

## The genus *Milichiella* Giglio-Tos (Diptera, Milichiidae) of Japan

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**Abstract:** The Japanese species of the genus *Milichiella* Giglio-Tos of the Milichiidae are reviewed. Two species, *Milichiella argylogaster* (Perris) and *M. spinithera* Hendel, are newly recorded from Japan; their male genitalia are newly illustrated. Short redescriptions of the Japanese species and an identification key are presented.

### INTRODUCTION

The *Milichiella* Giglio-Tos is a small genus of the family Milichiidae and now comprises nearly 30 species in the world. The adult flies are frequently found to swarm around cattle houses, and the males of some species, which have a silvery abdominal dorsum flash brilliantly when they dance in the sun. The larvae are coprophagous or saprophagous, occurring in dung, compost and other decaying animal and vegetable matter. Several species are more or less synanthropic; *Milichiella lacteipennis* (Loew) is a cosmopolitan species and prefers human environment.

The Palearctic species have been studied by Hennig (1937), Steyskal (1966) and 3 species were catalogued by Papp (1984). The Oriental species have been treated by de Meijere (1911), Hendel (1913), Aldrich (1931) and catalogued by Sabrosky (1977), comprising 7 species. However, the Oriental species are unrevised and their male genitalia have been little observed.

In Japan, only one species, *M. lacteipennis* (Loew), is known to occur (Fukuhara, 1965); there has been virtually no taxonomic work done on the Japanese *Milichiella*. In the present paper, I report the Japanese species of the *Milichiella*, includ-

ing 2 newly recorded species, with illustrations of male genitalia and present a key for the Japanese species.

Genus *Milichiella* Giglio-Tos  
[Japanese name: Kakeme-kurokobae-zoku]

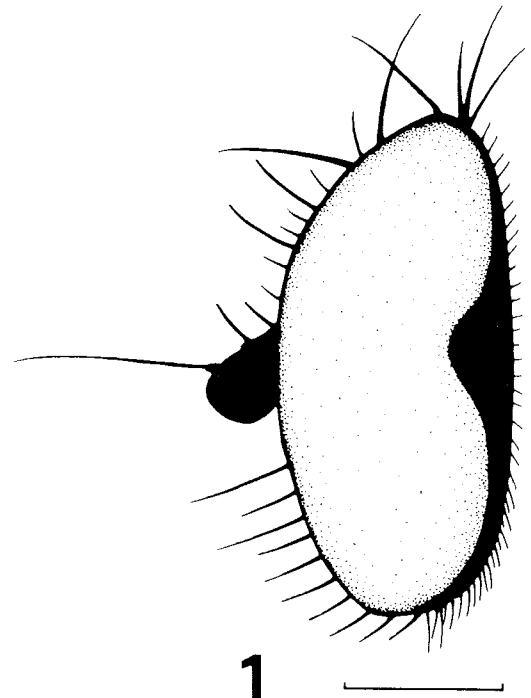


Fig. 1. Male head of *M. spinithera* Hendel, lateral view (left). Scale: 0.25 mm.

*Milichiella* Giglio-Tos, 1985, *Annls Soc. Ent. Fr.*, 64: 367.

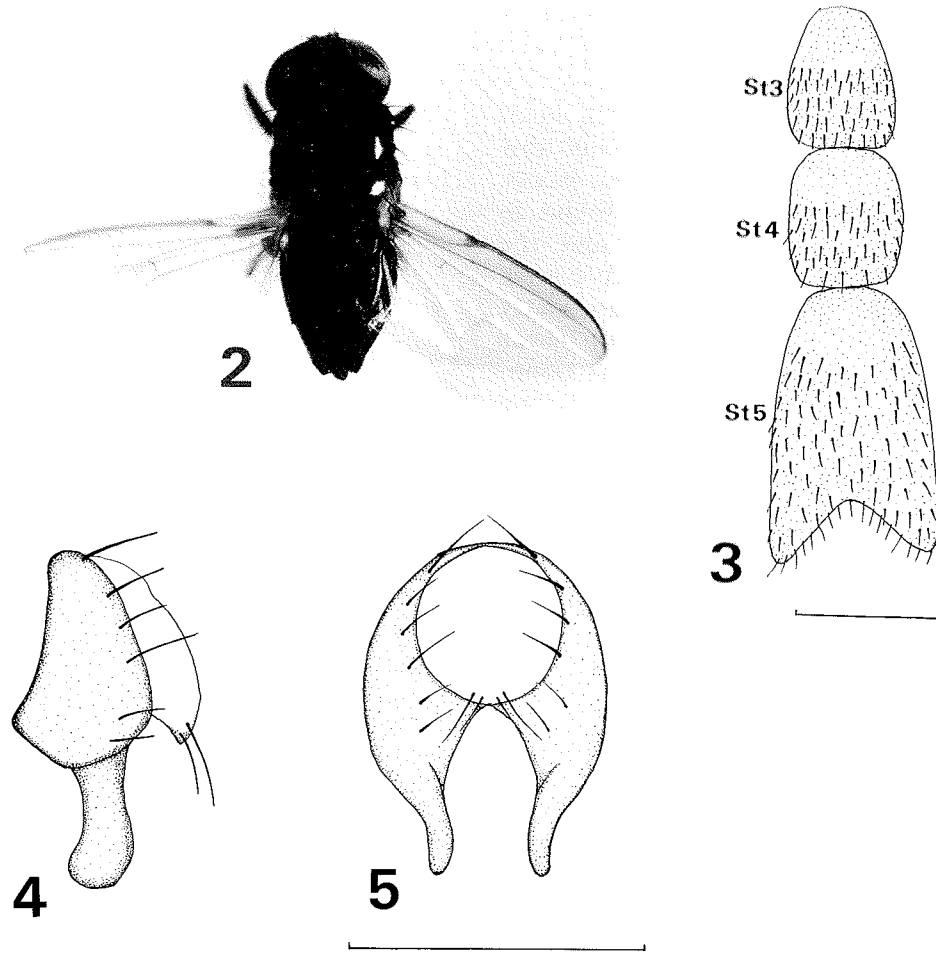
Type-species: *Tephritis argentea* Fabricius by monotypy.

Diagnosis. Eye large; posterior margin of eye with angular emargination (Fig. 1); frons with 2 pairs of mesoclonate lower orbital setae, a pair of proclinate and a pair of reclinate upper orbital setae; antenna usually small; thorax black and shining or subshining; pleuron shining or thinly pruinose; subcostal break deeply incised; legs without striking characteristics; abdomen often depressed and circular; male abdominal tergites black or silvery shining; 5th abdominal sternite developed and some-

times characteristic; male genitalia extremely small; male surstylus long in proportion to length of epandrium; male cercus developed.

Key to the Japanese species of *Milichiella* (♂)

1. Abdominal tergites wholly black....  
.....*M. lacteipennis* (Loew)  
At least 3rd to 5th abdominal tergites  
silvery shining .....2
2. Upper squama and its microtrichia  
brown; 2nd tergite silvery in ground  
color, but appears black in dorsal  
view .....*M. argylogaster* (Perris)



Figs. 2-5. *M. lacteipennis* (Loew). 2, male, dorsal view; 3, 3rd to 5th abdominal sternites of male; 4, male genitalia, lateral view (left); 5, ditto, posterior view. Scales: 0.25 mm.

Upper squama white, with bright microtrichia; 2nd to 5th tergites almost silvery shining..*M. spinithera* Hendel

*Milichiella lacteipennis* (Loew, 1866)  
(Japanese name: Kakeme-kurokobae)  
Figs. 2-5

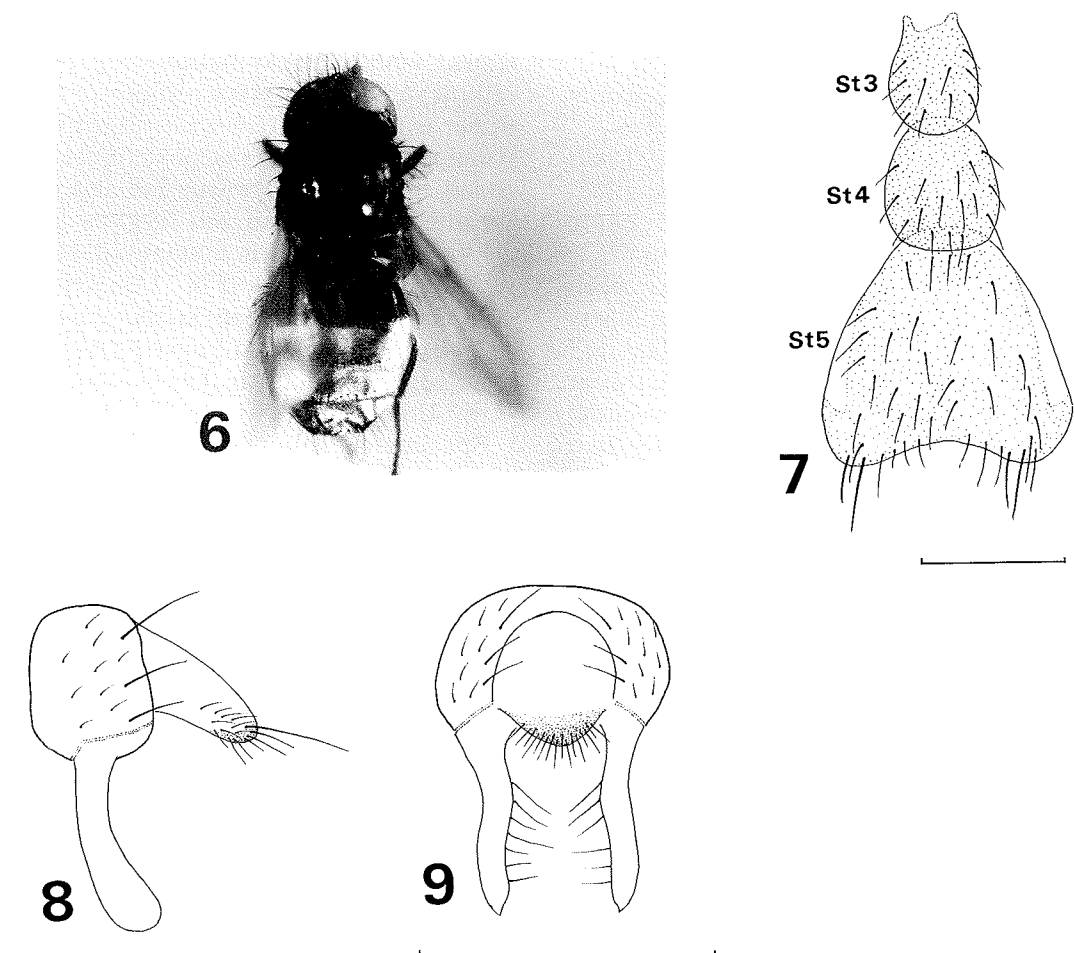
*Lobioptera lacteipennis* Loew, 1866, *Berl. Ent. Z.*, 9: 185.

*Milichiella lacteipennis*: Becker, 1907, *Ann. Mus. Hung.*, 5, p. 533; Hennig, 1937, *Flieg. Palaearkt. Reg.*, 6: 27-28; Sabrosky, 1977, *Catalog. Dipt. Orient. Reg.*, 3: 273.

♂ ♀. Frons shining; ocellar triangle

shining; face and occiput slightly pruinose; palpus clavate and dark brown; thorax wholly black; mesonotum and mesopleuron glossy; other pleura and scutellum subshining; wing slightly milky white; upper squama white with bright microtrichia; halter yellow with black shaft; legs black; 1st to 4th abdominal tergites black and subshining (Fig. 2), 5th tergite almost shining except for central area; 5th abdominal sternite elongate (Fig. 3); male surstylus apically rounded and slightly curved anteriorly (Fig. 4). Body length: ca. 3.0 mm.

Specimens examined. [Ogasawara Is.]—2 ♀, Minami-Torishima, 20 Jan. 1984, H.



Figs. 6-9. *M. argylogaster* (Perris). 6, male, dorsal view; 7, 3rd to 5th abdominal sternites (male); 8, male genitalia, lateral view (left); 9, ditto, posterior view. Scales: 0.25 mm.

Kurahashi; 1 ♀, Okimura, Haha-jima, 20 Aug. 1980, H. Kurahashi. [Ryukyu Is.]—34 ♂, 5 ♀, Hoshino, Ishigaki I., 27 Mar. 1997, M. Iwasa; 12 ♂, Shiraho, Ishigaki I., 7–9 Mar. 1997, M. Iwasa; 11 ♂, 1 ♀, Banna, Ishigaki I., 7–9 Mar. 1994, T. Hayashi.

Distribution. Cosmopolitan; Japan (Ogasawara Is., Kyushu (?) and Ryukyu Is.).

Bionomics. This species is known as a synanthropic fly with an aggressive dispersibility and the larvae breed in cattle dung (Hennig, 1937). In Japan, the adults are frequently found to swarm around cattle houses.

***Milichiella argylogaster*** (Perris, 1876)

(Japanese name: Miyama-kakemekurokobae)

Figs. 6–9

*Milichia argylogaster* Perris, 1876, *Annls Soc. Ent. Fr.*, (5) 6: 208.

*Milichiella argylogaster*: Becker, 1907, *Ann. Mus. Hung.*, 5: 534; Hennig, 1937, *Flieg. Palaearkt. Reg.*, 6(1): 26–27; Papp, 1984, *Catalog. Palae. Reg.*, 10: 113.

♂. Frons black and shining; face, occiput black and subshining; antenna black; arista black and bare; palpus clavate and black; thorax wholly black; mesonotum shining; scutellum and pleura subshining; upper squama brown, with darkened limb bearing brown microtrichia; halter wholly black; femur and tibia black, tarsus brown; 1st abdominal tergite black; 2nd tergite silvery in ground color, but appears black in dorsal view (Fig. 6); 3rd to 5th tergites wholly silvery (Fig. 6); 5th abdominal sternite developed and triangular-shaped (Fig. 7); male surstylus long, slender, apically rounded, and curved posteriorly (Fig. 8). Body length: 3.0 mm.

♀. Unknown.

Specimen examined. 1 ♂, Mt. Hokuchin, Daisetsu-zan, Kamikawa, 13 Jul. 1960, S. Takagi.

Distribution. Europe, Russia (North European territory and Far East) and Japan (Hokkaido). New to Japan.

Remarks. Second abdominal tergite of a

Japanese specimen emanates a more strong black color in dorsal view, but male genitalia and other characteristics agreed with those of the European specimens.

Bionomics. According to Perris (1876), the larvae were found under the decayed bark of tree. Unknown in Japan.

***Milichiella spinithera*** Hendel, 1913

(Japanese name: Ginpara-kakemekurokobae)

Figs. 1, 10–13

*Milichiella spinithera* Hendel, 1913, *Supplta Ent.*, 2: 107; Sabrosky, 1977, *Catalog. Dipt. Orient. Reg.*, 3: 274.

♂. Frons, face and occiput black and shining; antenna wholly black; arista black and bare; palpus clavate and black; thorax wholly black; mesonotum and scutellum subshining; pleura thinly pruinose; upper squama whitish with bright microtrichia; halter wholly black; femora and tibiae black; tarsi brown; 1st abdominal tergite black; 2nd to 5th tergites almost silvery (Fig. 10); 5th abdominal sternite broad and rounded (Fig. 11); surstylus comparatively thick in lateral view, and apically rounded, and curved posteriorly (Fig. 12). Body length: 3.8–4.0 mm.

♀. Unknown

Specimens examined. [Ryukyu Is.]—30 ♂, Ohtomi, Iriomote I., 13–15 Oct. 1988, K. Kanmiya; 5 ♂, Banna, Ishigaki I., 7–9 Mar. 1994, T. Hayashi; 10 ♂, Shiraho, Ishigaki I., 27 Mar. 1997, M. Iwasa.

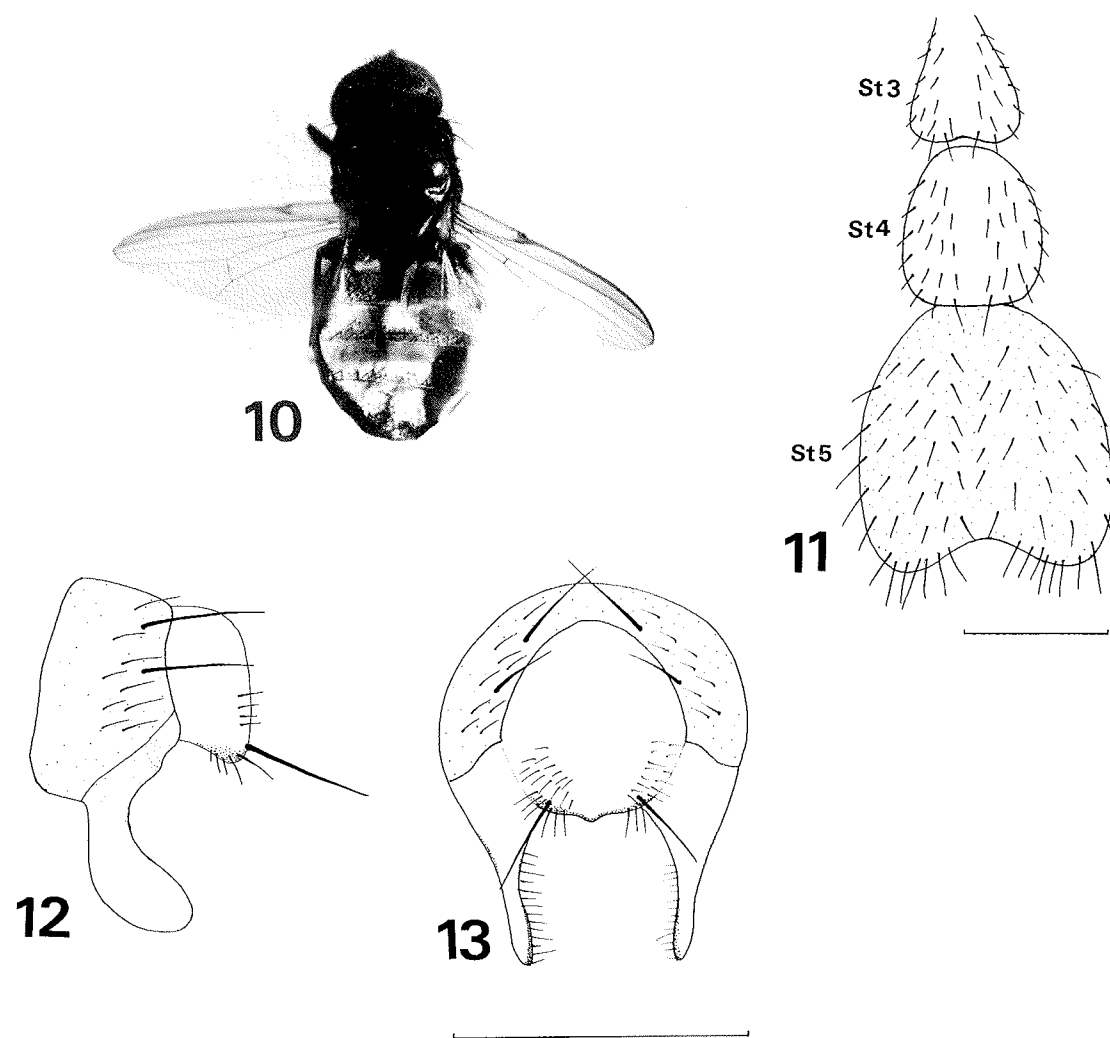
Distribution. Taiwan, Japan (Ryukyu Is.). New to Japan.

Remarks. This species closely resembles *M. bakeri* Aldrich in general appearance and male genitalia, but is distinguishable from it by having whitish upper squama.

Bionomics. The adults are found to swarm around cattle houses, flashing their abdomen brilliantly in the sun.

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I wish to express my sincere thanks to



Figs. 10–13. *M. spinithera* Hendel. 10, male, dorsal view; 11, 3rd to 5th abdominal sternites (male); 12, male genitalia, lateral view (left); 13, ditto, posterior view. Scales: 0.25 mm.

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## 摘 要

日本産カケメクロコバエ属 (Genus *Milichiella*)  
(双翅目, クロコバエ科)

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クロコバエ科 (Milichiidae) の Genus *Milichiella* カケメクロコバエ属 (新称) の日本産の種については、福原 (1965) が 1 種 *Milichiella lacteipennis* (Loew) カケメクロコバエを記録して以来、分類学的研究はなされていなかった。本報告では、日本新記録 2 種、*Milichiella argylogaster* (Perris) ミヤマカケメクロコバエ (新称) と *Milichiella spinithera* Hendel ギンバラカケメクロコバエ (新称) を見出した。これにより日本産の種は合わせて 3 種となり、これらの種の雄の交尾器の図を示し、再記載を加え、検索表を付した。

本属の幼虫は腐食性または糞食性で、糞、堆肥、動植物質の腐敗物などから発生する。特にカケメクロコバエは分布が広く、人類親和性を持ち、成虫は畜舎や家屋の周辺で群飛するのが観察される。