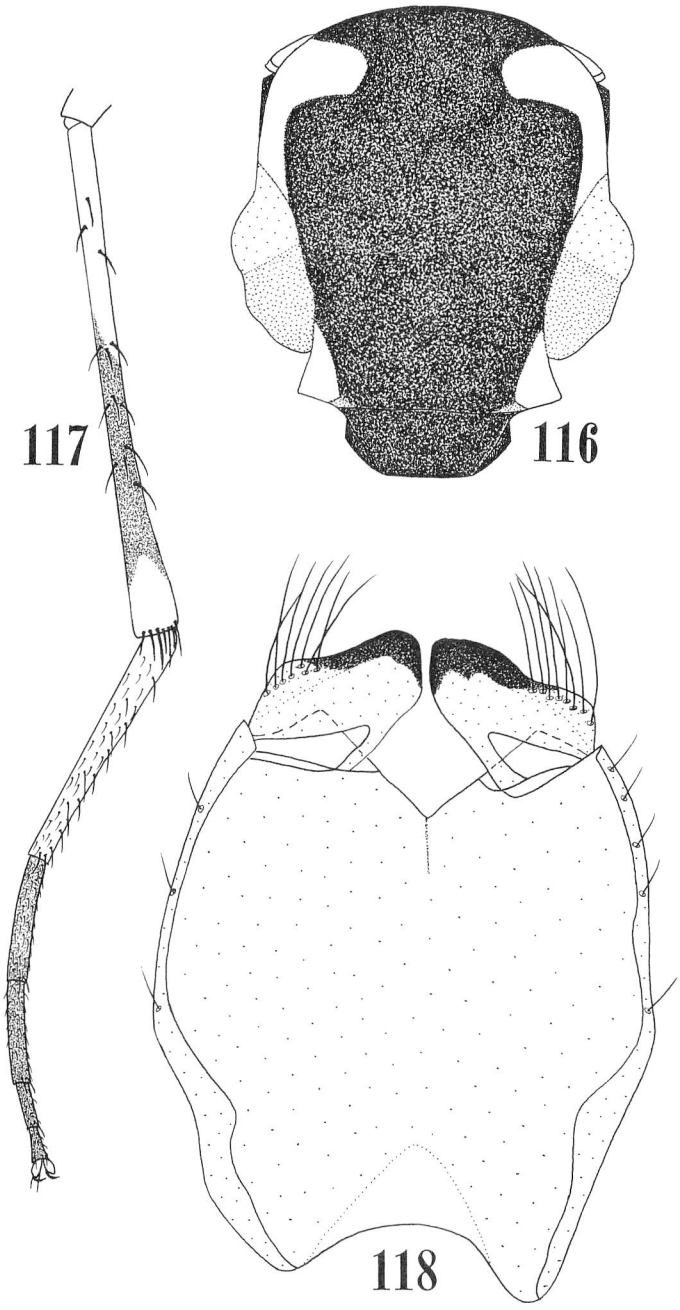
The female sternum 8 of *suzukii* is very similar to that of *tripunctatus* but may be separated from the latter by having the black area before lamellae large and not divided (Fig. 129). The male genitalia of *suzukii* are very similar to those of *aokii* and sp. C but may be distinguished from the latter two (couplets 11–12 of the key 10).

Among the Japanese species, the external characters of *suzukii* are easily distinguished from those of *nitobei* (couplet 3 of the key 4).

Male. Head: Head and its appendages dark brown to black, but face and palpus yellowish brown; ventral basal portion of proboscis brownish; often clypeus with a brown or dark brown tinge and lower frons with yellowish brown to brown tinge; ocellar triangle sometimes reddish brown; frons, face, cheek and occiput pale gray pollinose; frons, ocellar triangle, vertex, occiput, cheek, parafacials, mid-upper face and palpus with pale pile which is short on the former three, recumbent on frons, and sparse and indistinct on parafacials; antennal segments 1–2 with black hairs; half width of head 1.1–1.2 times distance from antenna to median ocellus, 1.7–1.9 times width of face at lowest portion from a direct frontal view, 3.7-4.5 times width of frons just above antenna, and 2.6–2.9 times width of face at upper end of clypeus, which is 1.4–1.7 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.4–1.6 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 282 (250–313) : 100 : 215 (175–244) and their relative widths (in lateral view) 22 (19–25) : 19 (15–22) : 36 (30–41); antennal segment 1 as long as distance from ridge below proboscis to antenna; N = 10.

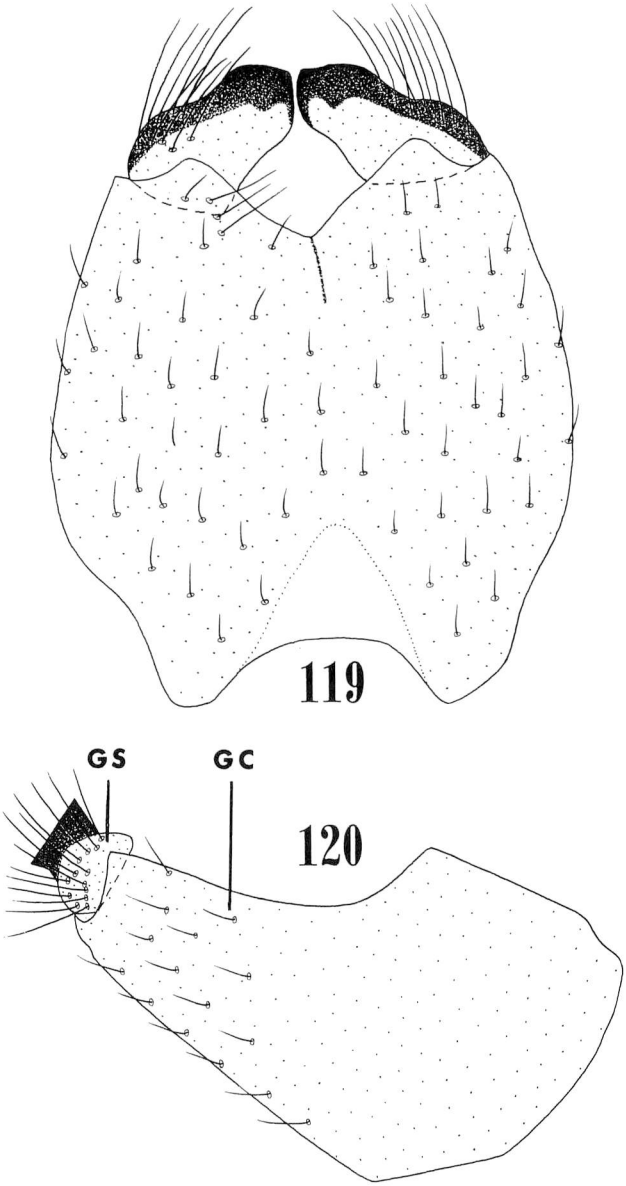
Thorax (Fig. 116): Dark brown to black, pale gray pollinose, and with following yellow to yellowish brown parts: lateral borders of mesoscutum (including humeral and posterior calli), of which areas just behind humeral calli are widened or protruded inward; propleuron (between fore coxa and anterior spiracle); area around anterior spiracle; posteroupper part of pteropleuron, which is often indistinct; area just before abdominal segment 1; posterior border of scutellum sometimes brown; mesoscutum with a median broad stripe (where pollen is more distinct) which is widened before scutellum; pile on thorax pale or pale yellow, but that on mesopleura, scutellum and blackend part of mesoscutum wholly or partly black.

Wing: Membrane brown fumose and darker than in *nitobei;* veins mostly dark brown; halter yellowish brown; halter knob creamy, and often with a darker area on posterior surface; Y 1.5–2.3 times as long as X; Z 0.1–0.3 times as long as Y and 0.4–1.1 times as long as A; C 0.5–0.7 times as long as B; N = 10.



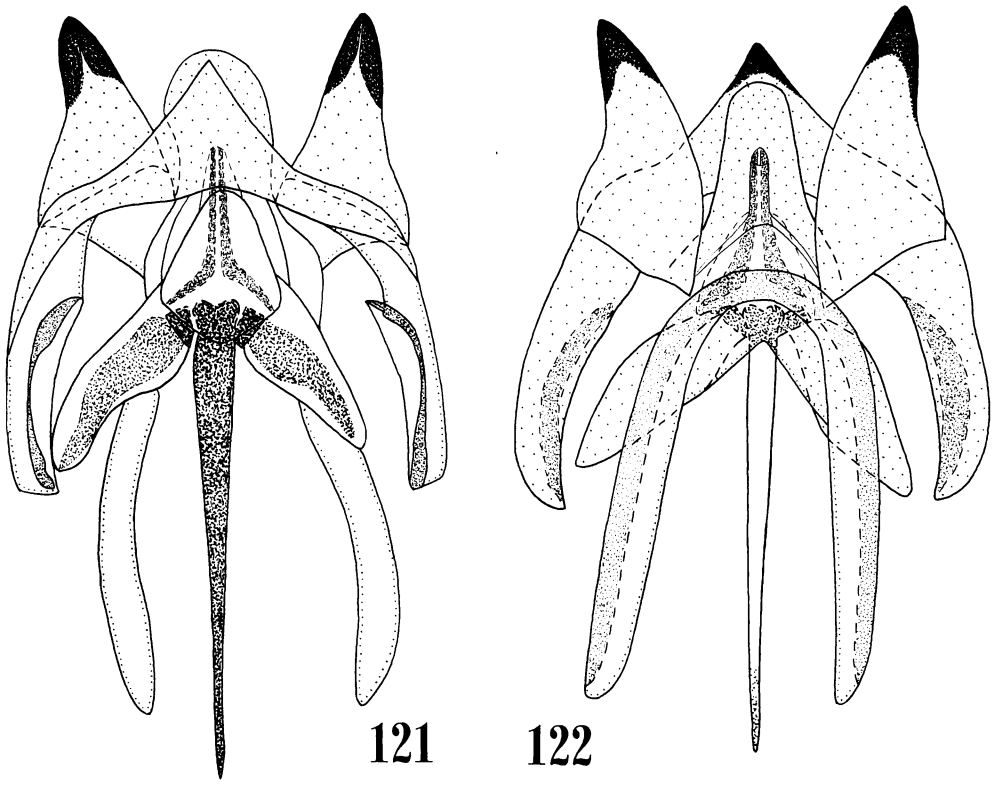
Figs. 116–118. *Systropus suzukii* MATSUMURA, male. 116, Mesoscutum and scutellum; 117, hind tibia and tarsus, anterior view; 118, gonocoxites and gonostylus, dorsal view.

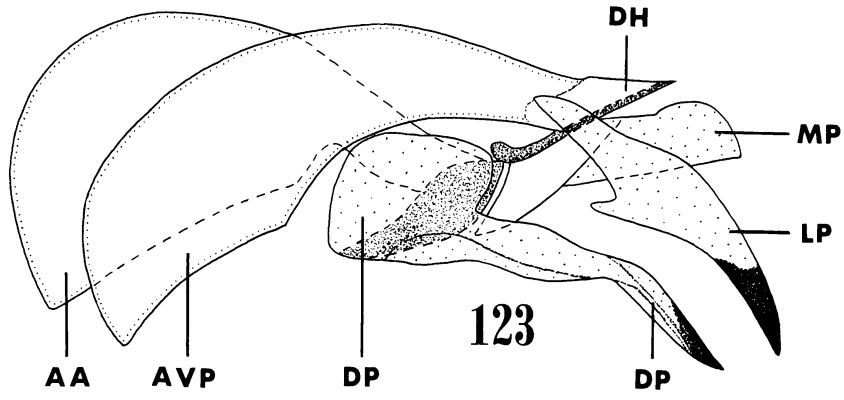
Legs (Fig. 117): Yellowish brown; coxae (except apices) dark brown to black; hind tibia (except for basal and apical portions, of which the former is usually much larger in extent than the latter) and hind tarsomeres 4–5 or 3–5 (sometimes 2–5) blackened; coxae pale gray



Figs. 119–120. *Systropus suzukii* MATSUMURA, male; gonocoxites and gonostylus, ventral and lateral views.

pollinose and with pale or yellow pile, some of which may often change into black; femora with pale or yellow tomentum-like pile, of which dorsal one often changes into black; relative lengths of segments (excluding coxa and trochanter) of fore leg 35 (34–37) : 38 (36–40) : 18 (16–19) : 7 (7–8) : 6 (5–7) : 5 (4–5) : 6 (5–7), of mid leg 39 (36–41) : 44 (43–47) : 16 (14–16) : 7 (6–7) : 6 (5–6) : 5 (4–5) : 6 (5–6), of hind leg 100 : 104 (100–110) : 49 (46–50) : 25 (23–27) : 19 (18–21) : 9 (8–9) : 9 (8–9) and in hind leg viewed from the side, relative widths of femur, tibia,



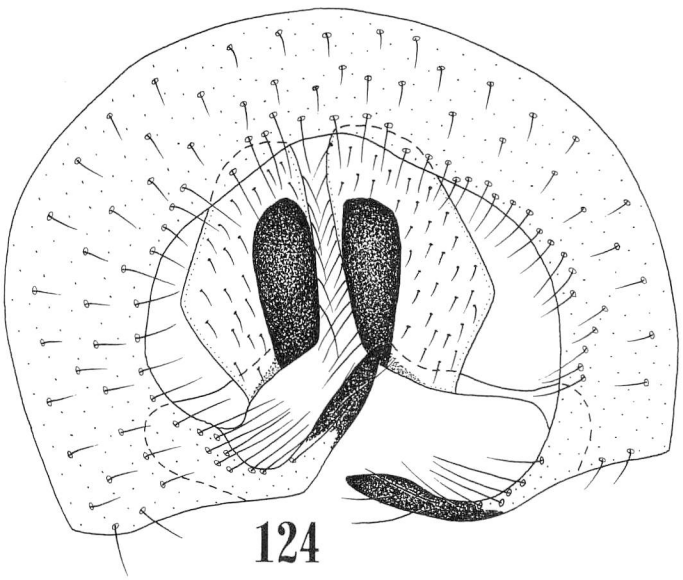


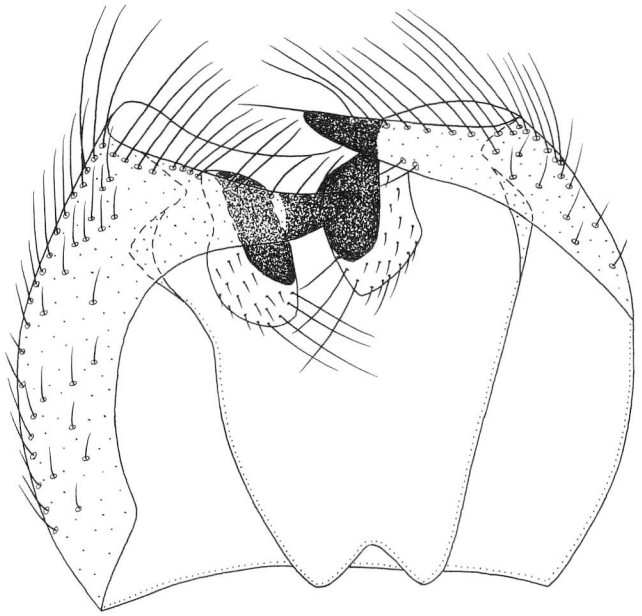
Figs. 121–123. *Systropus suzukii* MATSUMURA, male; aedeagus complex, dorsal, ventral and lateral views.

and tarsomeres 1–3, 9 (8–9) : 9 (8–9) : 6 (5–6) : 4 (3–4) : 3 (3–4); N = 10.

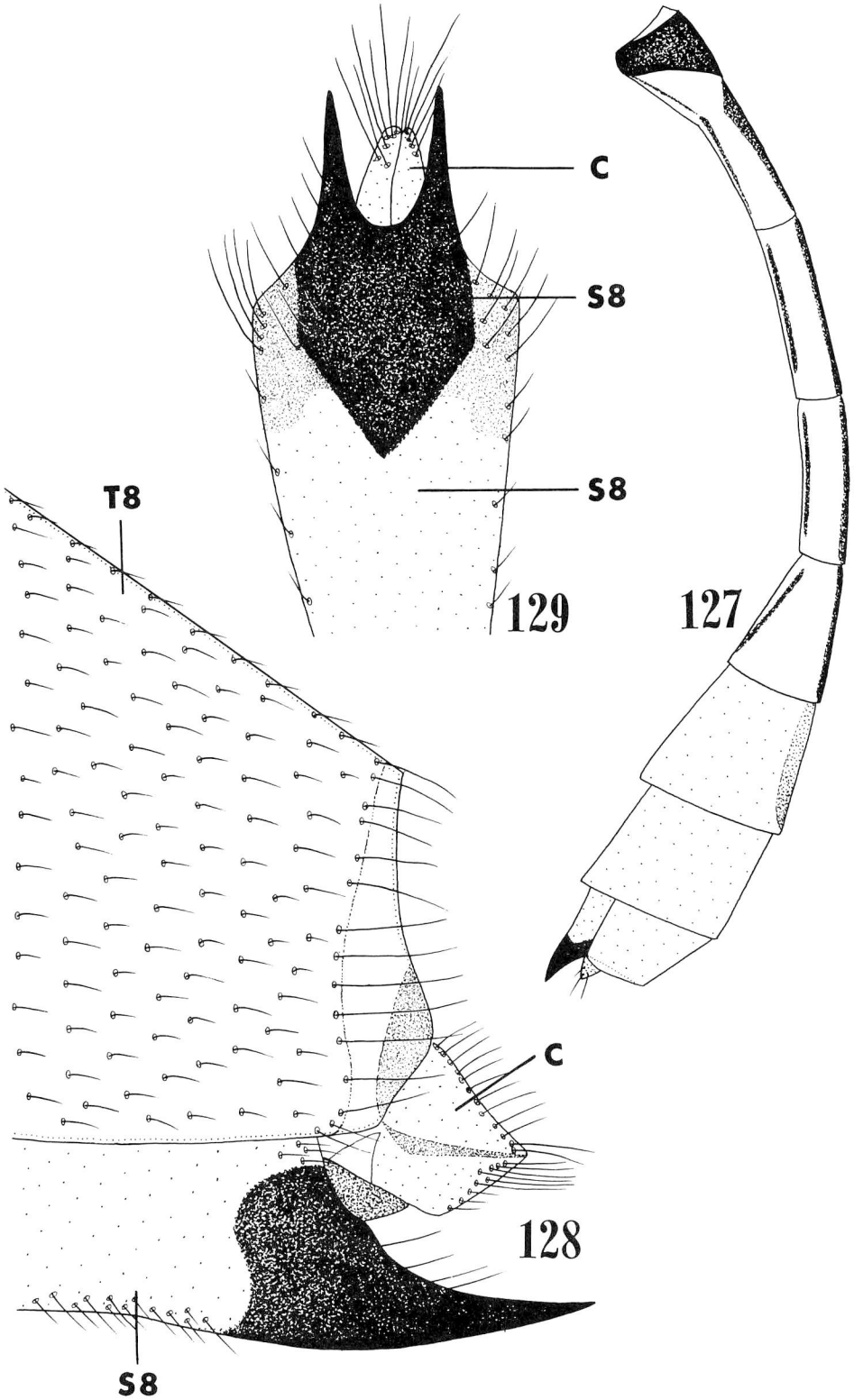
Abdomen: Yellowish (or reddish) brown; tergum 1 black; terga 2–6 with lateral black stripes which do not extend to anterior and posterior margins (stripe on tergum 6 indistinct or divided into two stripes); tergum 1 with black hairs which become pale and longer on sides; sternum 1 pale pilose; segments 2–8 with tomentum-like pale yellow pile which becomes black on middle surfaces of terga 2–8 and lateral borders of terga 2–5.

Male genitalia (Figs. 118–126): Fused gonocoxites (not flattened) about as long as wide, with anterior margin having V-shaped pale part, with posterior margin concave at middle and having two ventral obtuse triangular convexities. Gonostylus in dorsal or ventral view wider at basal part, then narrower and running inward, bluntly pointed, and with posterior part blackened. In posterior ventral plate, median process in ventral view wide, and rounded apically; each lateral process (except base) in ventral view triangular, pointed, longer than





Figs. 124–126. *Systropus suzukii* MATSUMURA, male; tergum 9, cerci and sternum 10. 124 & 126, Posterior and ventral views; 125, cercus, posterior view.



Figs. 127–129. *Systropus suzukii* MATSUMURA, female. 127, Abdomen, lateral view; 128, apex of abdomen, lateral view; 129, apical portion of sternum 8, ventral view.

median process, and blackened at apical portion. Dorsal plate triangular in posterior part and blackened at apex. Tergum 9 (not flattened) wider than long, rather rectangular, with posterolateral process which is rather stout and pointed in ventral view, and blackened at apical portion. Cercus in posterior view rather elliptical and with blackened tubercle which is wide, elongate, and located along inner margin of cercus. Sternum 10 large, about as long as tergum 8, trapezoid, narrower anteriorly, and with anterior margin more or less concave at middle. Specimens dissected: 1♂, M. Echigo, Niigata Pref., 18. ix. 1982, K. BABA; 1♂, Bômura-Ushikoba, Hira Mts., Shiga Pref., 15. ix. 1989, N. TAMAKI.

Length: Body 20.2–22.4 mm; wing 10.8–11.8 mm; hind femur 6.5–7.3 mm.

Female. Similar to male except as follows: Head: In 9 specimens measured, half width of head 1.2–1.3 times distance from antenna to median ocellus, and 3.6–4.2 times width of frons just above antenna; relative lengths of antennal segments 1–3, 308 (278–327) : 100 : 296 (267–336) and their relative widths (in lateral view) 26 (22–29) : 22 (19–27) : 43 (36–50); antennal segment 1, 0.8–1.0 times as long as distance from ridge below proboscis to antenna.

Wing: Z 0.2–0.7 times as long as A; C 0.6–0.8 times as long as B; N=9.

Legs: Fore coxa almost wholly yellowish brown to brown (this is possibly sometimes also in ♂); relative lengths of segments of fore leg 35 (35–36) : 38 (36–39) : 18 (17–19) : 7 (7–8) : 5 (5–6) : 4 (3–5) : 5 (4–6), of mid leg 38 (37–39) : 44 (41–47) : 16 (12–17) : 6 (6–7) : 5 (4–5) : 4 (3–4) : 5 (4–5), of hind leg 100 : 106 (103–110) : 50 (48–52) : 25 (23–27) : 19 (18–20) : 9 (8–9) : 8 (8–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (8–9) : 9 (8–10) : 6 (5–6) : 4 (4–5) : 3 (3–4); N=9.

Abdomen (Figs. 127–129): Apical black part of sternum 8 lamellate and with a U-shaped concavity or with a pair of lateral, usually thin processes which are pointed at apex and much shorter than preceding black part.

Length: Body 20.5–23.3 mm; wing 12.0–13.6 mm; hind femur 6.6–7.7 mm.

Distribution. Japan (Honshu; Shikoku [after HISAMATSU, 1965]), and Korea (after KIM, 1980).

Japanese name: Suzuki-haraboso-tsuriabu.

Specimens examined (16♂♂, 9♀♀): HONSHU: *Niigata Pref.* (10♂♂, 7♀♀): 7♂♂, 6♀♀, N. Echigo, 3. ix.–26. ix., 1982–84, K. BABA; 2♂♂, M. Echigo, 18. ix. 1982, K. BABA; 1♂, 1♀, S. Echigo, 22. ix. 1984, K. BABA. *Shiga Pref.* (5♂♂, 2♀♀): 2♂♂, 1♀, Kojorô-dani, Hira Mts., 26. viii. & 15. ix. 1989, A. YONETSU; 1♂, Bômura-Ushikoba, Hira, Mts., 26. viii. 1989, A. YONETSU; 1♂, Ushikoba, Hira Mts., 31. viii. 1989, A. YONETSU; 1♂, 1♀, Bômura-Ushikoba, Hira Mts., 15. ix. 1989, N. TAMAKI. *Kyoto Pref.* (1♂): 1♂, Ashiu, 27–28. viii. 1988, A. YONETSU.

Systropus tripunctatus ZAITZEV

(Figs. 130–142)

Systropus tripunctatus ZAITZEV, 1977, Akad. Nauk SSSR Trudy Zool. Inst., 70: 133. Type-locality: Khabarovskij, Ilynnka (USSR).

Systropus bifurcus EVENHUIS, 1982, Pac. Insects, 24: 37. Type-locality: Kirin, Manchuria Prov., N. China. **New Synonymy.**

The original description of *S. bifurcus,* based on 2♀♀, agrees well with the specimens (2♀♀) here described as *tripunctatus,* except the hind basitarsus largely blackened due to short recumbent dense black pile. However, the hind basitarsus color may easily vary into "orange-yellow" depending on the individual.

The female sternum 8 of *tripunctatus* is very similar to that of *suzukii* but may be distinguished from the latter by having the black area before lamellae small and divided by mid yellowish (or reddish) vitta (Fig. 142). The male genitalia of *tripunctatus* are very similar to those of sp. B but may be distinguished from the latter by several characters (couplet 3 of the key 10).

Among the Korean species, the external characters of *tripunctatus* may be distinguished from those of *nitobei* (couplet 2 of the key 5).

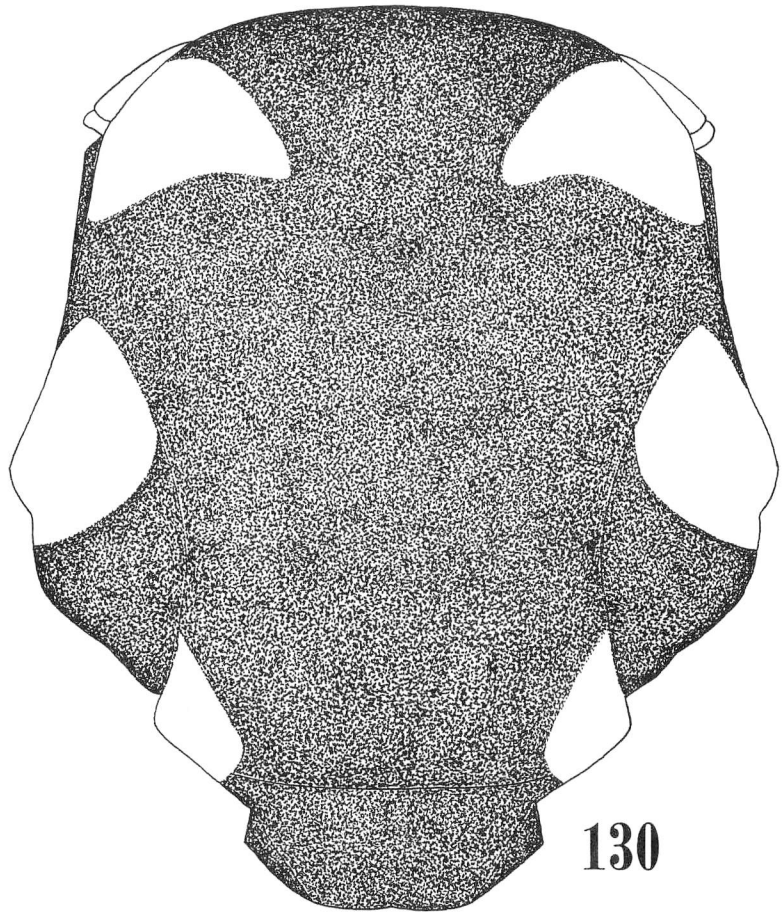
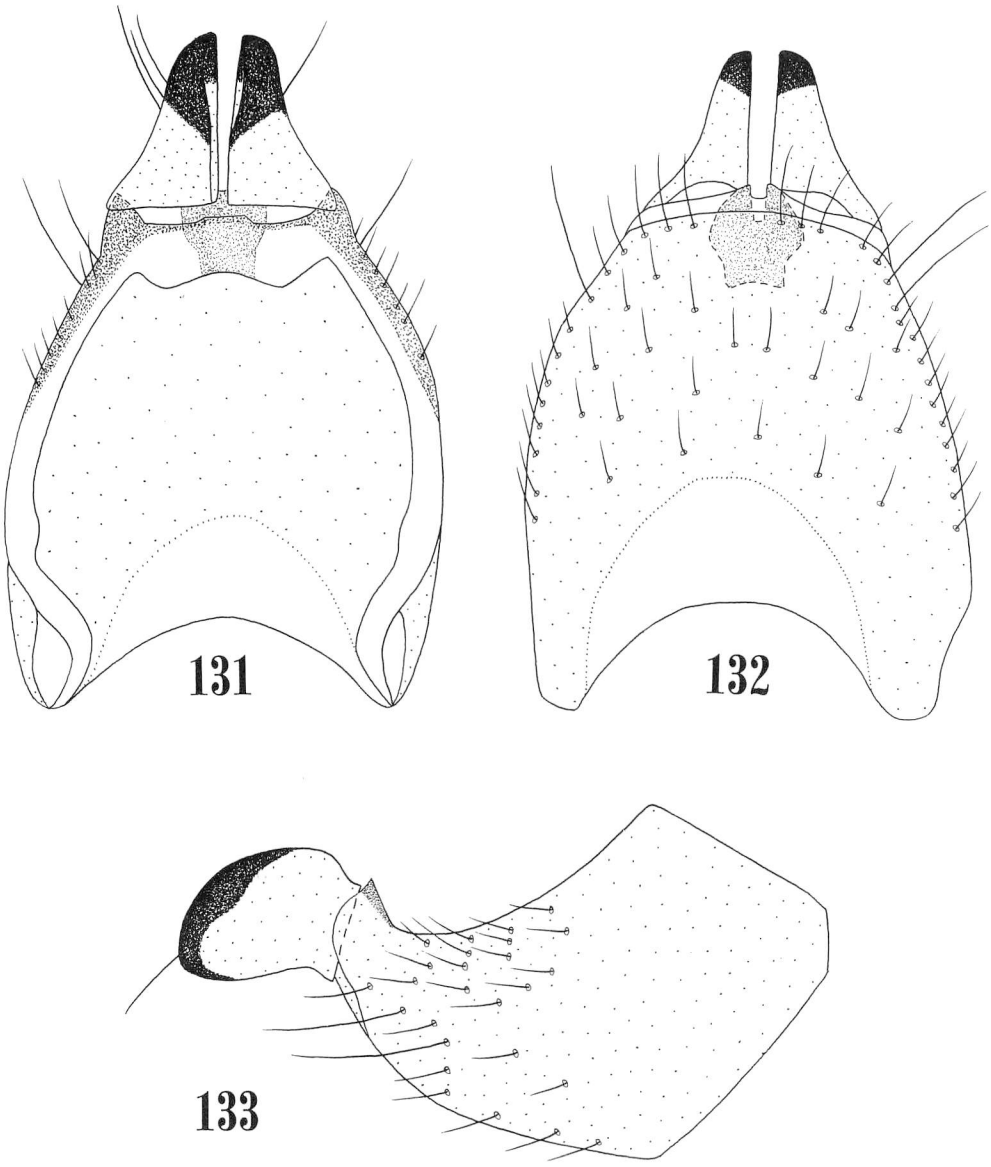


Fig. 130. *Systropus tripunctatus* ZAITZEV, male; mesoscutum and scutellum.

Male. Head: Yellowish brown, but occiput (except narrow area below neck), antennal segmetns 2–3 (often including apical portion of segment 1), and proboscis (except ventral basal part) dark brown to black; clypeus darkened; palpus brown to dark brown; frons, face, cheek, and occiput with pale gray pollen, and mid-upper face, cheek, occiput and palpus pale pilose; antennal segments 1–2 black haired; half width of head 0.9–1.0 times distance from antenna to median ocellus, 1.6–1.8 times width of face at lowest portion from a direct frontal view, 3.7–3.9 times width of frons just above antenna, 2.5–2.8 times width of face at upper end of clypeus, which is 1.4–1.5 times width of frons just above antenna; distance from ridge



Figs. 131–133. *Systropus tripunctatus* ZAITZEV, male; gonocoxites and gonostylus, dorsal, ventral and lateral views.

below proboscis to antenna 1.1–1.3 times that fron antenna to median ocellus; relative lengths of antennal segments 1–3, 216 (195–235) : 100 : 195 (186–205) and their relative widths (in lateral view) 17 (16–18) : 18 (16–21) : 27 (24–30); antennal segment 1, 1.0–1.1 times distance from ridge below proboscis to antenna; N=5.

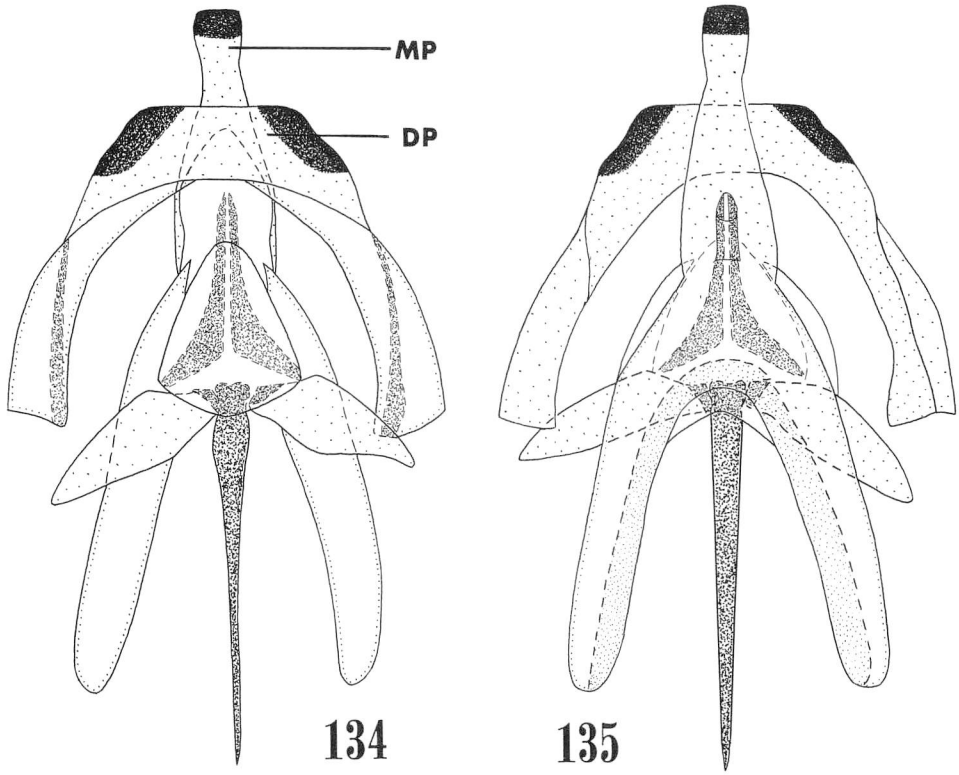
Thorax (Fig. 130): Dark brown to black, with following yellowish brown parts: area around anterior spiracle, propleuron, humeral callus, an elongate spot behind humeral callus, a rectangular or pentagonal spot above posterior part of mesopleuron, and a triangular spot including posterior callus; pale gray pollen is more distinct on pleuron and a median broad stripe (in black part of mesoscutum) (which is divided by a narrow black vitta); thorax pale and black pilose, and pile on metasternum, upper part of pteropleuron, posterior border of scutellum, etc. pale and longer.

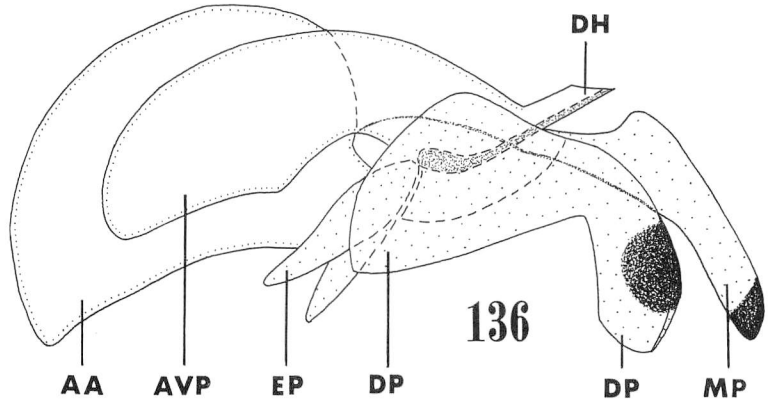
Wing: Membrane faintly tinged with brown; apical portion of subcostal cell darker; veins largely dark brown to black; halter yellowish brown; knob creamy yellow and often with a more or less darkened area on posterior surface; Y 1.5–1.9 times as long as X; Z 0.3–0.4 times as long as Y and 1.0–1.4 times as long as A; C 0.8–1.1 times as long as B; N=5.

Legs: Yellowish brown; mid coxa partly and hind coxa and trochanter largely dark brown to black; hind tibia (except apical lesser 1/2 and ventral basal part), hind tarsus (except posterior surface of tarsomere 1), and often mid femur (except apical part and ventral surface) blackened, due to dense short black pile; mid coxa short black pilose and hind coxa pale pilose; relative lengths of segments (excluding coxa and trochanter) of fore leg 37 (36–38) : 40 (39–42) : 20 (19–21) : 9 (8–9) : 6 (5–7) : 4 (4–5) : 5 (5–6), of mid leg 41 (41–42) : 48 (46–49) : 16 (15–17) : 8 (7–9) : 6 (5–7) : 4 (4–5) : 5 (5–6), of hind leg 100 : 107 (105–112) : 53 (52–54) : 26 (23–27) : 19 (17–21) : 11 (10–12) : 9 (8–9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (9) : 8 (8–9) : 5 (5–6) : 4 (3–4) : 3 (3); N=5.

Abdomen: Yellowish brown; tergum 1 black; each of terga 2–5 with lateral black stripe; tergum 1 with black pile which becomes pale and longer on sides; middle of terga 2–8 (or 2–9) with short recumbent black pile (rest of abdomen chiefly pale yellow recumbent pilose except lateral black stripes).

Male genitalia (Figs. 131–139): Fused gonocoxites (not flattened) in ventral view about as long as wide or somewhat longer than wide, with anterior margin having U-shaped pale part. Gonostylus in dorsal view tapering apically, rounded at apex, and blackened except base; gonostylus (except base) in lateral view elliptical and blackened along posterior margin. In posterior ventral plate, median process in ventral view tapering apically except rounded or rectangular blackened apex; median process in lateral view running obliquely (dorsally) at apical portion and angulate opposite apex of distiphallus; paired lateral processes absent (or fused with median process). Posterior part of dorsal plate rather trapezoid, with posterior margin straight or somewhat concave at middle, and blackened except middle. Tergum 9 (not flattened) wider than long, and with posterolateral process which is long, thin, pointed and darkened. Cercus in posterior view roughly rectangluar, and with large rectangular blackened tubercle starting near inner ventral corner and protruding beyond dorsal outer margin. Sternum 10 rectangular except posterolateral arms, much wider than long, and with anterior margin more or less concave at middle. Specimens dissected: 2♂♂, Mt. Sudo-san





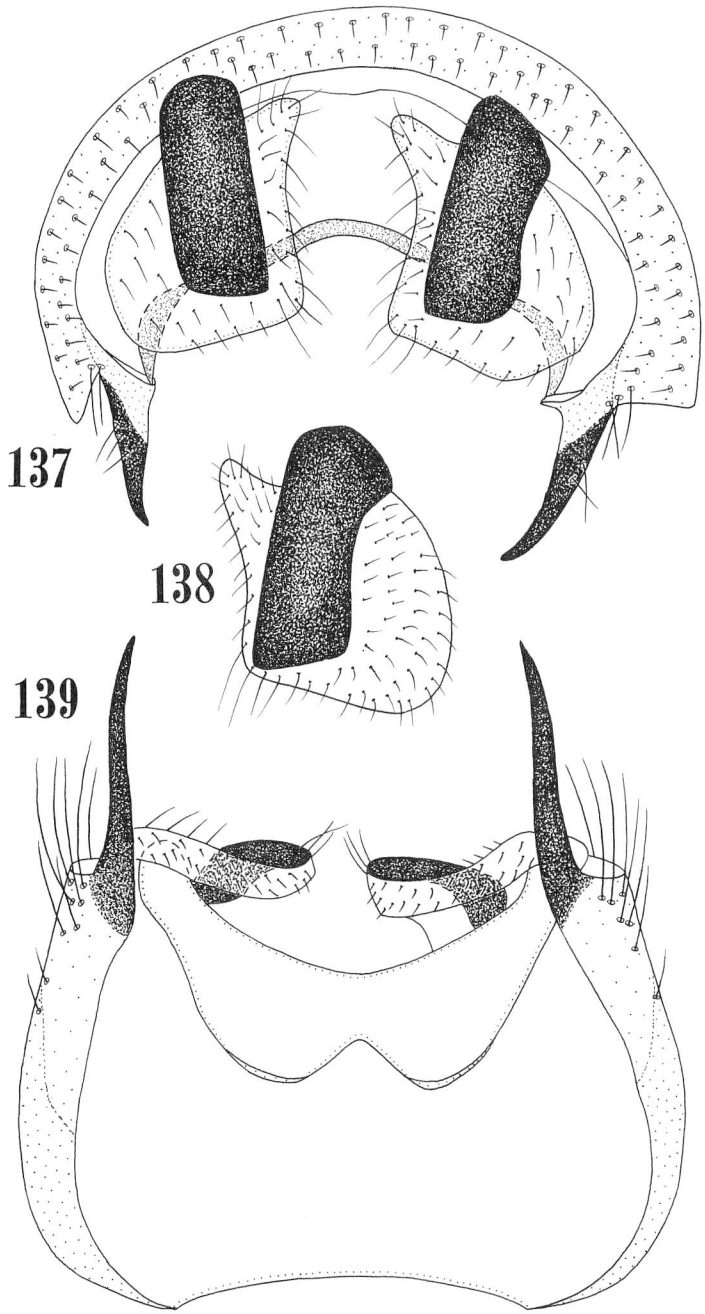
Figs. 134–136. *Systropus tripunctatus* ZAITZEV, male; aedeagus complex, dorsal, ventral and lateral views.

(300–500 m), Kyongsangpuk-ko, Korea, 22 & 24. viii. 1990, A. NAGATOMI.

Length: Body 14.5–19.3 mm; wing 7.4–9.6 mm; hind femur 4.7–6.1 mm.

Female. Similar to male except as follows: Head: In 2 specimens measured, half width of head 3.0–3.6 times width of frons just above antenna and 2.3–2.4 times width of face at upper end of clypeus; relative lengths of antennal segments 1–3, 251 (240–261) : 100 : 227 (225–228) and their relative widths (in lateral view) 19 (17–20) : 21 (20–22) : 31 (30–31).

Legs: Hind tarsomeres 2–3, as well as apical dorsal part of tarsomere 1, yellowish brown

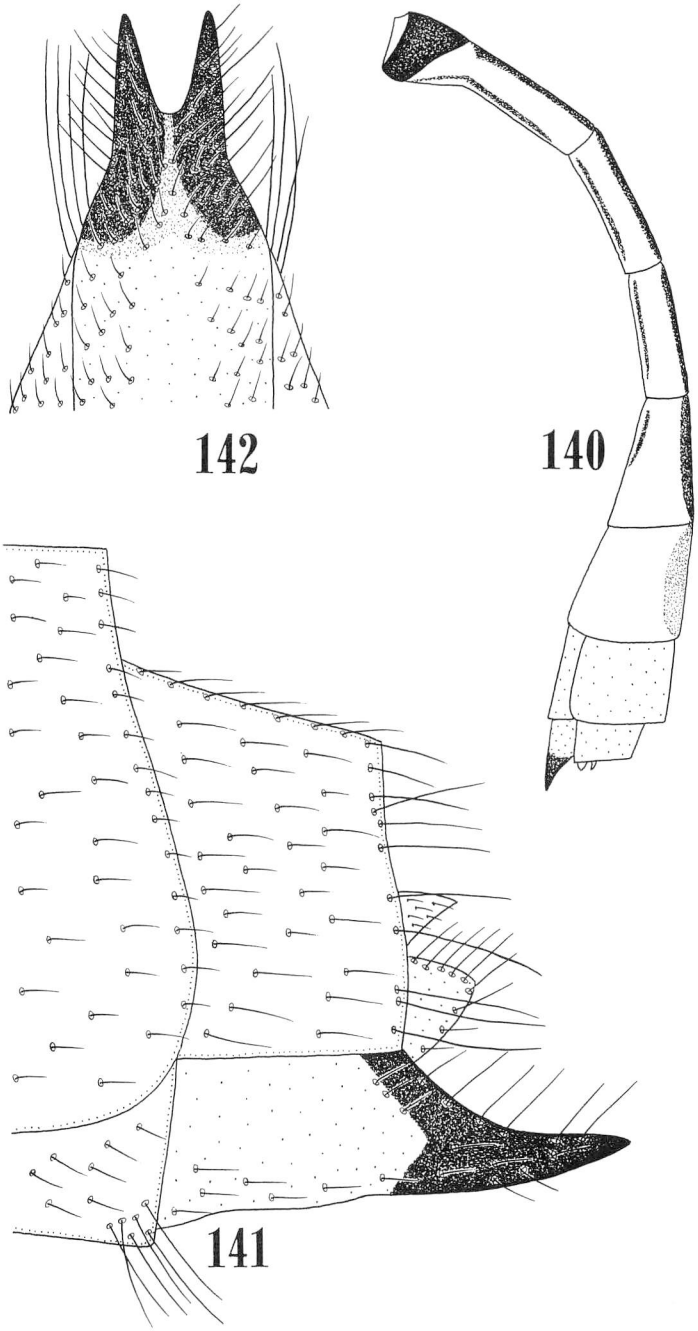


Figs. 137–139. *Systropus tripunctatus* ZAITZEV, male. 137 & 139, tergum 9, cerci and sternum 10, posterior and ventral views; 138, cercus, posterior view.

(this may be so in ♀); relative lengths of segments of fore leg 37 (37) : 39 (38–39) : 20 (20) : 9 (8–9) : 6 (5–6) : 4 (4) : 5 (5), of mid leg 41 (40–41) : 47 (46–47) : 17 (16–18) : 8 (7–8) : 6 (5–6) : 4 (3–4) : 5 (5), of hind leg 100 : 107 (104–109) : 56 (54–57) : 28 (26–29) : 20 (20) : 11 (10–11) : 9 (9) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10

(9–10) : 9 (9) : 6 (5–6) : 4 (3–4) : 3 (3); N=2.

Abdomen (Figs. 140–142): Apical part of sternum 8 lamellate and with two black acute processes which are bluntly pointed at apex and which are longer or not much shorter than the preceding black part according to individual.



Figs. 140–142. *Systropus tripunctatus* ZAITZEV, female. 140, Abdomen, lateral view; 141, apex of abdomen, lateral view; 142, apical portion of sternum 8, ventral view.

Length: Body 17.0–18.8 mm; wing 9.8–10.5 mm; hind femur 5.8–5.9 mm.

Distribution. Siberia and Korea.

Specimens examined (5♂♂, 2♀♀): KOREA: 4♂♂, 2♀♀, Mt. Sudô-san (300–500 m), Kyongsangpuk-dô, 22–24. viii. 1990, A. NAGATOMI; 1♂, Koryo, Hosen, Keiki-dô, 17–19. vii. 1930, T. SHIRAKI.

Systropus sp. A
[=possibly *flavicornis* (ENDERLEIN)] (Figs. 143–156)

It is possible that the specimens (from Taiwan and Thailand) described below as sp. A belong to *flavicornis* Enderlein, 1926 whose type-locality is "Canton", S. China. The occiput is black (except wide area below neck) in sp. A but is pale yellow (except middle) in *flavicornis*. The sp. A may also differ from *flavicornis* in the coloration of mid and hind legs. However, the differences above may fall within individual variation.

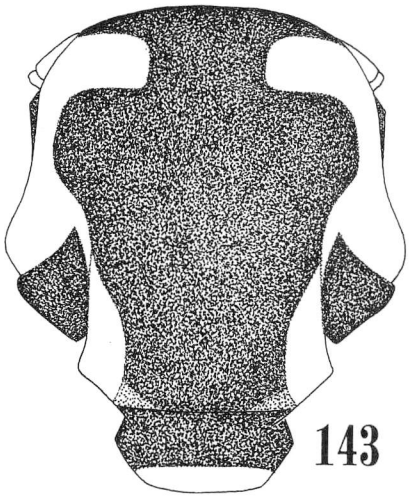
In the original description of *flavicornis*,"Mittelbeine hellgelblich, Schenkel leicht gebräunt, mit Ausnahme des 4. und 5. Fünftels. Hinterbeine: Schenkel rostgelb, Schiene ebenso; 3. Viertel schwarz, 4. Viertel hellgelb. 1. Tarsenglied hellgelb, 2.-4. schwarz, 2. und 3. mit gelber Basis;"

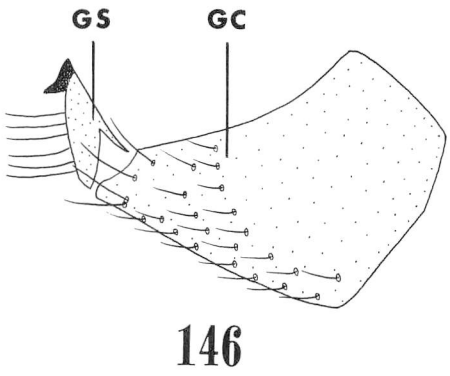
The female sternum 8 of sp. A is very similar to that of *nitobei* but may be distinguished from the latter by having the black area just before mid-apical process larger (Fig. 156). The male genitalia of sp. A are similar to those of *nitobei* and *luridus* but easily distinguished from the latter two by having the characters shown in the couplets 8–9 of the key 10.

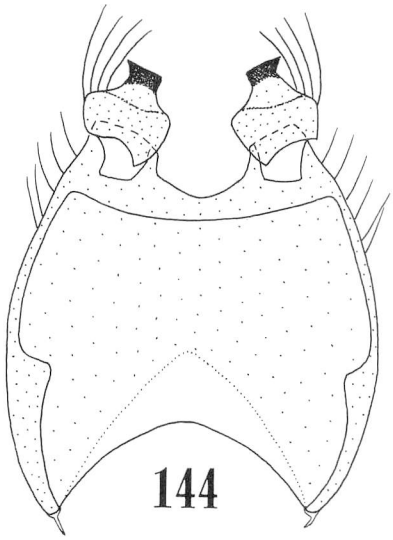
Among the species from Taiwan, the external characters of sp. A are distinguished from those of *aurantispinus* (couplet 5 of the key 6).

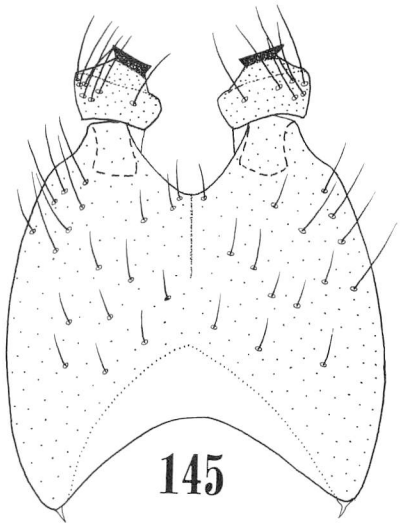
Male. Head: Yellowish brown, but occiput (except wide area below neck), antennal segment 3, and proboscis (except ventral basal part) dark brown to black; face and occiput white gray pollinose; mid-upper face, cheek and occiput pale pilose; antennal segments 1–2 pale haired; half width of head (1) 0.9–1.0 times distance from antenna to median ocellus, (2) 1.7 times width of face at lowest portion from a direct frontal view, (3) 3.7–4.4 times width of frons just above antenna, (4) 2.7 times width of face at upper end of clypeus, which is (5) 1.4–1.7 times width of frons just above antenna; distance from ridge below proboscis to antenna (6) 1.1 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, (7) 263 (250–275) : 100 : 196 (192–200) and their relative widths (in lateral view) (8) 21 (17–25) : 23 (21–25) : 29 (29); N=2 from Taiwan; in 1 specimen from Thailand, (2) 1.8, (4) 2.9, (6) 1.0, (7) 290 : 100 : 220, (8) 20 : 25 : 40.

Thorax (Fig. 143) : Dark brown to black, and with white gray pollen; thorax with yellowish brown parts as follows: lateral border of mesoscutum (including humeral and posterior calli) which is protruded inward behind humeral callus and is interrupted by black triangular patch before posterior callus, posterior border of scutellum, area around anterior spiracle, propleuron, lateral posterior borders of metasternum, and mid-posterior seam of metasternum; pile on thorax pale but that on mesoscutum chiefly black; a median broad more pollinose







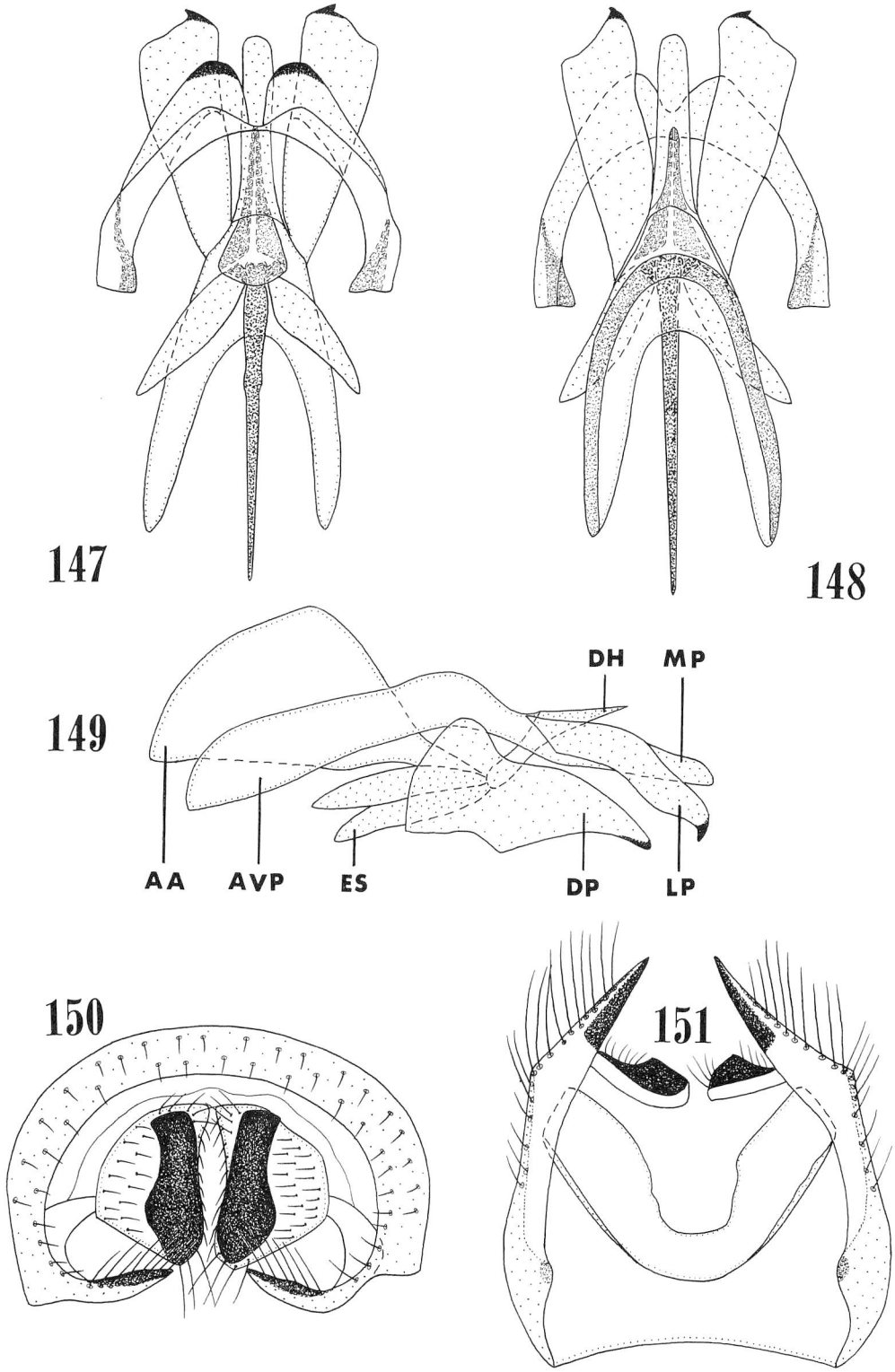


Figs. 143–146. *Systropus* sp. A, male from Taiwan. 143, Mesoscutum and scutellum; 144–146, gonocoxites and gonostylus, dorsal, ventral and lateral views.

stripe tapering posteriorly; pile on thorax chiefly pale but that on black parts of mesoscutum and scutellum chiefly black.

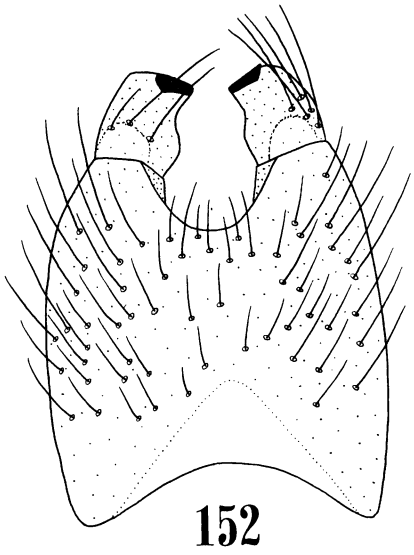
Wing: Membrane brown fumose; veins largely dark brown; halter yellowish brown, and posterior surface of knob darkened, but in 1♂, of 2♂♂, knob wholly yellowish brown; Y 1.8–1.9 times as long as X; Z 0.3 times as long as Y and 1.2–1.3 times as long as A; C 0.7–0.8 times as long as B; N=3 from Taiwan and Thailand; in 1♂ from Thailand, vein R_4 with an incomplete vein in 1st submarginal cell (on 2 wings).

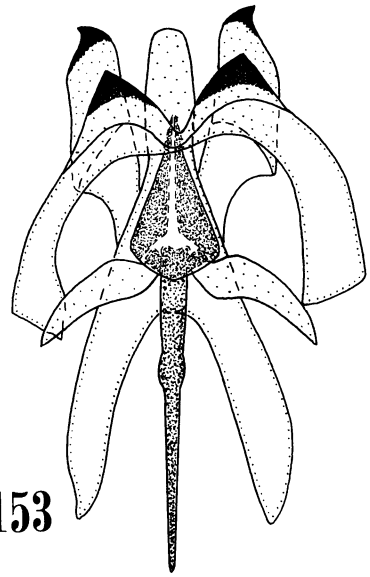
Legs: Yellowish brown; mid and hind coxae largely dark brown to black; hind tibia (except



Figs. 147–151. *Systropus* sp. A, male from Taiwan. 147–149, Aedeagus complex, dorsal, ventral and lateral views; 150–151, tergum 9, cerci and sternum 10, posterior and ventral views.

apex and basal portion) and hind tarsomeres 2–5 blackened; in 1 ♂ of 2 ♂ ♂ on hand, hind tarsomeres 2–5 yellowish brown (this is due to loss of black pile) and basal yellowish brown part of hind tibia over 1/2 as long as tibia; pile on coxa and femur short and recumbent and partly black on mid and hind legs; relative lengths of segments (excluding coxa and trochanter) of fore leg 39 (38–40) : 40 (37–42) : 21 (19–22) : 8 (8) : 6 (6) : 4 (4) : 5 (5), of mid leg 44 (41–46) : 49 (45–52) : 18 (16–19) : 7 (7) : 6 (6) : 4 (4) : 5 (5), of hind leg 100 : 108 (102–113) : 53 (48–57) : 18 (17–18) : 14 (13–14) : 6 (5–6) : 7 (7) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (8–9) : 8 (8) : 6 (5–6) : 4 (3–4) : 3 (3); N =2 from Taiwan.

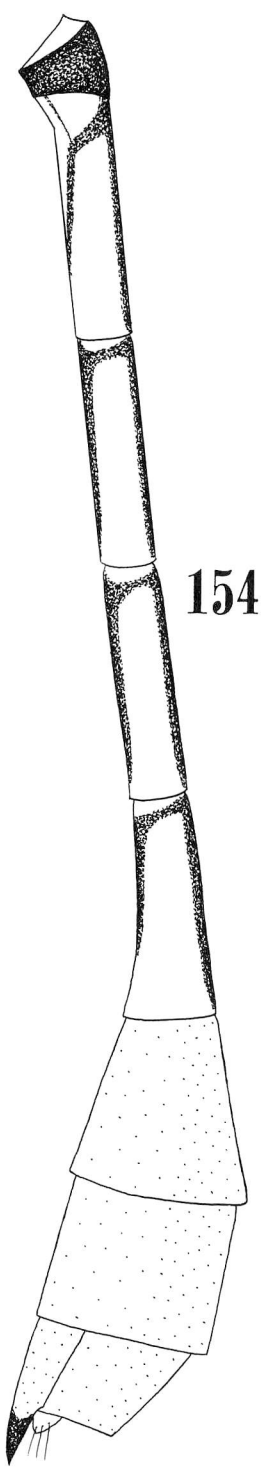


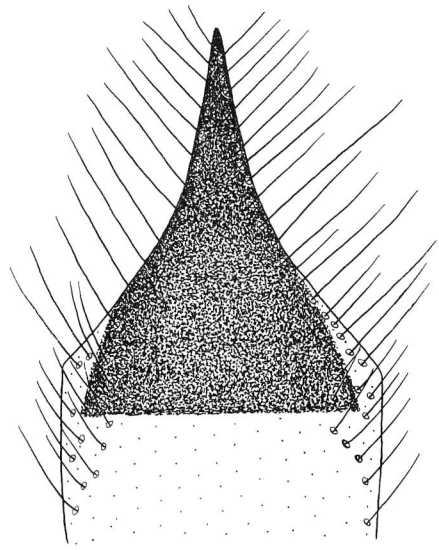


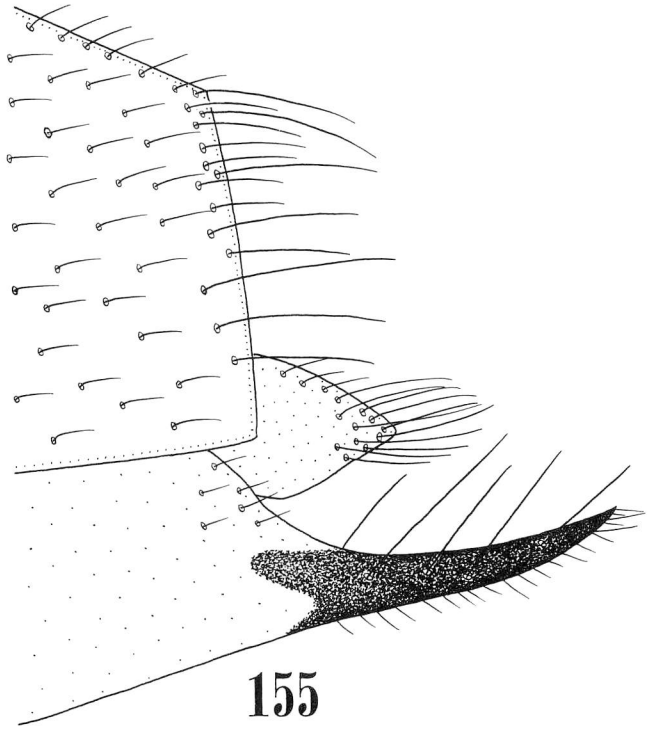
Figs. 152–153. *Systropus* sp. A, male from Thailand. 152, Gonocoxites and gonostylus, ventral view; 153, aedeagus complex, dorsal view.

Abdomen: Yellowish brown; tergum 1 dark brown to black and terga 2–5 with darkened lateral stripes; tergum 1 with short black pile which changes into pale on sides; rest of abdomen short recumbent chiefly black pilose.

Male genitalia (Figs. 144–153): Fused gonocoxites (not flattened) roughly as long as wide, with anterior margin having a V-shaped concavity on pale part, with posterior margin having a pair of wide ventral convexities. Gonostylus in direct ventral view rectangular, longer than wide, wider basally and with apical border blackened; gonostylus with a blackened ventral inner apical spine. In posterior ventral plate, median process log-like, and each lateral process widest before apex, and with a short blackened tooth near postero-inner angle; median and lateral processes long and the latter extending beyond the apex of the former. Posterior part of dorsal plate with a pair of large rounded convexities. Tergum 9 (not flattened) about as long as wide, rectangular, and with posterolateral process which is blackened at dorsal apical portion and pointed. Cercus in posterior view rather trapezoid and with large and wide blackened tubercle which is situated along inner margin of cercus







Figs. 154–156. *Systropus* sp. A, female from Taiwan. 154, Abdomen, lateral view; 155, apex of abdomen, lateral view; 156, apical portion of sternum 8, ventral view.

(except dorsal part of tubercle). Sternum 10 U-shaped and wide. There is a single male specimen from Thailand, whose male genitalia differ from those from Taiwan (2♂♂) in the following points: gonostylus not abruptly narrowed apically in dorsal or ventral view (Fig. 152); lateral process tapering apically (Fig. 153); each posterolateral part of dorsal plate pointed at apex (Fig. 153); median process shorter and wider than in the specimens from Taiwan (Fig. 153). However, the differences above seem to be not significant in separating species. Specimens dissected: TAIWAN: 1♂, Karenkô, 20. vii. - 4. viii. 1919, T. OKUNI, J. SONAN, et al.; 1♂, Alishan (2,000 m), Chir Yi Hsien, M. Taiwan, 7. ix. 1986, K. BABA. THAILAND: 1♂, Doi Suthep, near Chieng Mai, 7. x. 1973, A. NAGATOMI.

Length: Body 20.8–23.5 mm; wing 12.3–12.7 mm; hind femur 7.5–8.2 mm; N=3.

Female. Similar to male except as follows: Head (antennal segments 2–3 lacking): Frons darkened; in 1 specimen from Taiwan, half width of head 3.4 times width of frons just above antenna, and 2.8 times width of face at upper end of clypeus which is 1.2 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.2 times that from antenna to median ocellus.

Legs: relative lengths of segments of fore leg, 37:38:19:7:6:4:5, of mid leg 42:47:17:6:5:4:5, of hind leg 100:105:48:16:12:5:6 and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 8:8:5:4:3; N=1.

Abdomen (Figs. 154–156) : Apical black part of sternum 8 tapering apically and ending as a long pointed process which is somewhat thickened in lateral view.

Length: Body 23.4 mm; wing 12.9 mm; hind femur 7.9 mm.

Distribution. Taiwan and Thailand.

Specimens examined (3♂♂, 1♀): TAIWAN (2♂♂, 1♀): 1♂, Karenkô, 20. vii.–4. viii. 1919, T. Okuni, J. Sonan, et al.; 1♂, 1♀, Alishan (2,000 m), Chia Yi Hsien, M. Taiwan, 7. ix. 1986, K. BABA. THAILAND (1♂): 1♂, Doi Suthep, near Chieng Mai, 7. x. 1973, A. NAGATOMI.

Systropus sp. B
[=possibly *flavipectus* (ENDERLEIN)] (Figs. 157–170)

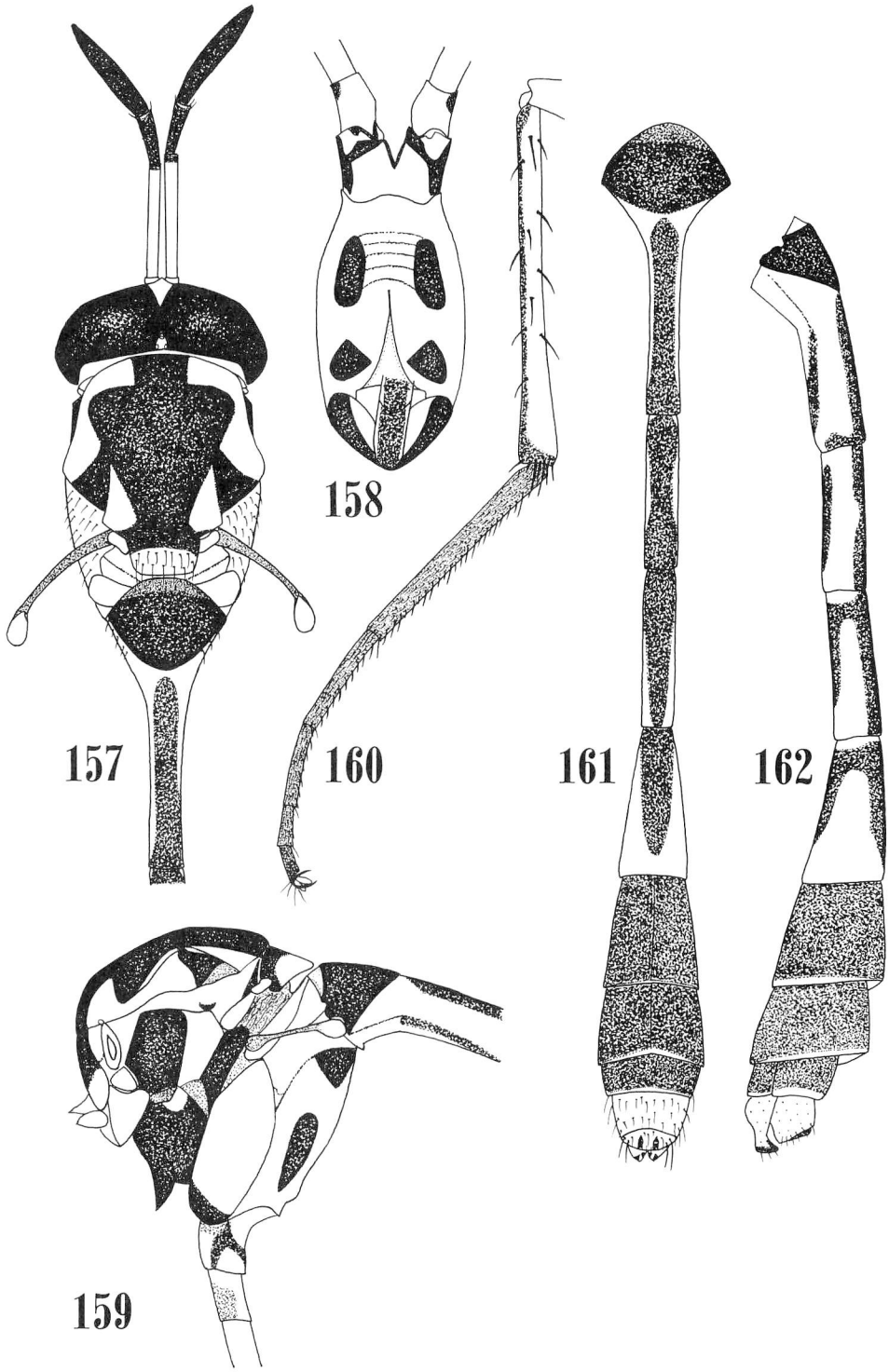
A single male specimen (from Thailand) described below as sp. B may possibly belong to *flavipectus* Enderlein, 1926 whose type-locality is Sikkim, India.

In *flavipectus* (based on 1♂; after ENDERLEIN, 1926 [p. 73]), the abdominal segments 5–6 are black, but in sp. B, the segments 6–7 (except narrow posterior margins) and segment 8 (except posterior part) are dark brown to black. Except for the character above, the sp. B agrees well with the original description of *flavipectus*.

The male genitalia of sp. B are very similar to those of *tripunctatus* but are easily distinguished from the latter by having the characters shown in the couplet 3 of the key 10.

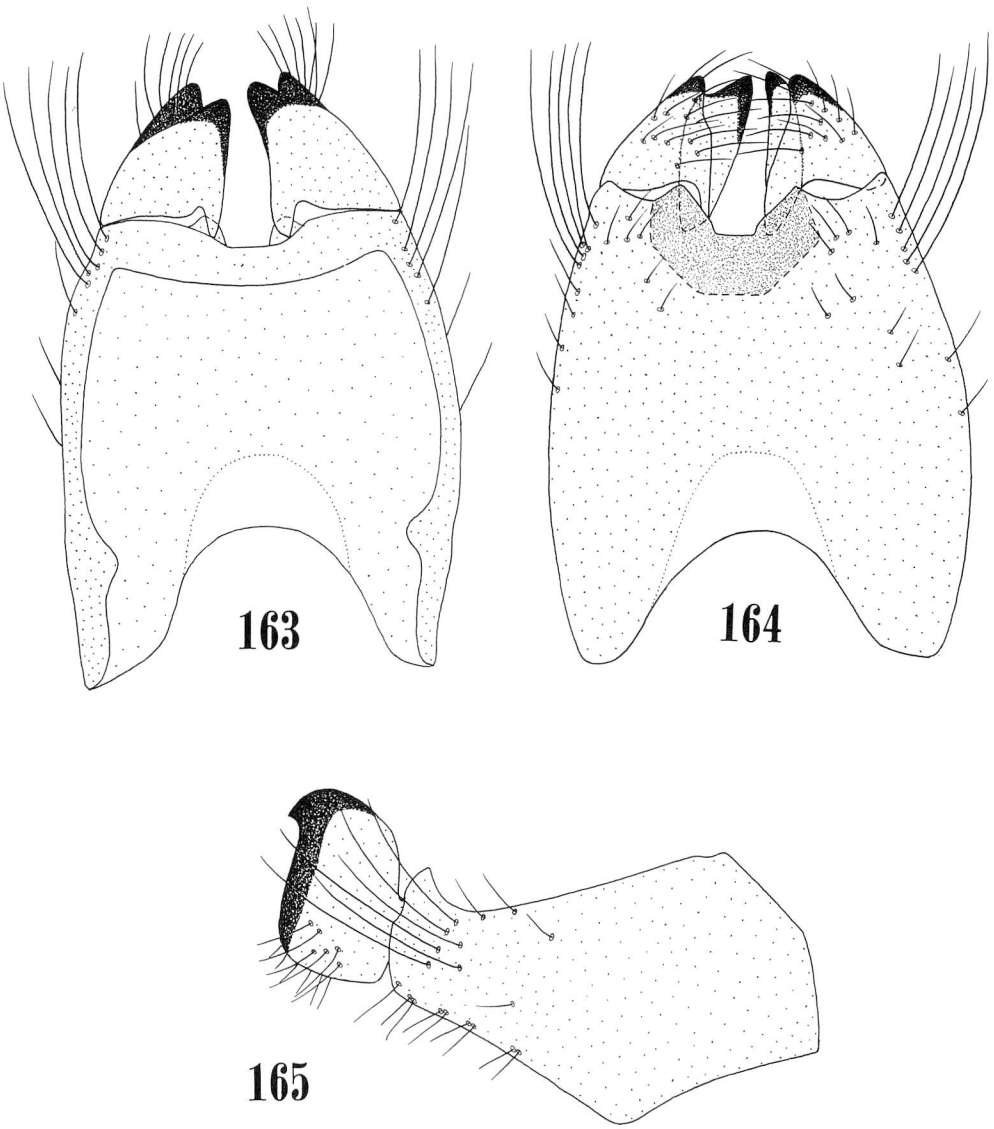
Among the species known from Thailand, sp. B may be distinguished from *polistoides* by having the characters shown in the couplet 2 of the key 7.

Male. Head (Fig. 157): Whitish yellow, but occiput (except wide area below neck),



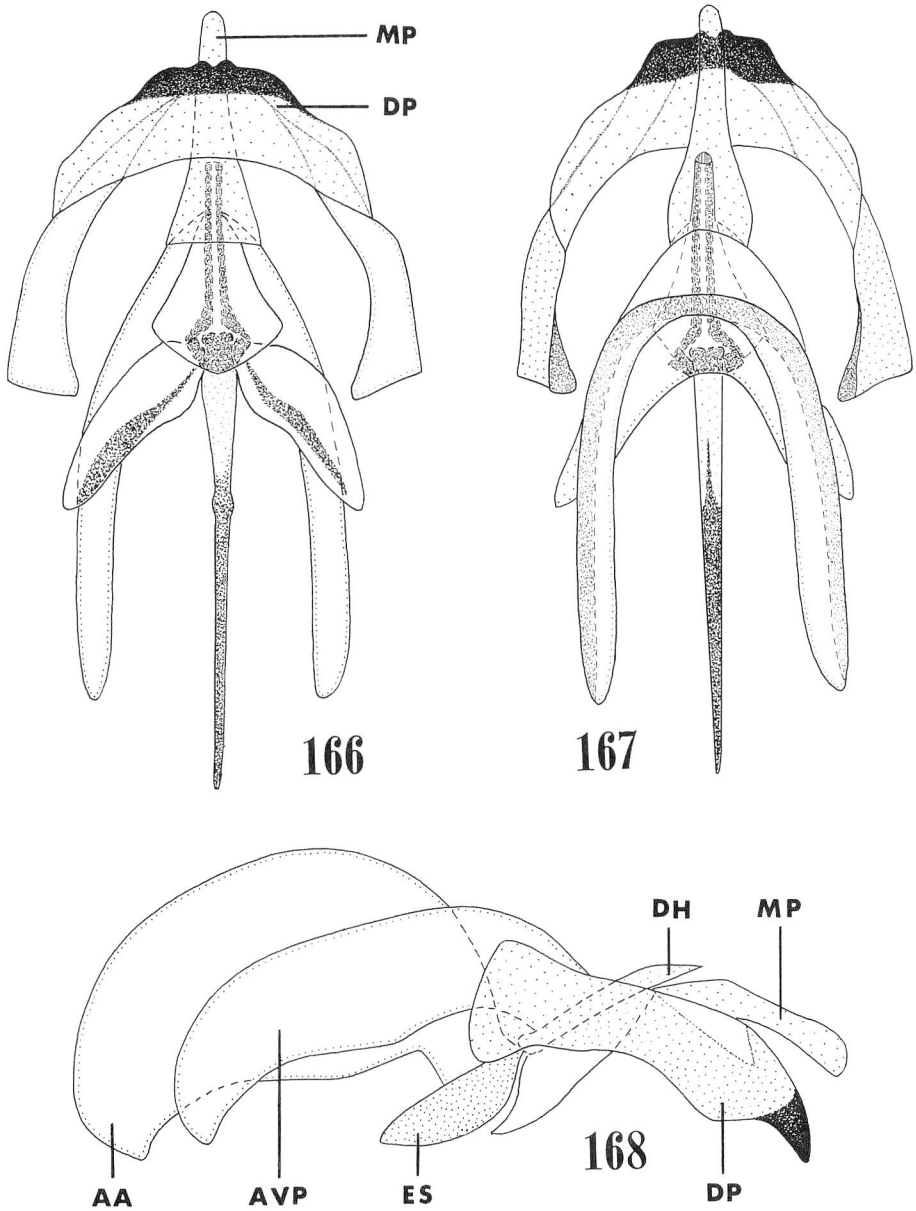
Figs. 157–162. *Systropus* sp. B, male. 157, Head, thorax and part of abdomen, dorsal view; 158, metasternum, etc., posteroventral view; 159, thorax, base of hind leg, and base of abdomen, lateral view; 160, hind tibia and tarsus, anterior view; 161–162, abdomen, dorsal and lateral views.

antennal segments 2–3, and proboscis (except ventral basal part) black, and ocellar triangle brown; mid-upper face, cheek, occiput, antennal segment 1 (except apex), and palpus with pale pile which is longer on lower occiput; antennal segment 2 and apex of segment 1 with black hairs; frons, face, cheek and occiput with white gray pollen; half width of head equal to distance from antenna to median ocellus, 1.8 times width of face at lowest portion from a direct frontal view, 4.2 times width of frons just above antenna, and 2.5 times width of face at upper end of clypeus, which is 1.7 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.3 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 282 : 100 : 255 and their relative widths (in lateral view) 23 : 27 : 41; antennal segment 1 as long as distance from ridge below proboscis to antenna.



Figs. 163–165. *Systropus* sp. B, male; gonocoxites and gonostylus, dorsal, ventral and lateral views.

Thorax (Figs. 157–159): Whitish (or pale) yellow, and white gray pollinose. Thorax with black parts as follows: in mesoscutum, median large stripe and triangular patch above wing base; meso-, sterno-, meta- (=pleurotergite), and lower part of pteropleuron, and lower border of hypopleuron; in metasternum, two pairs of spots of which anterior pair is oblong; basal border of scutellum. In median large mesoscutum stripe, anterior part longer than wide and parallel-sided (except anterior end which is widened) and posterior trapezoidal part widely separated from lateral margin of mesoscutum at protruding lateral end. Thorax with pale pile which is very short on mesoscutum and becomes black on anterior part of

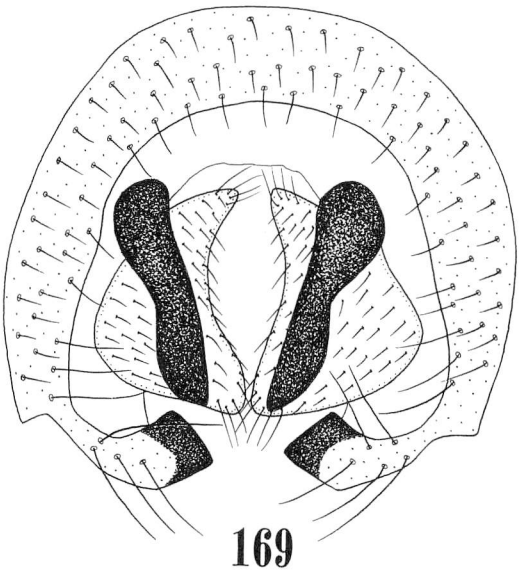


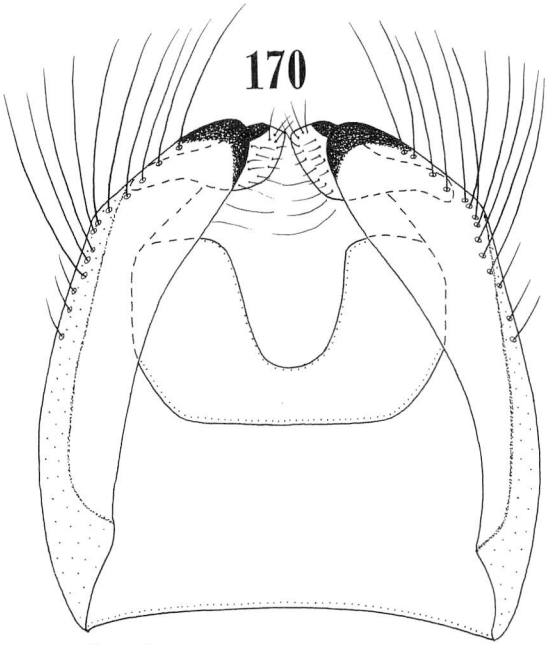
Figs. 166–168. *Systropus* sp. B, male; aedeagus complex, dorsal, ventral and lateral views.

mesopleuron and on black parts in mesoscutum, scutellum and metasternum.

Wing: Membrane faintly brown fumose; veins largely dark brown; halter yellowish brown, with knob creamy whitish yellow; Y 2.0 times as long as X; Z 0.2 times as long as Y and 0.8 times as long as A; C 0.7 times as long as B.

Legs (Fig. 160): Yellowish brown. Mid and hind coxae and hind trochanter partly black. The following parts are blackened due to dense short black recumbent pile: anterior surface





Figs. 169–170. *Systropus* sp. B, male; tergum 9, cerci and sternum 10, posterior and ventral views.

of mid trochanter and that (except apical portion) of mid femur; in hind leg, dorsal surfaces of femur and tibia, ventral surface of tarsomere 1, and whole surface of tarsomeres 2–5; relative lengths of segments (excluding coxa and trochanter) of fore leg 41 : 44 : 23 : 9 : 6 : 5 : 6, of mid leg 46 : 53 : 19 : 9 : 6 : 5 : 6, of hind leg 100 : 105 : 59 : 29 : 22 : 11 : 10 and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 10 : 9 : 6 : 4 : 3.

Abdomen (Figs. 161, 162): Yellowish brown. Tergum 1, segments 6–7 (except narrow posterior margins) and segment 8 (except posterior part) black. Due to dense short black recumbent pile, the following parts are blackened: in each of terga 2–5, median broad stripe and lateral narrow stripe; in each of terga 4–5, anterior part.

Male genitalia (Figs. 163–170): Fused gonocoxites somewhat longer than wide, with anterior margin having a U-shaped concavity or pale part, with posterior margin having two pairs of short ventral convexities. Gonostylus in dorsal or ventral view with two apical blackened ridges; gonostylus in lateral view wider than long, wider apically, blackened at apical border, and with an apical rounded dorsal process. In posterior ventral plate, median process in dorsal or ventral view log-like and tapering apically, and lateral processes absent. Posterior part of dorsal plate rather trapezoid, with posterior margin having one pair of median short convexities, and with posterior border blackened. Tergum 9 (not flattened) about as long as wide, somewhat wider anteriorly and with posterolateral wide process whose apical part is blackened and angulate in posterior view. Cercus in posterior view rather triangular and with large blackened tubercle whose dorsal end protrudes beyond margin of cercus. Sternum 10 U-shaped and wide. Specimen dissected: 1 ♂, see below.

Length: Body 19.5 mm; wing 10.0 mm; hind femur 5.9 mm.

Distribution. Thailand.

Specimen examined (1 ♂): 1 ♂, Fang, near Chieng Mai, 8. x. 1973, A. NAGATOMI.

Systropus sp. C
[=possibly *formosanus* (ENDERLEIN)] (Figs. 171–183)

This species may belong to *formosanus* ENDERLEIN, 1926 (Wien. Ent. Ztg., 43: 77) (type-locality: Taiwan ["Toyenmongai bei Tainan"]).

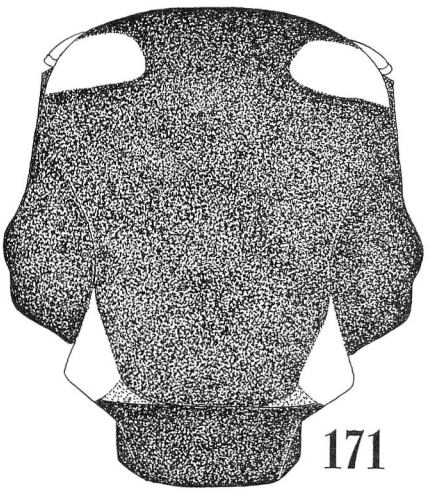
According to figs. 3–4 in HENNIG (1941), no significant difference may be seen between *formosanus* (so determined by HENNIG, 1941) and sp. C in the shape of gonostylus and cercus (including blackened tubercle).

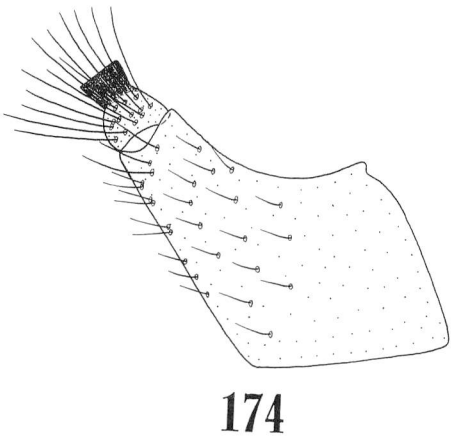
In the original description of *formosanus,* "Mittel- und Hinterschenkel rostgelb", whereas in sp. C, mid femur (except apical portion) is darkened.

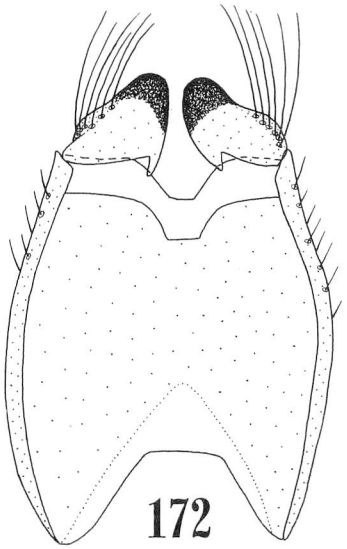
According to the original description of *formosanus,* the female sternum 8 is characterized as follows: "Subgenitalplatte des ♀ hinten gerade abgestutzet und an den Seitenecken mit je einem zahnartigen, nach hinten überstehenden Fortsatz." However, there is no female specimen on hand in sp. C.

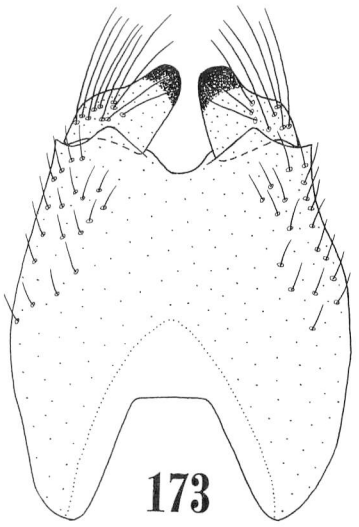
The male genitalia of sp. C are very similar to those of *aokii* and *suzukii* but are distinguished from the latter two by having the characters shown in the couplet 11 of the key 10.

Among the species from Taiwan, the external characters of sp. C are similar to those of *aokii* but are distinguished from the latter by having the following characters: the lateral border of mesoscutum (except humeral and posterior calli and a spot just behind humeral callus) dark brown to black, that is, middle lateral yellowish brown spot absent; hind tibia (except apical part) darkened and the larger parts of mid and hind trochanters dark brown to black.









Figs. 171–174. *Systropus* sp. C, male from Taiwan. 171, Mesoscutum and scutellum; 172–174, gonocoxites and gonostylus, dorsal, ventral and lateral views.

Among the 12 species in this paper, sp. C is characterized as follows: a middle lateral yellowish brown spot (before wing base) is absent on mesoscutum.

The specimens from Taiwan (Figs. 171–180)

Male. Head: Ocellar triangle, frons, face, cheek and palpus yellowish brown (but clypeus may be darker); occiput, antennal segments 1–3, and proboscis dark brown to black; head with pale gray pollen which may be indistinct or absent on appendages; upper face, parafacials, cheek, vertex, and occiput pale (or pale yellow) pilose and antennal segments 1–2 black haired; half width of head (1) equal to distance from antenna to median ocellus, (2) 1.8–1.9 times width of face at lowest portion from a direct frontal view, (3) 4.1–4.6 times width of frons just above antenna, and (4) 2.5–3.0 times width of face at upper end of clypeus, which is (5) 1.5–1.6 times width of frons just above antenna; distance from ridge below proboscis to antenna (6) 1.2 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, (7) 254 (227–292) : 100 : 211 (180–233) and their relative widths (in lateral view) (8) 18 (13–21) : 20 (13–21) : 36 (33–38); antennal segment 1, (9) 0.9–1.0 times as long as distance from ridge below proboscis to antenna; N=2.

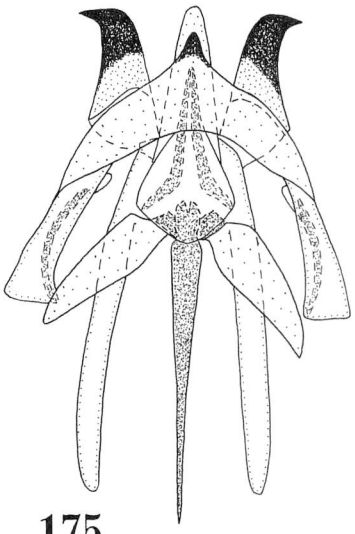
Thorax (Fig. 171): Dark brown to black, and pale gray pollinose, but in mesoscutum, humeral callus, an elongate spot behind humeral callus and a triangular spot including posterior callus yellowish brown as well as propleuron and area around anterior spiracle; thorax with pale pile which may change into black on scutellum and black part of mesoscutum.

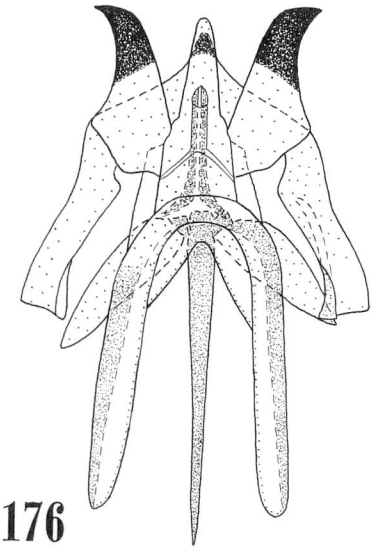
Wing: Membrane deeply tinged with brown; veins dark brown; halter yellowish brown, but posterior part of knob (except apical border) blackened; Y 1.4–1.9 times as long as X; Z 0.2–0.4 times as long as Y and 1.0–1.6 times as long as A; C 0.7–0.9 times as long as B; N=2.

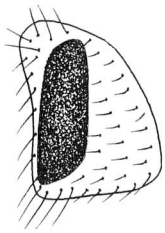
Legs: Yellowish brown, but coxae, and larger parts of mid and hind trochanters dark brown to black; hind tarsomeres 2–5 including apical part of tarsomere 1 (which varies in length with individual) and hind tibia (except apical part and ventral basal part which varies in length with individual) darkened; dorso-anterior surface of hind femur more or less darker; mid femur (except apical portion) darkened; coxae pale gray pollinose and pale pilose; mid femur and dorso-anterior surface of hind femur with black tomentum-like pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 35 (35) : 39 (38–39) : 19 (19) : 7 (7) : 6 (6) : 5 (4–5) : 6 (5–6), of mid leg 38 (37–39) : 45 (44–45) : 16 (15–16) : 7 (7) : 6 (5–6) : 5 (4–5) : 6 (5–6), of hind leg 100 : 108 (107–108) : 53 (52–53) : 27 (25–29) : 20 (18–22) : 10 (9–11) : 10 (8–11) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (9) : 9 (8–9) : 7 (6–7) : 4 (4) : 4 (3–4); N=2.

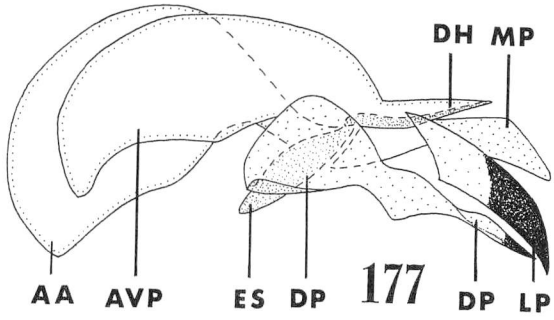
Abdomen: Yellowish (or reddish) brown; tergum 1 dark brown to black, and pale gray pollinose; sternum 1 with a dark brown tinge and pale gray pollen; terga 2–6 with lateral narrow darker stripes which disappear or are indistinct in certain lights; sternum 1 and sides of tergum 1 with pale pile; middle of tergum 1 with short black hairs; rest of abdomen short recumbent pale yellow pilose, but middle surface of terga 2–9 with black tomentum-like pile.

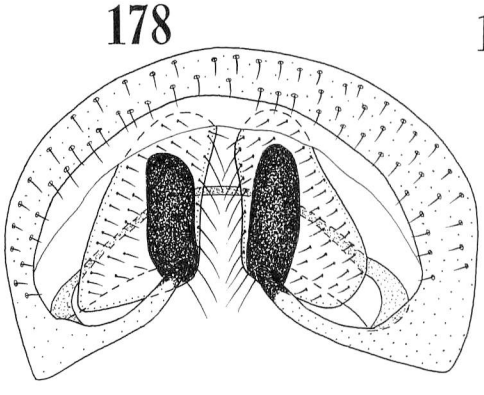
Male genitalia (Figs. 172–180): Fused gonocoxites (not flattened) longer than wide, with V-shaped pale anterior part and with posterior margin having a gentle median concavity.

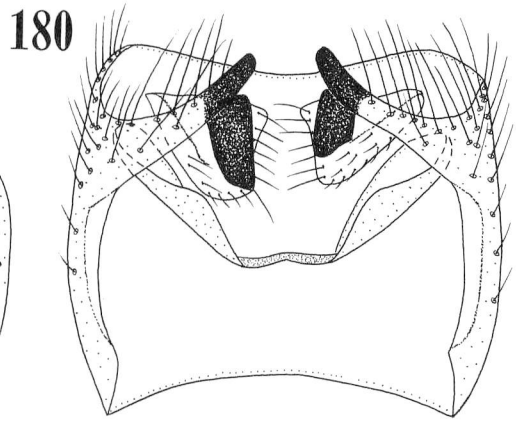




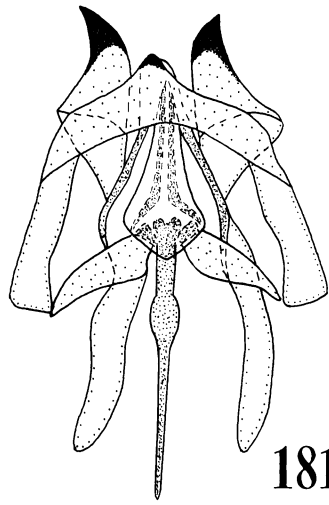








Figs. 175–180. *Systropus* sp. C, male from Taiwan. 175–177, Aedeagus complex, dorsal, ventral and lateral views; 178 & 180, tergum 9, cerci and sternum 10, posterior and ventral views; 179, cercus, posterior view.



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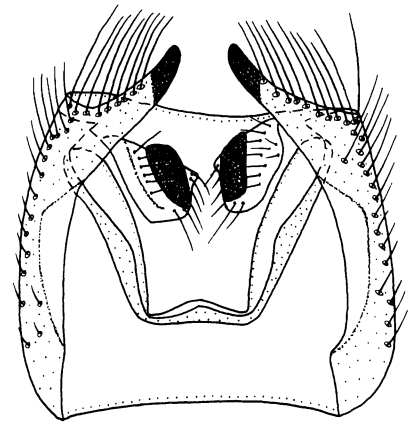

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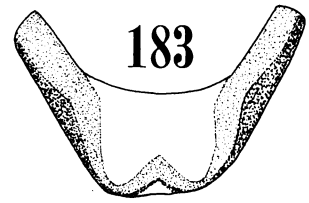

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Figs. 181–183. *Systropus* sp. C, male from Japan. 181, Aedeagus complex, dorsal view; 182, tergum 9, cerci and sternum 10, ventral view; 183, sternum 10, dorsal view.

Gonostylus in dorsal (or ventral) view short, with apex rounded, with outer margin waved, and with apical portion blackened; gonostylus with a minute apical ventral tooth which is seen in some angle of view. In posterior ventral plate from dorsal or ventral view, median and lateral processes tapering apically, and the apex of the latter directed outward and pointed; median process not extending beyond the apex of lateral process; apical portion of each lateral process blackened. Dorsal plate V-shaped and with a blackened acute mid-posterior process. Tergum 9 (not flattened) rectangular, somewhat wider than long, and with posterolateral process which is blackened at apical portion and rounded at apex. Cercus in posterior view rather angulate at ventral two corners, rounded at dorsal margin, and with a wide blackened tubercle whose ventral portion is situated along inner margin of cercus. Sclerotized sternum 10 U-shaped and with middle portion thin. Specimen dissected: 1♀, Taipei, 16. vii. 1990, K. KIRITANI.

Length: Body 25.3–26.7 mm; wing 11.7–12.6 mm; hind femur 7.7–7.8 mm.

Female. Unknown.

The specimens from Japan (Figs. 181–183)

Among the Japanese species, sp. C is similar to *suzukii* but easily distinguished from it in the following points: Lateral border of mesoscutum dark brown to black (except for humeral and posterior calli and a transverse patch just behind humeral callus); apical half of

tarsomere 1 and basal over half of mid femur dark brown to black, as well as whole surfaces of mid and hind trochanters and whole surfaces of hind tarsomeres 2–5.

The specimens from Japan fit the description of those from Taiwan except as follows: Male. Head: In 6 specimens measured, half width of head 1.0–1.1 times distance from antenna to median ocellus, 1.6–1.9 times width of face at lowest portion from a direct frontal view, 4.0–4.6 times width of frons just above antenna, 2.4–2.7 times width of face at upper end of clypeus, which is 1.5–1.8 times width of frons just above antenna; distance from ridge below proboscis to antenna 1.3–1.4 times that from antenna to median ocellus; relative lengths of antennal segments 1–3, 242 (206–264) : 100 : 187 (156–218) and their relative widths (in lateral view) 18 (16–21) : 16 (13–18) : 33 (28–41); antennal segment 1 as long as distnace from ridge below proboscis to antenna; thus, probably no significant structural difference is seen between the specimens from Japan and Taiwan.

Wing: Posterior surface of halter knob without blackened part (in the specimens from Taiwan, it has a distinct blackened part); in 6 specimens measured, Y 2.2–2.8 times as long as X (in 2♂♂ from Taiwan, 1.4–1.9 times); in 2♂♂ of 6♂♂ (from Japan), vein R_4 with an incomplete aberrant vein in 1st submarginal cell on 1 or 2 wings.

Legs: Relative lengths of segments of fore leg 36 (34–37) : 39 (38–40) : 19 (18–19) : 7 (6–7) : 5 (5) : 4 (4–5) : 5 (5), of mid leg 39 (37–40) : 45 (44–46) : 16 (15–17) : 6 (6–7) : 5 (5) : 4 (4–5) : 5 (5–6), of hind leg 100 : 106 (103–111) : 54 (50–56) : 25 (21–29) : 19 (18–21) : 9 (8–10) : 9 (9–10) and in hind leg viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 9 (9) : 9 (8–9) : 6 (5–6) : 4 (4–5) : 4 (3–4); N=6; thus, no significant difference is seen in relative lengths and widths of leg segments between the specimens from Japan and Taiwan.

Male genitalia (Figs. 181–183): Two males of Japan differ from 1♂ of Taiwan as to the genitalia in the following points: mid-apical part of dorsal plate not pointed but rounded; sternum 10 acutely protruded anteriorly. However, the differnces above seem to be not significant in separating species. Specimens dissected: 1♂, Bômura-Ushikoba, Hira Mts., Shiga Pref., 15. ix. 1989, N. TAMAKI; 1♂, Ishido-juku, Kitamoto, Saitama Pref., 28. vii. 1990, I. MAKIBAYASHI.

Length: Body 19.4–22.2 mm (N=4); wing 9.6–11.2 mm (N=6); hind femur 6.1–7.1 mm (N=6).

Female. Unknown.

Japanese name: Taiwan-haraboso-tsuriabu.

Distribution. Taiwan and Japan (Honshu).

Specimens examined (8♂♂): TAIWAN (2♂♂): 1♂, Takeya, Horisha, 8. vii. 1940, A. AOKI; 1♂, Taipei, 16. vi. 1990, K. KIRITANI. JAPAN (HONSHU) (6♂♂): *Saitama Pref.* (2♂♂): 2♂♂, Ishido-juku, Kitamoto, 28. vii. 1990, I. MAKIBAYASHI. *Shiga Pref.* (1♂): 1♂, Bômura-Ushikoba, Hira Mts., 15. ix. 1989, N. TAMAKI. *Osaka Pref.* (3♂♂): 3♂♂, Nose-Myoken, 18. ix. 1963, A. TANAKA.

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