

# A New Dorilaid Parasite of the Zigzag-striped Leafhopper, *Inazuma dorsalis* (Motschulsky) and Notes on Other Paddy-field Inhabiting Dorilaidae (Diptera).

Kenji KOIZUMI

イナズマヨコバイに寄生するアタマアブ, ならびに水田の  
アタマアブ類について

小 泉 憲 治

The zigzag-striped leafhopper, *Inazuma dorsalis*, is a species familiar as an injurious pest to the rice plant and also as a vector of the dwarf disease of it. But very little is known about the natural enemies of this leafhopper and there is no record of the Dorilaid parasite. Through the rearing of this leafhoppers, I have had a parasitic Dorilaidae in the considerable percentage of parasitism.

In the present paper I intend to describe this as new species and at the same time give the notes and descriptions on the paddy-field inhabiting Dorilaidae. To date, I have observed eight species of this family in the paddy-fields mainly in the south-western Japan. Four of them are parasitic on *Nephotettix cincticeps* Uhler as stated in my previous paper, one is parasitic on *Inazuma dorsalis* and the remaining three are not certain concerning their host relations yet, but they are no doubt parasitic on the leafhoppers injurious to the rice plant.

## A key to the paddy-field inhabiting Dorilaidae.

1. Stigma absent. Submetallic black species. .... *Alloneura*\* 2.
- Stigma present. Opaque brownish species. .... *Eudorylas*\* 6.
2. Humeri black. .... 3.
- Humeri yellow-white. .... 4.
3. Abdomen lightly pollinose on the dorsum, distinctly gray pollinose on the sides and covered with rather dense, short appressed hairs. Wings lightly but distinctly fumose. Male genitalia small in size, about one third the length of the fifth abdominal segment, without vertical cleft, with only an apical membranous area; claspers yellow, distal portion smooth. Ovipositor small, piercer short, subequal to the base, upcurved and extending to the middle of the fourth abdominal segment. .... *Alloneura oryzaetora* (Koizumi).
- Abdomen entirely shining metallic black, without gray on the sides and covered with rather sparse, long erect hairs. Wings entirely hyaline. Male genitalia medium in size, one half the length of the fifth abdominal segment and with a vertical cleft on the dorsum; claspers black, distal portion dilated (Fig. 1 D). Ovipositor large, piercer long and slender, one and one half times as long as the base, undercurved and extending to the posterior margin of the second abdominal segment (Fig. 1 E). .... *Alloneura inazumae* n. sp.
4. Hind femora with outstanding postero-ventral cilia of delicate pale hairs. Tarsi

\* The generic name *Alloneura* Rondani is used in the place of *Tömösvaryella* Aczél to comply with the criticism of Collin (1945, Ent. mon. Mag., 81:3), and *Eudorylas* Aczél is used in the strict sense as designed by Collin (1956, Opusc. Ent., 21:155).

- black. Hind trochanters of male without short spines at the base beneath. Male genitalia with broad and triangular claspers (Fig. 2D). ..... *Alloneura itoi* n. sp.
- Hind femora without such cilia. Tarsi yellow. Hind trochanters of male with four to five distinct short spines at base beneath. Male genitalia with long and slender claspers (Figs. 3D, 4D). ..... 5.
5. Generally shining black species. Male: from a ventral view of genitalia, the ninth segment is distinctly elongate, about two times as long as the wide and with a deep V-shaped cleft on the posterior margin and a distinct longitudinal groove down the middle (Fig. 3D). Female: the piercer of ovipositor nearly straight or slightly undercurved (Fig. 3E). ..... *Alloneura coquillettii* (Kertész)
- Subshining black, faintly dusted species. Male: the ninth segment is not elongate, about as long as wide and without a longitudinal groove (Fig. 4D). Female: the piercer of ovipositor undercurved (Fig. 4E). ..... *Alloneura sylvatica* (Meigen).
6. Legs chiefly yellow, median dorsal surface of femora and distal subsegment of tarsi are black. The third segment of antennae light yellow, bristles of second segment very minute. Male genitalia with a longitudinal cleft extending down dorsum to right of midline and from a ventral view, a moderately large membranous area of apical portion of eighth segment; claspers asymmetrical, broad and rounding. Ovipositor short, piercer strongly upcurved, extending to the posterior edge of the third abdominal segment. .... *Eudorylas cruciator* (Perkins)
- Legs chiefly black, only extreme apices of femora, base of tibiae and basal four subsegments of tarsi are yellow. The third segment of antennae black or brown, bristles of second segment rather long. .... 7.
7. Medium, brown opaque species (3.5—4.0 mm). In the wings third costal section subequal to the fourth. Fore and mid tibiae without apical bristles and erect bristle on the middle of hind tibiae. Male: genitalia with a large apical membranous area; claspers elongate rectangular, both margins parallel. Female: third antennal segment with short acuminate. Ovipositor stout, piercer strongly upcurved. .... *Eudorylas tsuboi* Koizumi.
- Small, gray opaque species (2.5—3.0 mm). In the wings third costal section twice the length of the fourth. Fore and mid tibiae with distinct apical bristles and hind tibiae with a strong erect bristle on the swelling. Male: genitalia with a large vertical cleft on the dorsum; claspers irregular, strongly curved on both margins. Female: third antennal segment with very long acuminate; ovipositor slender, piercer quite straight. .... *Eudorylas orientalis* Koizumi

### 1. *Alloneura oryzaetora* (Koizumi).

*Tömösvaryella oryzaetora* Koizumi (1959), Sci. Rep. Fac. Agric.

Okayama Univ., No. 13, 38—40, figs. 1 a-f.

Notes: In the original description, the wings has been written as "hyaline" but when compared with other members of the genus, the wings of this species must be described as "wings slightly but distinctly fumose".

Distribution: Japan (Honshu, Shikoku).

Host: *Nephotettix cincticeps* Uhler (Hom.: Deltocephalidae).

### 2. *Alloneura inazumae* n. sp.

(Figs. 1 A-E)

This species is related to *A. oryzaetora* (Koizumi) and the diagnostic characters are mentioned in couplet 3 of the foregoing key.

This is the second species having the black humeri. Although the whole members of the genus *Alloneura* have been known constantly to have the yellow humeri, the Japanese species *A. oryzaetora* and *A. inazumae* have the black humeri and this is a constant character and no individual or seasonal variations. Except for these two examples, the British *A. palliditarsis* Collin, = (1931, *flavitaris* Collin, 1920) has been stated to have "dark humeri".

**Male. Head:** Eyes jointed for about one half the length of the frontal triangle; front and face silvery pubescent; occiput shining black above and gray to silvery on the lower portion. Antennae (Fig. 1A) black, third segment brown, anterior part slightly lighter and short acuminate; bristles of second segment minute. **Thorax:** Chiefly shining black, lightly brown pollinose on the dorsum; metanotum grayed. Humeri black and halteres yellow. Mesonotum with distinct dorsocentral hairs; scutellum with rather long pale hairs on the disc and the hind margin. Metanotum without transverse furrow. **Legs:** Chiefly black, extreme apices of femora and tibiae, base of tibiae and basal four subsegments of tarsi yellow; posterior surface of each femora shining, anterior surface of each femora and tibiae slightly dusted. Hind trochanters normal, without spines or bristles, only with thinly white pubescence. Front femora with a pair of weak spines at base beneath; middle coxae with three or more long black bristles at their apices above. **Wings:** Entirely hyaline, fourth section of costa nearly three times as long as the third, fifth section over two times as long as the third and fourth combined; *r-m* crossvein is situated slightly before the middle of the discal cell and located just middle between the ends of veins first and second; the last section of the fourth vein is gently curved and the ultimate section of the fifth vein about equal to the *m-cu* crossvein; the petiole of the cubital cell twice the length of the *r-m* crossvein. **Abdomen:** Shining metallic black, broadest at the fourth segment, sparsely covered with distinct erect long hairs. First tergum with a fan of five or six dark bristles on each sides. **Genitalia** (Figs. 1B—D): From a dorsal view, about one half the length of the fifth segment; membranous portion bisects eighth segment on dorsum at about median portion; seventh segment not visible (Fig. 1B). From a ventral view, membranous area on apical one fourth of the eighth segment; ninth segment is about as long as wide; claspers elongate, black in color, the inner is as long as the length of the ninth segment, parallel-sided and enlarged at apex, the outer is somewhat shorter than the inner, slightly curved and enlarged at apex (Fig. 1D). The cerci are normal.

Length: Body, 2.8—3.2 mm.; wings, 3.3—3.6 mm.

**Female. Ovipositor** (Fig. 1E): Basal part globose, subshining black, slightly dusted; the piercer yellow in color, about one and one half times as long as the base, slender, distinctly undercurved and reaching to posterior margin of the second abdominal segment. Front is slightly broader than face, expanded in median portion, entirely silvery opaque; third antennal segment slightly slender and lighter color than in the male. Front and mid femora with a pair of little yellow spines at base beneath. Otherwise as in the male.

Length: Body, 2.5—2.9 mm.; wings, 2.8—3.2 mm.

Holotype male, allotype female and 10 paratypes, 5 males and 5 females; Tsushima, Okayama City, July 15—20, 1959, reared from *Inazuma dorsalis*.

Other specimens examined: HONSHU: Miyagi Pref. (Sendai); Saitama Pref. (Urawa); Kyoto Pref. (Kizu); Osaka Pref. (Hirakata, Moriguchi, Ikeda); Okayama Pref. (Okayama, Kanagawa, Tsuyama). SHIKOKU: Tokushima Pref. (Tokushima, Fukui, Mugi).

Distribution: Japan (Honshu, Shikoku).

Host: *Inazuma dorsalis* (Motschulsky) (Hom. : Deltocephalidae).

### 3. *Alloneura itoi* n. sp.

(Figs. 2 A-E)

This species related to *A. kuthi* (Aczél) in having the outstanding postero-ventral cilia on the hind femora and the black colored tarsi, also in having the genitalia with a large apical depressed area. It is distinguished by the ninth tergite of the male genitalia without a longitudinal groove on midline from a ventral view, the claspers broad triangular in outline, also the female ovipositor extending to base of the third abdominal segment and the piercer only one and one fourth times as long as the base, instead of the ovipositor extending to the base of the second abdominal segment and the piercer twice the length of the base.

**Male. Head:** Front and face silvery pubescent, the former with longitudinal groove at middle; eyes jointed for about one half the length of the frontal triangle; occiput gray on the side and below, black above. Antennae (Fig. 2 A) black, third segment dirty yellow to brown, rather long acuminate; bristles of second segment short and weak; arista all black. **Thorax:** Subshining black in ground color, slightly dusted with brown on dorsum; pleurae black without dusting; metanotum without transverse groove, grayed on the side. Humeri yellow and halteres yellow-white with brown stems. Anterior lateral margins of mesonotum with a row of rather strong pale hairs, dorsocentral hairs and scutellars weak. **Legs:** Black, only extreme apices of femora and bases of tibiae yellow, tarsi all black but inner side of each segment somewhat yellow. Front femora each with a pair of weak pale flexor bristles near the base below; middle coxae with moderately strong apical bristles above; hind femora with outstanding a row of cilia on postero-ventral side. Hinde trochanters normal, without spinous bristles, only with small weak hairs. **Wings:** Hyaline, third costal section one half the length of the fourth, fifth section one and one third times as long as the third and fourth combined; crossvein *r-m* situated at or slightly beyond the middle of discal cell and located at the middle between the ends of veins first and second; last section of fourth vein strongly curved; crossvein *m-cu* about equal in length of the last section of the fifth vein; the petiole of the cubital cell is three times as long as the *r-m* crossvein. **Abdomen:** Subshining black, first tergum and lateral side of each segment lightly gray dusted; broadest at posterior edge of second segment. First tergum with a row of long pale hairs, abdomen otherwise with very sparsely minute hairs. **Genitalia** (Figs. 2B-D); From a dorsal view, evenly compressed to the right, one half the length of the fifth abdominal segment; a large membranous area across the entire tip of eighth segment from the base; seventh segment not visible. From a ventral view, the membranous area on apical one third of the eighth segment; the ninth segment as long as wide, rather deep U-shaped cleft for almost half its length on hind margin; the claspers almost symmetrical, broad and triangular in outline (Fig. 2 D). The cerci are normal.

#### Explanation of Figures

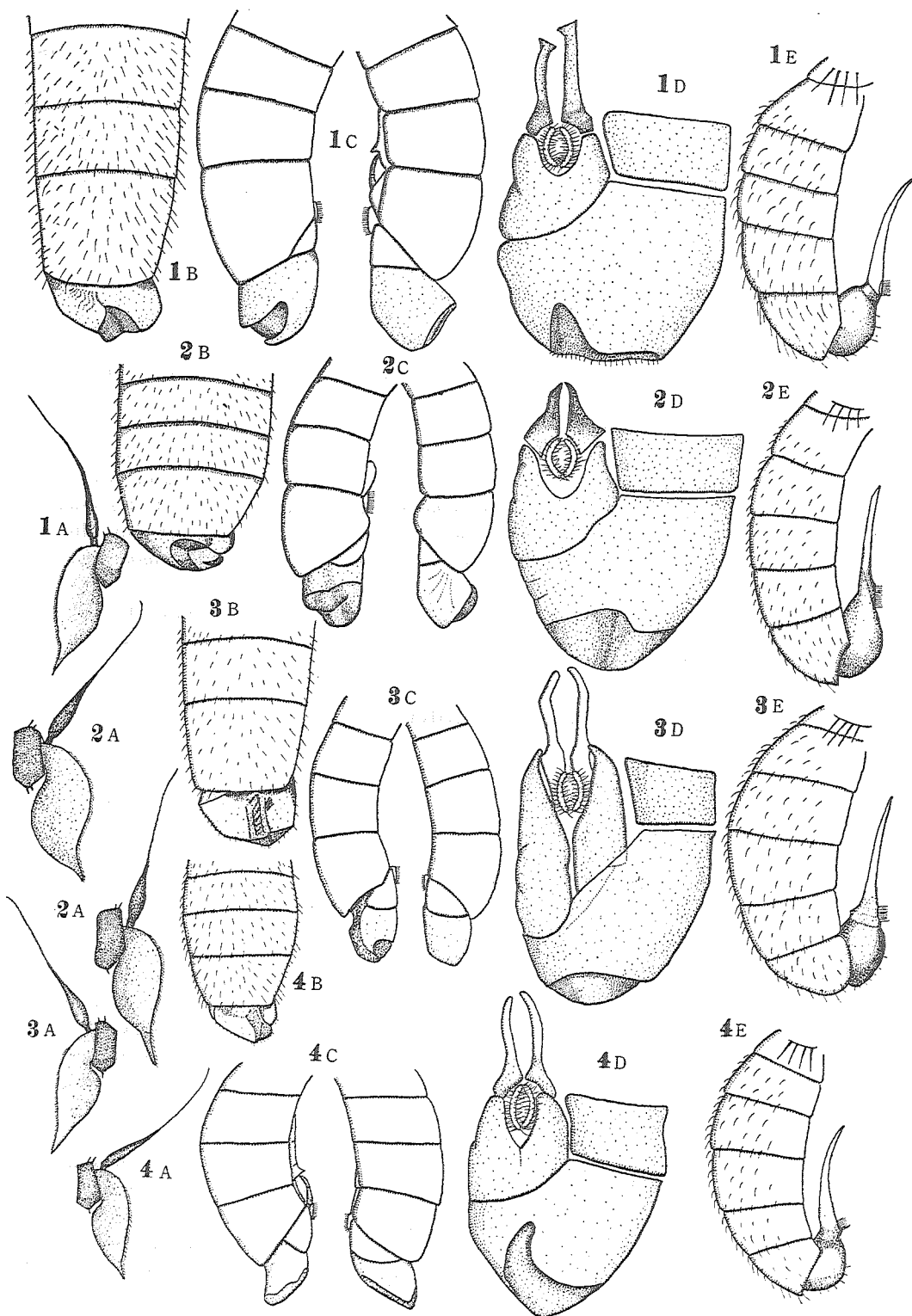
Fig. 1. *Alloneura inazumae* n. sp.

Fig. 2. *A. itoi* n. sp.

Fig. 3. *A. coquilletti* (Kertész)

Fig. 4. *A. sylvatica* (Meigen)

A. male antenna; A'. female antenna; B. end of male abdomen, dorsal; C. end of male abdomen, lateral; D. male genitalia, ventral; E. female ovipositor, lateral.



Length: Body, 2.4—2.8 mm.; wings, 2.8—3.0 mm.

**Female. Ovipositor** (Fig. 2 E): Base globose, shining black; the piercer yellow, one and one fourth the length of the base, reaching to the base of the third abdominal segment, slightly undercurved or straight. Front broader than face and sunken in the middle, silvery pubescent, shining black before anterior ocellus. Third antennal segment (Fig. 2A') more slender and lighter color than in the male, and with long acumination about one half the length of the segment. Anterior corner of mesonotum and lateral side of each abdominal segments more grayed than in the male. Fore and mid femora with a pair of little spines on the base beneath; tarsi of hind legs more flattened and broad than in the male. Otherwise like the male.

Length: Body, 2.3—2.6 mm.; wings, 2.4—3.2 mm.

Holotype male, allotype female and 6 paratypes, 3 males and 3 females; Tsushima, Okayama City, October 28, 1958, collected in paddy-fields.

Other specimens examined: Osaka Pref. (Moriguchi); Okayama Pref. (Okayama, Kanagawa).

Distribution: Japan (Honshu).

Host: Unknown. I have an opinion that this species may have some host relations to *Psamotettix striatus* (Linné), because this species very often associated with this leafhopper. Dissecting this leafhoppers collected in paddy-fields, I have had a dorilaid larva, which cannot be determined the species by the larval characters. Except for the paddy-fields, I also have observed vast numbers of this species in the onion seed bed in association with this leafhoppers.

The species name is dedicated to Dr. S. Ito, of the University of Osaka Prefecture, to whom the author is much indebted for the loan of many valuable materials of the family.

#### 4. *Alloneura coquilletti* (Kertész).

(Figs. 3 A—E)

*Pipunculus coquilletti* Kertész (1907), Ann. Mus. Nat. Hung., 5: 582

*Tömösvaryella coquilletti* Hardy (1943), Kansas Univ. Bull., 29 (1): 159—160, Pl. 15, figs. 88 a—g

*Tömösvaryella coquilletti* Aczél (1944), Ann. Mus. Nat. Hung., 37: 119—125, Pl. 5, figs. 14—15, Pl. 6, figs. 5—8, 11.

This is the first record from Japan and good agrees to the above mentioned foreign descriptions.

**Male. Head:** Eyes jointed about one half the length of the frontal triangle; front and face silvery; occiput gray on side and slightly brown above. Third antennal segment (Fig. 3 A) brown to black, acuminate, the bristles of second segment weak. **Thorax:** Mesonotum shining black in ground color, faintly brown dusted; pleurae black, undusted; metanotum dusted gray, without transverse furrow. Dorsocentrals and bristles of the anterior margins of mesonotum rather developed, scutellars very weak. Humeri and halteres yellow. **Legs:** Chiefly black, extreme apices of femora and tibiae, base of tibiae and basal four subsegments of tarsi yellow. Fore femora with a pair of weak spines near the base beneath. Hind trochanters normal, with distinct four to five spines. **Wings:** Hyaline, third section of costa one half the length of the fourth, fifth section more than twice the length of the third and fourth combined; crossvein *r-m* on the middle of discal cell and situated at the middle between the ends of veins first and second; ultimate section of fourth vein gently curved; last section of fifth vein shorter than the *m-cu* crossvein. **Abdomen:** Shining metallic black, side almost parallel from

the second to the fourth segment; abdominal bristles sparse and small. **Genitalia** (Figs. 3 B—D) From a dorsal view, evenly compressed to the right, about three fifth the length of the fifth abdominal segment; a longitudinal groove on the right side connected with a small round apical depression. From a ventral view, membranous area on apical one fifth of the eighth segment; the ninth segment distinctly elongate, two times as long as wide, very deep V-shaped cleft on hind margin and distinct longitudinal groove divides the ninth segment for two pieces. The claspers long, slender, gently curved, bluntly pointed (Fig. 3 D). The cerci are normal.

Length: Body, 3.2—3.4 mm.; wings, 3.1—3.7 mm.

**Female. Ovipositor** (Fig. 3 E): Base shining black, slightly pubescent with micro piles on posterior side; the piercer yellow, about one and one half the length of the base, straight or very slightly undercurved, reaching to posterior margin of the second abdominal segment. Front broad, slightly concave longitudinal. Front and mid femora with a pair of spines near base below. Otherwise like the male.

Length: Body, 3.0—3.2 mm.; wings, 2.5—2.8 mm.

Specimens examined: Approximately one hundred specimens, both sexes, from the following localities; Yonezawa, Yamagata Pref., July 26—28, 1955 and August 15, 1954; Daisenji, Tottori Pref., July 25, 1956; Kyobotawa, Okayama Pref., July 23, 1954; Kanba, Okayama Pref., Jun 20, 1957; Kanagawa, Okayama Pref., September 30, 1956; Okayama City, October 2, 1955.

Distribution; Japan (Honshu), Europe, Alaska, North America.

Host; Unknown in Japan, also in any part of the distributional area.

## 5. *Alloneura sylvatica* (Meigen).

(Figs. 4 A—E).

*Pipunculus sylvaticus* Meigen (1824), Syst. Besch., 4: 20, 3.

*Pipunculus sylvaticus* Becker (1897), Berl. Ent. Zeit., 42: 83—84, Pl. 2, fig. 16; (1900), Berl. Ent. Zeit., 45: 236; (1920), Wien Ent. Zeit., 38: 164.

*Pipunculus sylvaticus* Collin (1920), Ent. mon. Mag., 56: 274.

*Pipunculus sylvaticus* Lundbeck (1922), Dipt. Dannica 6: 56—57, figs. 26—27.

*Dorylas sylvaticus* Sack (1935), in Lindner, Die Fliegen der Pal. Reg., Lief. 93, Fam. 32. Dorylaidae, p. 20, Pl. 3. fig. 31.

*Tömösvaryella sylvatica* Hardy (1943), Kansas Univ. Sci. Bull., 29 (1): 180—181, Pl. 17, figs. 102 a—f.

*Tömösvaryella sylvatica* Aczél (1944), Ann. Mus. Nat. Hung., 37: 116—119, Pl. 5 figs. 13, 15, Pl. 6, figs. 1—4.

This is the first record of this species from Japan. Except the smaller size, these Japanese specimens are well fit to the above cited foreign descriptions. This small size may come from its host relations.

**Male. Head:** Eyes jointed for about one third the length of the frontal triangle; front and face silvery; occiput gray on the side, black on the above. Third antennal segment (Fig. 4 A) brown, short acuminate; bristles of second segment weak. **Thorax:** Subshining black, faintly dusted; metanotum grayed and without transverse furrow. Dorsocentrals, marginal hairs of mesonotum and scutellars rather developed. Humeri and halteres yellow. **Legs:** Extreme apices of femora, basal one third of tibiae and apices of tibiae are yellow, basal four subsegments of tarsi are yellow-white. Front femora with a pair of minute spines on base beneath; middle coxae with patches of strong bristles on apices below. Hind trochanters with four to five strong black spines of their

undersides. **Wings**: Hyaline, third costal section about one half the length of the fourth, fifth section more than twice the length of the third and fourth combined; *r-m* crossvein slightly before the middle of the discal cell and under the middle between the ends of the veins first and second; ultimate section of fourth vein slightly curved; *m-cu* crossvein slightly longer than the last section of the fifth vein. **Abdomen**: Subshining black, faintly dusted; side parallel, about the same width from the first to the fourth segment. Abdominal hairs sparse and small, rather densely and long on hind margins of fourth and fifth segment. **Genitalia** (Figs. 4 B—D): From a dorsal view, slightly compressed to the right, about two third the length of fifth abdominal segment; a median groove on the right side connected with an apical depression. From a ventral view, apical membranous area extends one half the length of the eighth segment; the ninth segment as long as wide, rather deep V-shaped cleft which extends to the middle of segment on hind margin, on the top of this concave with a short groove. The claspers are symmetrical, elongate, slender, as long as the length of ninth segment and yellow-red in color. The cerci are normal.

Length: Body, 2.6—2.8 mm.; wings, 2.6—3.0 mm.

**Female. Ovipositor** (Fig. 4 E): Base globose, shining black; the piercer about twice the length of the base, distinctly undercurved, extends to the posterior margin of the second abdominal segment. Front chiefly silvery with only extreme upper portion, just below vertex, shining black; third segment of antennae more yellowish in color than in the male. Fore and mid femora with a pair of distinct spines near base of beneath. Otherwise like the male.

Length: Body, 2.4—2.6 mm.; wings, 2.9—3.0 mm.

Specimens examined: 38 males and 43 females, from May to November, 1958, Tsushima, Okayama City, collected in paddy-fields.

Distribution: Japan (Honshu), Europe, Ussuri, North Africa, North America.

Host: Unknown in Japan. The sole host record is *Psamotettix striatus* (Linné) reported by Zazhurilo and Situikova (1940, C. R. Acad. Sci. URSS (N. S.), 29: 429—432) from Voroncah, URSS. This leafhopper is also a familiar one in Japan as an injurious species of the various crops such as the rice-plant, wheat, barley, sugar beet, potato, etc.

## 6. *Eudorylas cruciator* (Perkins).

*Pipunculus cruciator* Perkins (1905), Hawaiian Sugar Planters Assoc. Exp. Sta. Bull., 1 (4):

137-138, Pl. 5. figs. 1, 6, Pl. 7. figs. 1, 6, 7.

*Dorylas? cruciator* Kertész (1912), Ann. Mus. Nat. Hung., 10: 296—297.

*Dorilas (Eudorylas) cruciator* Koizumi (1959), Sci. Rep. Fac. Agric. Okayama Univ., No. 13:

41—43, figs. 3 a-f.

Distribution: Japan (Honshu, Shikoku), Formosa (Koshun), Australia (Cairns).

Host: *Nephotettix cincticeps* Uhler in Japan, *Hecalus* sp. and an undetermined species of Jassidae in Cairns, Queensland.

## 7. *Eudorylas tsuboi* Koizumi.

*Dorilas (Eudorylas) tsuboi* Koizumi (1959), Sci. Rep. Fac. Agric. Okayama Univ., No. 13:

40—41, figs. 1 a-f.

Distribution: Japan (Honshu, Shikoku).

Host: *Nephotettix cincticeps* Uhler.

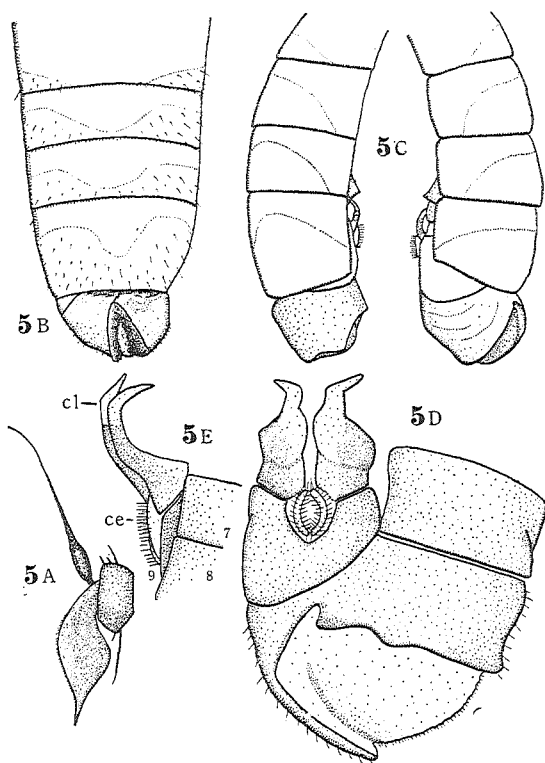


Fig. 5. *Eudorylas orientalis* Koizumi, Male

A. antenna; B. end of abdomen, dorsal;  
C. end of abdomen, lateral; D. genitalia,  
ventral; E. clasper, lateral (cl.=clasper,  
Ce.=cerci, 7.8.9.=7.8.9 tergite)

## 8. *Eudorylas orientalis*

Koizumi, Male.

*Dorilas (Eudorylas) orientalis* Koizumi  
(1959), Sci. Rep. Fac. Agric.  
Okayama Univ., No.13:43-44,  
figs. 4 a-c. (Female).

Known only the female and the following is the first description of the male. This species was originally considered allied to *E. unicolor* (Zett.) and *E. ruralis* (Meig.) basing only on the female characters. But with the considerations of the male characters, it is now clear that the species is more closely related to *E. pratorum* (Fallén). And it differs by the third costal section of the wings about twice the length of the fourth, instead of equal or slightly shorter; by having the mainly black legs, instead of the mainly yellow legs; by the male genital structures; also by having the female ovipositor extending to about the base of the third abdominal segment and the piercer about twice the length of the base, instead of being rather short and reaching scarcely past the base of the fifth abdominal segment and the piercer about equal the length of the base.

**Male. Head:** Eyes jointed for about the length of the frontal triangle; front and face gray pubescent, the former black on the median swelling; occiput gray on the side and below, brown to blackish above. Antennae (Fig. 5 A) black, third segment rather long acuminate; second antennal segment with one long and one or two shorter bristles below. **Thorax:** Mesonotum black in ground color, densely brown pollinose except for gray anterior corners; pleurae and metanotum gray. Metanotum evenly convex, without a transverse furrow. Propleura bare, without a fan of hairs. Humeri dirty yellow and halteres brown with pale stems. Dorsocentrals and marginal scutellar hairs weak. **Legs:** Chiefly black, extreme apices of femora, base of tibiae and basal four subsegments of tarsi are dirty yellow. Apical bristles of front and mid tibiae are not so distinct as in the female. Middle coxae with a row of black bristles at apices above and anterior surface of middle trochanter with two or three rather strong black hairs. Hind tibiae with a short erect bristle on the outer side of the swollen portion near the middle. **Wings:** Hyaline, stigma brown and filling all of the third costal section. Third costal section about twice the length of the fourth, fifth section one and one third times as long as the third and fourth combined; crossvein *r-m* situated at basal one third of the discal cell and just below the end of subcostal vein. Last section of the fourth vein straight or nearly so; ultimate section of the fifth vein slightly shorter than the *m-cu* crossvein. **Abdomen:** Color is largely velvet black, gray on sides and with gray fasciae across posterior margins

of segment two to five, these are interrupted in middle on terga two to four; abdominal hairs obscure. **Genitalia** (Figs. 5 B—E): From a dorsal view, about three fourth the length of the fifth abdominal segment; a distinct membranous depression extending vertically across the entire tip of eighth segment this area runs almost to base; seventh segment visible. From a ventral view the membranous area extends to almost hind margin of eighth segment; the ninth segment slightly wider than long, with a U-shaped cleft on hind margin which extends about the middle of the segment. The claspers, irregular, but rather symmetrical, curved on both margins and narrowed apically (Fig. 5 D), from a lateral view strongly upcurved (Fig. 5 E).

Length: Body, 2.5—2.8 mm.; wings, 3.0—3.3 mm.

Allotype male, Tsushima, Okayama City, June 29, 1959, collected in paddy fields, 10 male paratypes, same as type.

Other specimens examined: HONSHU: Miyagi Pref. (Sendai); Nigata Pref. (Kamimura); Shizuoka Pref. (Shizuoka); Kyoto Pref. (Yamashina); Osaka Pref. (Hirakata); Okayama Pref. (Okayama, Takahashi, Gokei, Kanagawa). SHIKOKU: Tokushima Pref. (Tokushima, Kuwano, Mugi).

All the types are preserved in the Entomological Laboratory, Okayama University.

### 摘 要

本報ではイナズマヨコバイに寄生するアタマアブを記載し、あわせて水田に棲息するアタマアブ類について総覧した。現在8種の本類が水田に活動しているのがみられるが、その4種は前報に述べたツマグロヨコバイに寄生するものであり、他の2種は新種、2種は本邦未記録のもので、次の如くである。

- |                                          |                            |
|------------------------------------------|----------------------------|
| 1. <i>Alloneura oryzaetora</i> (Koizumi) | ツマグロツヤアタマアブ (寄主: ツマグロヨコバイ) |
| 2. <i>A. inazumae</i> Koizumi            | イナズマツヤアタマアブ (寄主: イナズマヨコバイ) |
| 3. <i>A. itoi</i> Koizumi                | イトオツヤアタマアブ (寄主: 不明)        |
| 4. <i>A. coquillettii</i> (Kertész)      | コキレツトツヤアタマアブ (寄主: 不明)      |
| 5. <i>A. sylvatica</i> (Meigen)          | ナミツヤアタマアブ (寄主: 不明)         |
| 6. <i>Eudorylas cruciator</i> (Perkins)  | ツマグロキアタマアブ (寄主: ツマグロヨコバイ)  |
| 7. <i>E. tsuboi</i> Koizumi              | ツボイアタマアブ (寄主: ツマグロヨコバイ)    |
| 8. <i>E. orientalis</i> Koizumi          | ツマグロヒメアタマアブ (寄主: ツマグロヨコバイ) |