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Descriptions of Three New Species of  
Drosophilidae from Japan

by

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著者

## Drosophila Survey of Hokkaido, XXVI.

Descriptions of Three New Species of  
Drosophilidae from Japan<sup>1)</sup>

Haruo Takada

ABSTRACT Three new species of the dipterous family Drosophilidae are described: *Stegana* (Steganina) *longifibula* n. sp. and *Stegana* (Steganina) *unidentata* n. sp. from Nishitapp and Kushiro, respectively; and *Mycodrosophila bifibulata* n. sp. from Nukabira, Hokkaido, Japan.

A *Drosophila* survey of Hokkaido was made from August 12 to 16, 1966 on primeval forests of Nishitapp and Nukabira in the central parts of Hokkaido with Dr. T. Okada, Tokyo Metropolitan University and Dr. H. L. Carson, Washington University at St. Louis, by the sweeping method and also made from August 6 to September 6, 1967 on the Kushiro Golf Course, Kushiro in the eastern city of Hokkaido with used of banana traps and a net by the author.

A total of 211 flies were collected in Nishitapp and Nukabira, 1966. They comprised the following species;

<i>Amiota</i>	(Phortica)	<i>variegata</i> (Fallén, 1823)
<i>A.</i>	( <i>Amiota</i> )	<i>alboguttata</i> forma <i>furcata</i> (Wahlberg, 1838)
<i>A.</i>	( <i>A.</i> )	<i>stylopyga</i> Wakahama & Okada, 1958.
<i>Stegana</i>	(Steganina)	<i>longifibula</i> Takada n. sp.
<i>St.</i>	( <i>St.</i> )	<i>unidentata</i> Takada n. sp.
<i>Leucophenga</i>	(Leucophenga)	<i>maculata</i> (Dufour, 1839)
<i>L.</i>	( <i>L.</i> )	<i>quinquemaculipennis</i> Okada, 1956
<i>Chymomyza</i>		<i>caudatula</i> Oldenberg, 1914
<i>Mycodrosophila</i>		<i>poecilogastra</i> (Loew, 1874)
<i>My.</i>		<i>bifibulata</i> Takada n. sp.
<i>Scaptomyza</i>	(Parascaptomyza)	<i>pallida</i> (Zetterstedt, 1847)

1) Partial financial support for this investigation from a grant by the Japan Society for the Promotion of Science as part of the Japan-U.S. Cooperative Science Program is acknowledged here.

S.	(Scaptomyza)	<i>apicalis</i> Hardy, 1849
S.	(S.)	<i>graminum</i> (Fallén, 1823)
S.	(S.)	<i>monticola</i> Okada, 1956
<i>Drosophila</i>	(Hirtodrosophila)	<i>alboralis</i> Momma & Takada, 1954
D.	(H.)	<i>nokogiri</i> Okada, 1956
D.	(H.)	<i>histroioides</i> Okada & Kurokawa, 1957
D.	(H.)	<i>quadrivittata</i> Okada, 1956; new record from Hokkaido.
D.	(H.)	<i>trivittata</i> Stroble, 1893
D.	(H.)	<i>sexvittata</i> Okada, 1956
D.	(H.)	<i>kangi</i> Okada & Lee, 1961; new record from Hokkaido.
D.	(Sophophora)	<i>magnipunctata</i> Okada, 1956
D.	(So.)	<i>suzukii</i> (Matsumura, 1931)
D.	(So.)	<i>auraria</i> Peng, 1957; race B.
D.	(So.)	<i>bifasciata</i> Pomini, 1940
D.	(So.)	<i>mommai</i> Takada & Okada, 1960
D.	(So.)	<i>helvetica</i> Burla, 1948
D.	(Drosophila)	<i>virilis</i> sturtevant, 1916
D.	(D.)	<i>ezoana</i> Takada & Okada, 1958
D.	(D.)	<i>lacertosa</i> Okada, 1956
D.	(D.)	<i>okadai</i> Takada, 1959
D.	(D.)	<i>moriwakii</i> Okada & Kurokawa, 1957
D.	(D.)	<i>nigromaculata</i> Kikkawa & Peng, 1938
D.	(D.)	<i>unispina</i> Okada, 1956
D.	(D.)	<i>testacea</i> van Roser, 1940

A total of flies were obtained on the Kushiro Golf Course, Kushiro in 1967. The following 40 species were represented;

<i>Amiota</i>	(Amiota)	<i>stylopyga</i>
<i>Stegana</i>	(Steganina)	<i>longifibula</i>
St.	(St.)	<i>unidentata</i>
<i>Leucophenga</i>	(Leucophenga)	<i>maculata</i>
L.	(L.)	<i>magnipulpis</i> Duda, 1924
<i>Chymomyza</i>		<i>caudatula</i>
C.		<i>nigrimana</i> (Meigen, 1830)
<i>Scaptomyza</i>	(Parascaptomyza)	<i>pallida</i>
S.	(Scaptomyza)	<i>graminum</i>
S.	(S.)	<i>monticola</i>
S.	(S.)	<i>polygonia</i> Okada, 1956
S.	(Hemiscaptomyza)	<i>unipunctum</i> (Zetterstedt, 1847)
S.	(S.)	<i>apicalis</i>
<i>Drosophila</i>	(Scaptodrosophila)	<i>coracina</i> Kikkawa & Peng, 1938
D.	(Dorsilopha)	<i>busckii</i> Coquillett, 1901
D.	(Hirtodrosophila)	<i>alboralis</i>
D.	(H.)	<i>histroioides</i>
D.	(H.)	<i>trivittata</i>
D.	(H.)	<i>sexvittata</i>
D.	(Sophophora)	<i>bifasciata</i>
D.	(So.)	<i>imaii</i> Moriwaki, Kitagawa & Okada, 1969
D.	(So.)	<i>suzukii</i>
D.	(So.)	<i>lutea</i> Kikkawa & Peng, 1938

<i>D.</i>	(So.)	<i>melanogaster</i> Meigen, 1830
<i>D.</i>	(So.)	<i>nipponica</i> Kikkawa & Peng, 1938
<i>D.</i>	(So.)	<i>magnipectinata</i>
<i>D.</i>	(So.)	<i>auraria</i> , race B
<i>D.</i>	(Drosophila)	<i>tenicauda</i> Okada, 1956
<i>D.</i>	(D.)	<i>virilis</i>
<i>D.</i>	(D.)	<i>ezoana</i>
<i>D.</i>	(D.)	<i>lacertosa</i>
<i>D.</i>	(D.)	<i>moriwakii</i>
<i>D.</i>	(D.)	<i>funbris</i> (Fabricius, 1787)
<i>D.</i>	(D.)	<i>multispina</i> Okada, 1956
<i>D.</i>	(D.)	<i>immigrans</i> Sturtevant, 1921
<i>D.</i>	(D.)	<i>histrion</i> Meigen, 1830
<i>D.</i>	(D.)	<i>nigromaculata</i>
<i>D.</i>	(D.)	<i>unispina</i>
<i>D.</i>	(D.)	<i>brachynephoros</i> Okada, 1956
<i>D.</i>	(D.)	<i>testacea</i>

Among these, there were found four specimens from Nishitapp and Kushiro, of the genus *Stegana* which have not as yet been described, they closely resemble, but clearly differ from *Stegana* (*Steganina*) *coleoptrata* (Scopoli, 1763). And there were caught two specimens from Nukabira, of the genus *Mycodrosophila* which feed on the fungus, *Pleurotus ostreatus* (Fig. 3, A), they closely resemble but clearly differ from *Mycodrosophila poecilogastra* (Loew, 1874). The descriptions of the characteristics are given below:

### Genus STEGANA Meigen

*Stegana* Meigen, 1830, Syst. Beschreib. 5:79.

Type-species: *Drosophila curvipennis* Fallén, 1823; Europe.

### Subgenus Steganina Wheeler

*Steganina* Wheeler, 1960. Proc. Ent. Soc. of Washing., 62: 110.

Type-species: *Musca coleoptrata* Scopoli, 1763; Europe.

Thus little known the genus *Stegana* Meigen is one of widely distributed genera of Drosophilidae, covering all of the world except Arctic and Antarctic regions, the number of species in each region is comparatively poor, and in Japan also only one species have hitherto been recorded by Okada in 1956, about *Stegana coleoptrata*. In the present report two new species of this genus will be described from Hokkaido. The materials preserved in four

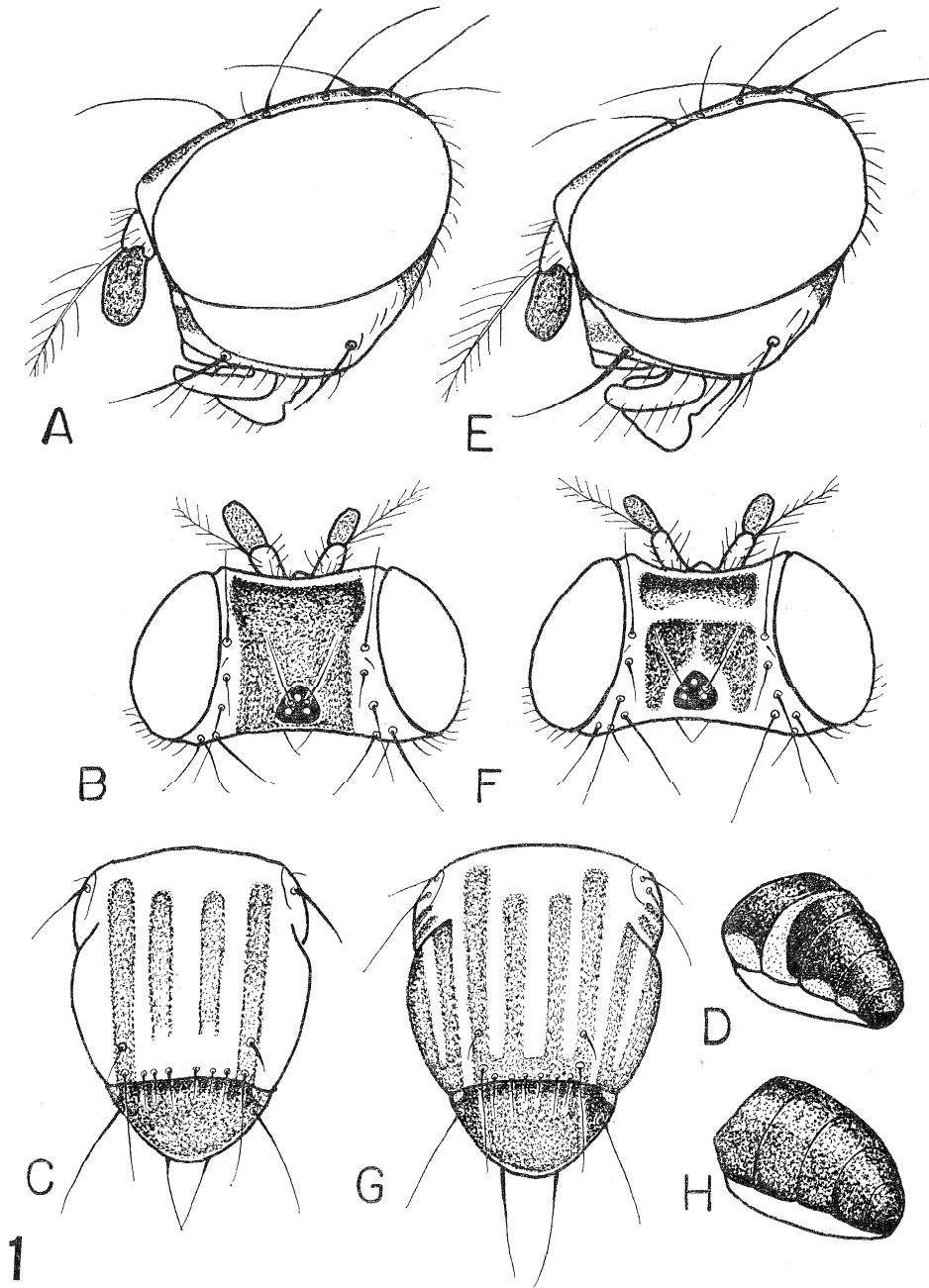


Figure 1. External characteristics of two new species; *Stegana* (Steganina) *longifibula* Takada n. sp. (A,B,C & D) and *St. unidentata* Takada n. sp. (E, F, G & H).

pinflies was collected by the author.

### Key to Species of *Steganina* in Japan

1. Mesonotum without longitudinal stripe, glossy black; 4V-index of wing about 2.4; Clasper of male genitalia much broader than long with small quadrate process; small species .. *coleoptrata*  
Mesonotum with longitudinal stripes ..... 2
2. Mesonotum with dull four brownish longitudinal stripes; 4V-index about 1.9; clasper elongated downward; small species ..... *longifibula* n. sp.  
Mesonotum with distinctly three pairs of narrow tannish longitudinal stripes; 4V-index about 2.0; clasper quadrate with a black tooth; large species ..... *unidentata* n. sp.

✓ 1. *Stegana* (*Steganina*) *longifibula* Takada, n. sp. (Fig. 1-2).

Japanese name: Kita-kabuto-shojobae.

Male and female: Body about 3.0 mm. Head brown, subshining; arista 7/5, excluding the terminal fork. Anterior reclinate orbital about three-fourths length of proclinate and six-sevenths length of posterior one. Oral bristle single, long. Front chestnut brown; periorbits pale brown; ocellar triangle black. Eyes subquadrate; cheeks whitish, moderately broad (Fig. 1, A).

Mesonotum chestnut brown, subshining, with 4 broad dull brownish longitudinal stripes (Fig. 1, C); acrostichal hairs about 10 irregular rows. Humeral one; upper pleura with a broad black longitudinal stripe. Tegular organs large. Halteres pale. Abdomen brownish black; second tergite yellowish brown, posterior margin darker (Fig. 1, D).

Wings dark brown, especially at the anterior half; second vein weakly undulating; third costal section with several thorn-like warts. Costal-index about 2.1; 4V-index about 1.6; 4C-index about 1.0; 5X-index about 1.5; AC-index about 11 and C 3 fringe on basal one-second.

Holotype: male, Kushiro Golf Course, Kushiro, Hokkaido, August 8, 1967 (Takada).

Allotype: female, Experimental Forest of Tokyo Univ., Nishitapp, Hokkaido, August 15, 1966 (Takada). Type specimens are stored at the Laboratory of Biology, Sapporo University.

Relationships: It is generally similar to *Stegana coleoptrata* (Scopoli, 1763) but clearly differ from the latter in having glossy black in mesonotum. Further this species is also distinguishable from the latter in the penis,

especially in the form of the clasper of male genitalia (Fig. 2, A-C).

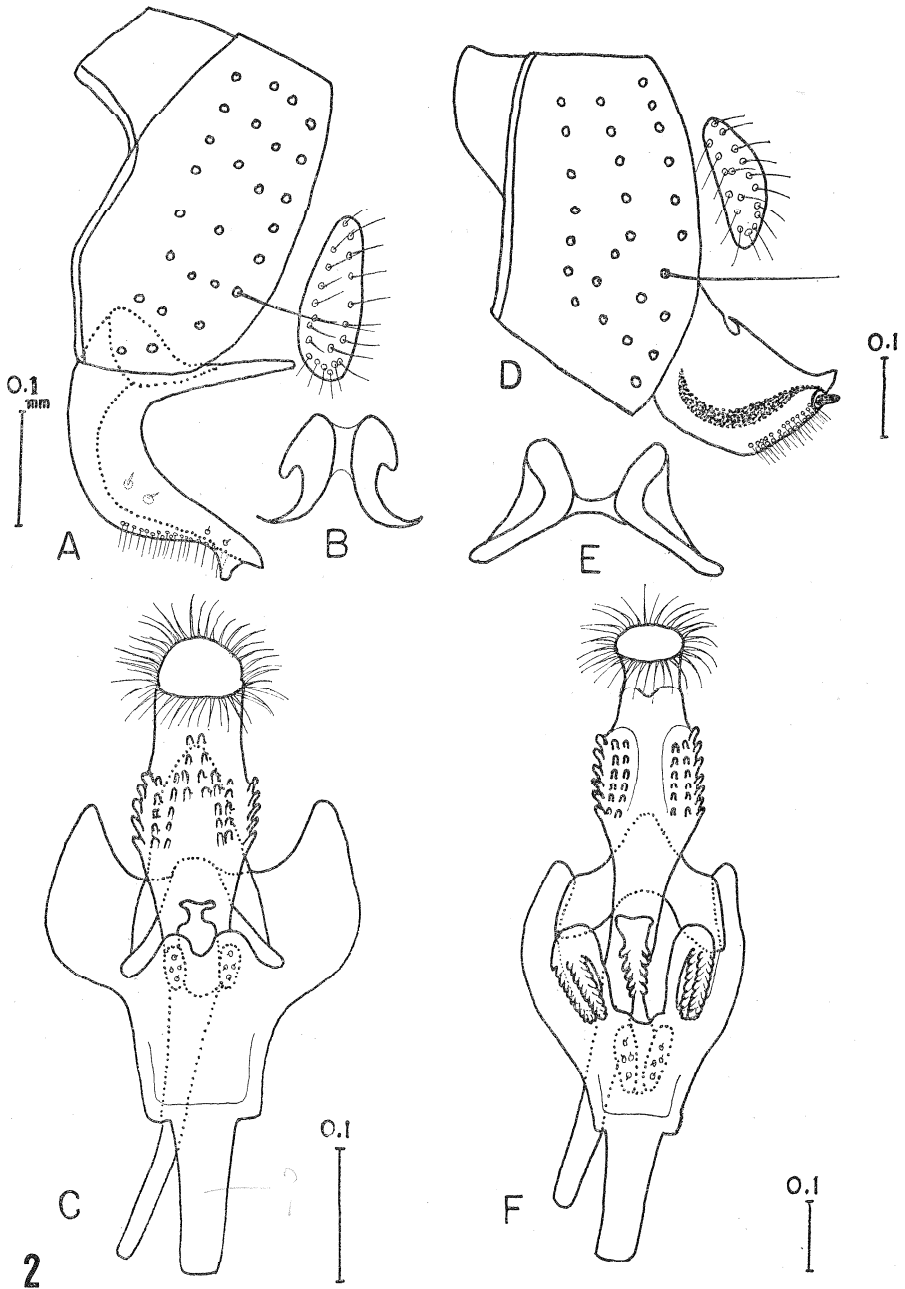


Figure 2. Male genitalia of two new species: *Stegana (Steganina) longifibula* Takada n. sp. (A, B & C) and *St. unidentata* Takada n. sp. (D, E & F).

✓ 2. *Stegana* (*Steganina*) *unidentata* Takada, n. sp. (Fig. 1-2).

Japanese name: Suji-kabuto-shojobae.

Male and female: Body about 4.0 mm. Arista about 8/5. Anterior reclinate orbital about two-thirds length of proclinate and four-fifths length of posterior one. Front subshining, twice as long as its width at level of proclinate orbital; a dark brown streak near lunule, behind this paler tan, then darker brown over remainder except for a paler median line. Ocellar triangle black (Fig. 1, E-F).

Mesonotum yellow with three pairs of narrow tannish longitudinal stripes, a pair on the dorsocentral line longer; acrostichal hairs about 8 irregular rows. Scutellum dull brown, large and flattened. Pleura with a strong brown to black longitudinal stripe from anterior spiracle to base of haltere; humerals two, upper one small, lower one longer (Fig. 1, G). Abdominal pattern entirely black as shown Figure 1, H. Legs yellow, knees dark brown; apical half of femore and basal part of tibiae of middle legs dark brown.

Wings more strongly darkened anteriorly; Costal-index about 2.1; 4V-index about 2.0; 4C-index about 1.3; 5X-index about 1.2; AC-index about 10.0 and C 3 fringe on basal two-thirds.

Holotype: male, Kushiro Golf Course, Kushiro, Hokkaido, August 8, 1967 (Takada).

Allotype: female, Experimental Forest of Tokyo Univ., Nishitapp, Hokkaido, August 15, 1966 (Takada). Type specimens are stored at the Laboratory of Biology, Sapporo University.

Relationships: Distinctly different from *Stegana coleoptrata* and *St. longifibula* n. sp., in the patterns of mesonotum and in the form of clasper of male genitalia (Fig. 2; D-E).

## Genus MYCODROSOPHILA Oldenberg

*Mycodrosophila* Oldenberg, 1914, Archiv Naturgesch. A, 80 (2): 4.

Type-species: *Amiota poecilogastra* Loew, 1744; Europe.

✓ 3. *Mycodrosophila bifibulata* Takada n. sp. (Fig. 3).

Japanese name: Ezo-kinoko-shojobae.

Male and female: Body about 2.0 mm. Arista 3/1; antennae yellowish tan, third darker. Proclinate and posterior reclinate orbitals equal in size, anterior ~~one~~ minute. Front dark yellow, more darker posteriorly, silvery shining

*red line*



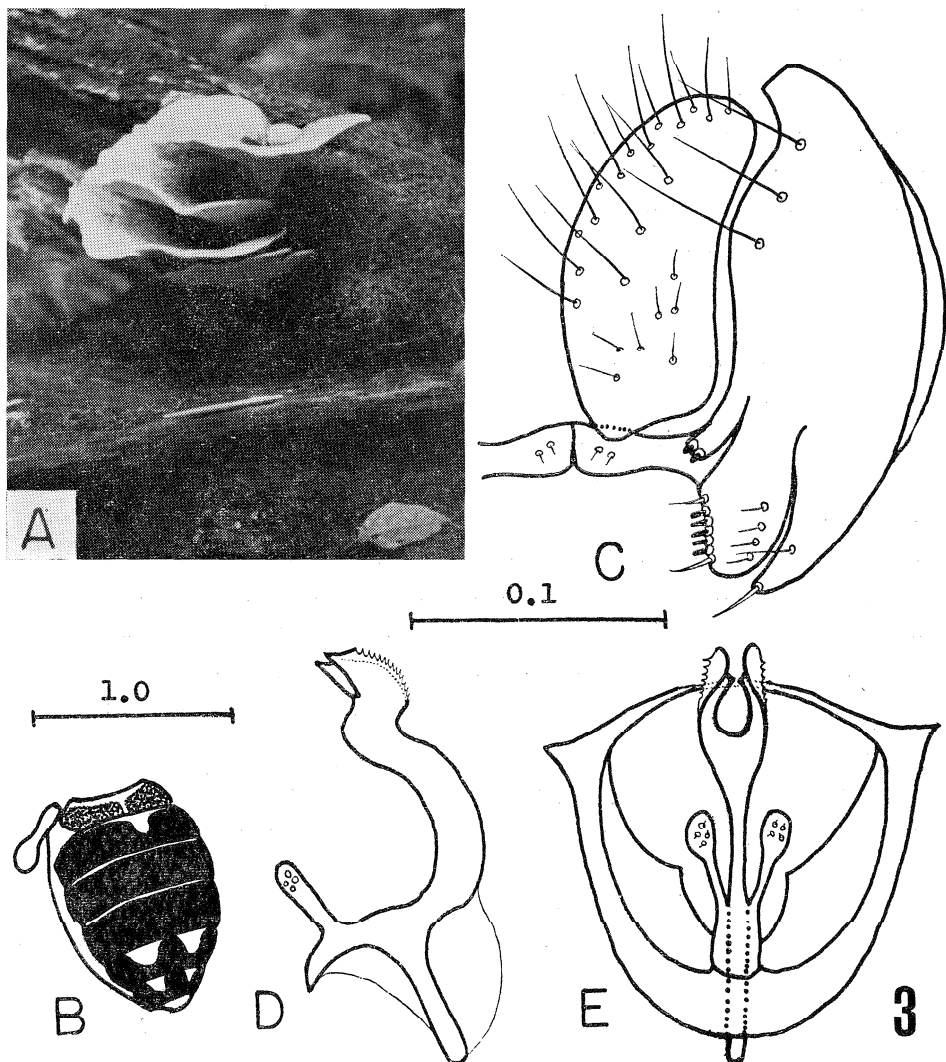


Figure 3. *Mycodrosophila bifibulata* Takada n. sp. A, A fungus, *Pleurotus ostreatus*, which collection was made in Nukabira, Hokkaido. B, Abdominal pattern of both sexes. C, External genital apparatus of male. D, Copulatory apparatus of male in lateral view. E, Copulatory apparatus of male in ventral aspect.

when viewed from certain angle. Oral bristle single, fine. Carina yellow; face and clypeus tan; cheeks tan below eyes, pale behind. Pulpus dark yellow with a long apical seta. Ocellar triangle and periorbits tan, orbits subshining.

Mesonotum shiny tannish yellow with a tendency to be paler in midline, and darker tan on each side. Scutellum slightly velvety tan. Acrostichal hairs about 10 rows, no prescutellars; no anterior dorsocentrals; posterior dorsocentrals places rather far from scutellum. Knob of halteres yellow. Postscutellum, metanotum and pteropleura tan. Humerales 2. The abdominal pattern, applicable to both sexes as shown in Figure 3, B. Legs without recurved hairs.

Wings clear, veins yellow; distal break deeply incised, apex of costa <sup>1st vein</sup> blackened and protruding as a broad lappet; Costal-index about 1.1; 4V-index about 1.9; 4C-index about 1.6; 5X-index about 1.6; AC-index about 4.3 and C 3 fringe on basal one-seconds.

External genital apparatus of male (Fig. 3, C): Genital arch yellow, heel nearly absent; toe pointed downwards with a apical spine. Cl<sup>a</sup>asper yellow, divided in two parts; lower portion with 5 primary teeth and upper one with 2 secondary teeth. Anal plate yellow with rear angle and tip. The bridge connecting the clasper bifid, with 2 hairs on each plate.

Holotype: male, Nukabira, Hokkaido, August 13, 1966 (Takada.)

Allotype: female, collected together with holotype. Type specimens are stored at the Laboratory of Biology, Sapporo University.

Relationships: Slightly but clearly differ from *Mycodrosophila poecilogastrea* (Loew, 1874), about the abdominal pattern, the clasper of male genitalia and penis, without recurved hairs of the fore legs and also without a black spot at the base of halteres.

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