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ON *EVANIIDAE* AND *GASTERUPTIONIDAE* FROM JAPAN (*HYMENOPTERA*)

BY

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(With 2 Textfigures)

Some of the older authors, as ASHMEAD,⁽¹⁾ KIEFFER,⁽²⁾ etc., have treated these two groups as the subfamilies, *Evaniinae* and *Gasteruptioninae*, under the family *Evaniidae*, but HANDLIRSCH⁽³⁾ has raised them to the rank of families. On account of difference in the morphological and biological characters, the writer is inclined to agree with HANDLIRSCH.

In this paper one Evaniid and four Gasteruptionids including three new species are recorded from Japan. All the type-specimens dealt with in this paper are deposited in the Entomological Museum of the Hokkaido Imperial University.

The writer desires here to express a debt of gratitude to Professor SHONEN MATSUMURA for his kind direction.

Family *Evaniidae*

Evaniinae P. CAMERON, Biol. Entr.-Amer. Hymen., I, p. 422 (1887); ASHMEAD, Proc. U. S. Nat. Mus., xxiii, p. 7 (1900); KIEFFER, Tierreich, p. 6 (1912).

Evaniidae HANDLIRSCH, Hand. Entom., III, p. 751 (1924); UCHIDA, Trans. Sapporo Nat. Hist. Soc. xii, p. 190 (1932).

This family is distinguished from *Gasteruptionidae* by the very short truncated pronotum, the short, strongly compressed, hatchet-shaped abdomen, and the short, subexserted ovipositor. The habits of the former are quite different from those of the latter; the former is parasitic in the egg-cases of *Blattidae*.

According to ENDERLEIN⁽⁴⁾ 10 species of this family are known from Formosa, but in Japan only a single species is known.

(1) Proc. U. S. Nat. Mus., xxiii, p. 6 (1900)

(2) Das Tierreich, *Evaniidae* (1912)

(3) Hand. Entomolog. (Hymen. in Bd. III, pp. 751-752, 1924)

(4) Zool. Anz., xlii, p. 318 (1913)

[Trans. Sapporo Nat. Hist. Soc., Vol. XIII, Pt. 3, 1934]

Genus *Evania* FABRICIUS

Evania FABRICIUS, Syst. Ent., p. 345 (1775); KIEFFER, Tierreich, p. 65 (1912).

Evaniella BARDLEY, Cand. Ent., xxxvii, p. 63 (1905).

Szepligetella BRADLEY, Trans. Amer. entom. Soc., xxxiv, p. 34 (1908).

Acanthinevania BRADLEY, Trans. Amer. entom. Soc., xxxiv., p. 172 (1908).

Genotype—*Ichneumon appendigaster* LINNÉ

1. *Evania appendigaster* (LINNÉ)

Ichneumon appendigaster LINNÉ, Syst. nat. Ed. 10 I, p. 566 (1758).

Evania appendigaster FABRICIUS, Syst. entom., p. 345 (1775); DALLA TORRE, Cat. Hymen., III, p. 1076 (1902); KIEFFER, Gen. Insect., II, p. 3 (1902); MATSUMURA, Nippon-ekichu-mokuroku, p. 191 (1908); ENDERLEIN, Stett. entom. Zeit., p. 254 (1909); id., Entom. Mitteil., I, p. 264 (1912); KIEFFER, Tierreich, p. 83 (1912); ENDERLEIN, Zool. Anz., xlii, p. 319 (1913); ISHII, Nip. Kon. Zukan, p. 373, fig. 727 (1932).

Ichneumon niger GÜZE, Degger: Abh. Gesh. Insect. III, p. 385 (1780).

Evania laevigata OLIVIER, Encycl. method. Insect, vi, p. 453 (1791).

Evania fuscipes ILLIGER, Rossi: Fauna Etusca Ed. 2, II, p. 83 (1807).

Evania unicolor SAY, Keating's Narrat. Exped. II, p. 320 (1824).

Dvania cubae EICHWALD, Zool. spec. II, p. 214 (1830).

Evania desjardinsii BLANCHARD, Hist. Nat. Int. Insect. III, p. 299 (1840).

Evania affinis GUILLON, Ann. Soc. Entom. France, x, p. 311 (1841).

Evania brachystyla MATSUMURA, Thous. Ins. Jap., Suppl. IV, p. 166 Pl. LII, fig. 14 (1912); id., Ill. Thous. Ins. Jap., II, p. 150, Pl. XV, fig. 14 (1930).

Evania brachygaster MATSUMURA, Konchu-bunruigaku, vol. II, p. 272 (1915); id., 6000 Ill. Insects Japan-Empire, p. 72, fig. 396 (1931).

This species is widely distributed nearly in all parts of the world, and it parasitizes in the egg-cases of *Blattidae*, as *Periplaneta orientalis* LINNÉ and *Periplaneta americana* LINNÉ.

Loc. Distr.—Honshu (Shimauchi, 1 ♀, 27/VII, 1924, H. KÔNO; Echigo, 1 ♂, 1926, NAKAMURA; Tokio, 1 ♂, VII, 1927, S. MATSUMURA; Hachijoshima, 1 ♂, 21/V, 1909, ARAKAWA)—Okinawa (2 ♀ ♀, 3 ♂ ♂, non-data, S. SAKAGUCHI)—Ishigaki-shima (3 ♂ ♂, VIII, 1922, S. HIRAYAMA)—Ogasawara (1 ♀, VIII, 1905)—Formosa (Kosempo, Anping, Yentenpo, Takao, after ENDERLEIN; Taihoku, 1 ♂, V, 1922, NAGASAWA; 1 ♂, 24/VI, 1926, T. YOSHIDA; Gyochi, 1 ♂, 20/VIII, 1908, S. MATSUMURA; Tainan, 1 ♀, 21/IX, 1908, M. ISHIDA)—Polynesia (Ponape, 1 ♂, 25/VII, 1931, S. UCHIYAMA).

Gen. Distr.—Cosmopolitan.

J. N.: *Marugata-yasebachi*.

Family *Gasteruptionidae*

Gasteruptioninae ASHMEAD, Proc. U. S. Nat. Mus., xxiii, p. 7 (1900); KIEFFER, Tierreich, p. 188 (1912).

Foeminae KIEFFER, Gen. Insect., II, p. 6 (1902).

Gasteruptionidae HANDLIRSCH, Hand. Entom., III, p. 752 (1924); UCHIDA, Trans. Sapporo Nat. Hist. Soc., xii, p. 190 (1932).

This family is at once separated from *Evaniidae* by the prothorax with a long conical neck ventrally, the narrow, strongly compressed abdomen, and the long, exerted ovipositor. The species belonging to this group attack the nests of various Sphegids, Vespids and Apids, but the species which inhabit Japan are totally unknown to the writer in their life-history.

As far as the writer's studies are concerned, two genera containing four species are known as existing in Japan. Further in Formosa five species of *Gasteruption* are recorded by ENDERLEIN⁽¹⁾.

Key to the Genera

Eyes naked. *Gasteruption* LATREILLE
Eyes pubescent. *Trichofoenus* KIEFFER

Genus *Gasteruption* LATREILLE

Gasteruption LATREILLE, Préc. Caract., p. 113 (1796); KIEFFER, Tierreich, p. 226 (1912).

Foenus FABRICIUS, Ent. Syst. Suppl., p. 210 (1798).

Genotype—*Gasteruption affectator* (LINNÉ)

Key to the Species

1. ♀ ♀ 2
- ♂ ♂ 4
2. Pronotum with no tooth at the anterior margin; mesonotum closely, transversely striate-rugose; 4 anterior legs except the coxae reddish yellow; hind metatarsi on the apical three fourths and the preceding two joints yellowish white; 1st discoidal cell a little longer than the 2nd. *ogasawarensis* nov. sp.
- Pronotum with a tooth at each side of the anterior margin; mesonotum striate-rugose, with scattered punctures; only the hind metatarsi on the apical three fourths yellowish white; 1st discoidal cell one third longer than the 2nd. 3
3. Occiput with three foveae anteriorly; mesonotum strongly, transversely striate-rugose, scattering a few punctures. *oshimensis* nov. sp.
- Occiput with no fovea anteriorly; mesonotum finely, transversely striate-rugose, sometimes entirely obsolete, scattering strong punctures. *thomsoni* SCHLETTERER
4. Antennae entirely black; pronotum with a tooth at the anterior margin; mesonotum finely, transversely striate with scattered punctures; occiput sharply raised, with no fovea anteriorly; 4 anterior legs dark brown; hind tarsi brown or the apical three fourths of the hind metatarsi yellowish white; 1st discoidal cell about one third longer than the 2nd. *thomsoni* SCHLETTERER
- Antennae black, with some apical joints yellowish white; pronotum with no tooth at each side of the anterior margin; mesonotum closely, transversely striate-rugose, with no puncture;

(1) Zool. Ang., xlii, pp. 322—326 (1913)

occiput slightly raised, with a fovea anteriorly at the middle; 4 legs except the coxae yellowish red; hind metatarsi on the apical three fourths and the preceding two joints yellowish white; 1st discoidal cell a little longer than the 2nd. *ogasawarensis* nov. sp.

1. *Gasteruption thomsoni* SCHLETTERER

Gasteruption thomsoni SCHLETTERER, Verh. zool. bot. Ges. Wien, xxxv, p. 285, ♀ (1885); DALLA TORRE, Cat. Hymen., III, p. 1073 (1902); KIEFFER, Gen. Insect., p. 10 (1902); id., Tierreich, p. 254, ♀ ♂, fig. 61-62 (1912); SCHMIEDKNECHT, Hymen. Nord- und Mittel-Europe, p. 377 (1930).

Gasteruption japonicum MATSUMURA, Thous. Ins. Jap. Suppl. IV, p. 164, Pl. LII, fig. 12, ♀ (1912); id., Konchu-bunruigaku, Vol. II, p. 271, ♀ (1915); id., Ill. thous. Ins. Jap. Vol. II, p. 149, Pl. XV, fig. 12, ♀ (1930); id., 6000 Ill. Ins. Japan-Empire, p. 72, fig. 397, ♀ (1931); ISHII, Nip. Kon. Zukan, p. 370, fig. 728, ♀ (1931).

Gasteruption vegapunctatum MATSUMURA, Com. Ill. Insect. Jap., p. 83, Pl. VIII, fig. 20, ♀ (1931).

This species is known as a parasite of *Osmia tridentata* DUF. et PERR., *Eriades truncorum* L., and *Trypoxylon figulus* L. in Europe.

Loc. Distr.—Honshu (Shimauchi, 1 ♀, 9/VIII, 1925, H. KÔNO; Kibune, 1 ♀, 13/VI, 1930, K. TAKEUCHI; Ikaho, 3 ♀ ♀, 1 ♂, 19/VII, 1927; K. TAKEUCHI; Iwate, 1 ♂, 15/VII, 1910, OGASAWARA; Aomori, 1 ♀, 29/VI, 1904, S. MATSUMURA)—Hokkaido (Sapporo, 1 ♀, 27/VII, 1923, T. UCHIDA, 1 ♀, 17/VIII, 1923, M. YAMANAKA, 1 ♀, 30/VI, 1930, C. WATANABE; Jôzankei, 1 ♀, 31/VIII, 1907, S. MATSUMURA, 2 ♀ ♀, 1/VIII, 1917, S. MATSUMURA, 1 ♂, 7/VII, 1924, K. TAMANUKI; Mt. Daisetsu, 2 ♀ ♀, 1 ♂, 4-10/VIII, 1926, T. UCHIDA; Akan, 1 ♀, 12/VII, 1928, H. KÔNO)—Saghalien (Furumaki, 1 ♀, 20/VII, 1924, S. MATSUMURA; Kiminai, 1 ♀, 27/VII, 1924, S. MATSUMURA; Ichinosawa, 1 ♀, 25/VII, 1924, S. MATSUMURA; Konuma, 3 ♀, 27/VII, 1928, K. TAMANUKI).

Gen. Distr.—Europe, Japan.

J. N.: *Ô-kombô-yasebachi*.

2. *Gasteruption oshimensis* nov. sp.

♀. Black; mandibles and palpi yellowish brown; basal 4 abdominal segments at each apex reddish yellow; legs dark brown, a broad ring at the base of the hind tibia and the basal three fourths of the hind metatarsus yellowish white; wings hyaline, the stigma and the veins black; ovipositor reddish yellow, the sheath black, with the apex broadly white.

Head dull, with silvery pubescence on the face; occiput sharply raised, with 3 deep foveae anteriorly; distance between the hind ocelli a little longer than the length of the 3rd antennal joint; 2nd joint of the antennae as long as a half length of the 3rd, and the 4th joint as long as the 1st and 2nd joints taken together. Neck short, transversely striate; pronotum with a sharp tooth at each side of the anterior margin; mesonotum and scutellum transversely

striate-rugose, scattered fine punctures, the parapsidal furrows deep, crenulate; meso- and metapleurae reticulate-rugose; propodeum reticulate, the reticulation coarser than that of the metapleurae. First discoidal cell about one third longer than the 2nd. Hind coxae transversely striate-rugose; hind metatarsi a little longer than the remaining joints united. Abdomen finely coriaceous; ovipositor a little longer than the body.

Body-length 14 mm., Abdomen-length 8 mm., Ovipositor-length 14.5 mm.

♂. Unknown.

Habitat—Honshu (Oshima).

Cotype: 2 ♀ ♀, 19/V, 1929, M. YAMANAKA.

J. N.: *Oshima-kombôyasebachi*.

Gasteruption terrestre TOURNIER (Ann. Soc. ent. Belgique, p. 20, 1877) is closely allied to this species, but differs from the latter in having the parapsidal furrows very fine, and the hind metatarsi entirely black.

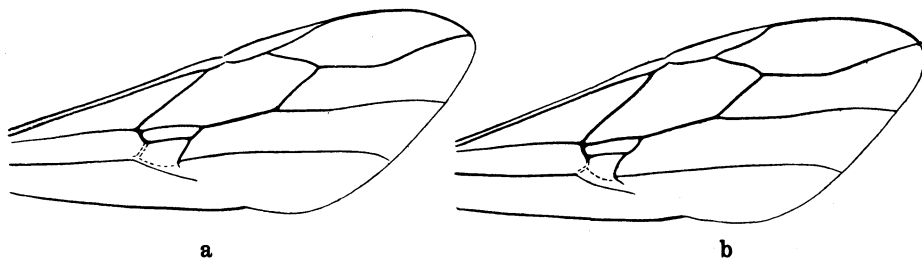


Fig. 1

a. Fore wing of *Gasteruption ogasawarensis* nov. sp. (♂)

b. Fore wing of *Gasteruption oshimensis* nov. sp. (♀)

3. *Gasteruption ogasawarensis* MATSUMURA et WATANABE (nov. sp.)

♂. Black; mouth-parts, some apical joints of the antennae, and 4 anterior legs except the coxae yellow; hind legs dark brown, the tibiae basally, and the hind metatarsi on the apical three fourths and the preceding two joints yellowish white; wings hyaline, the stigma and the veins black. Four anterior abdominal segments at each apex yellowish red.

Head dull, with silvery pubescence on the face; occiput slightly raised, with a fovea anteriorly at the middle; distance between the hind ocelli a little longer than the 2nd and 3rd antennal joints taken together; 3rd joint of the antennae as long as the 2nd, the 4th stout, just longer than the 3 basal joints united. Neck short, transversely striate; pronotum and scutellum closely, transversely striate-rugose, the parapsidal furrows deep, crenulate; meso- und metapleurae rugose with silvery pubescence; propodeum rugosely reticulate; 1st

discoidal cell a little longer than the 2nd; hind coxae closely striate-rugose; hind metatarsi longer than the remaining joints taken together; abdomen slender, the petiole as long as the remaining segments united.

Body-length 12 mm., Abdomen-length 7 mm.

♀. In one female specimen its head is broken off, but it closely resembles the male in general structure and colour: ovipositor reddish yellow, as long as the thorax and abdomen taken together, and the sheath black, with the apex broadly white.

Abdomen-length 10 mm., Ovipositor-length 14 mm.

Habitat—Ogasawara (Bonin Is.)

Holotype: ♂, 20/VII, 1905, S. MATSUMURA.

Allotype: ♀, 1911, S. MATSUMURA.

Paratype: ♂, 20/VII, 1905, S. MATSUMURA.

J. N.: *Ogasawara-kombôyasebachi*.

This species may easily be distinguished from the others by some apical joints of the antennae, which are yellowish white, and the pronotum with no tooth at each side of the anterior margin.

Species of *Gasteruption* unknown to the writer

***Gasteruption japonicum* CAMERON**

Gasteruption japonicum CAMERON, Proc. Manchest. Philos. Soc., xxvi, p. 133, ♀ (1888); DALLA TORRE, Cat. Hymen., III, p. 1068 (1902); KIEFFER Tierreich, p. 252 ♀ (1912).

This may be the same species with *Gasteruption thomsoni* SCHETTERER, but according to the original description it differs from the latter in the following points:

- 1) A broad ring at the base of the femora yellowish white.
- 2) Third joint of the antennae about one fourth longer than the 2nd.
- 3) Pro- and mesothorax aciculated.

Loc. Distr.—Kobe, Japan.

Genus ***Trichofoenus* KIEFFER**

Trichofoenus KIEFFER, Ann. Soc. ent. France, vol. 79, p. 77 (1910); id., Tierreich, p. 213 (1912).

Genotype—*Trichofoenus merceti* (KIEFFER).

This genus much resembles *Gasteruption* LATREILLE in general structure, but the eyes pubescent.

I. ***Trichofoenus breviterebrae* nov. sp.**

♀. Black; 2nd–4th abdominal segments at each apex yellowish red; legs

black, the lower trochanters, the femora apically, and the 4 anterior tarsi fuscous; a broad ring of the hind tibiae at the base yellowish white; wings slightly infuscated, the stigma and the veins black; ovipositor-sheath entirely black.

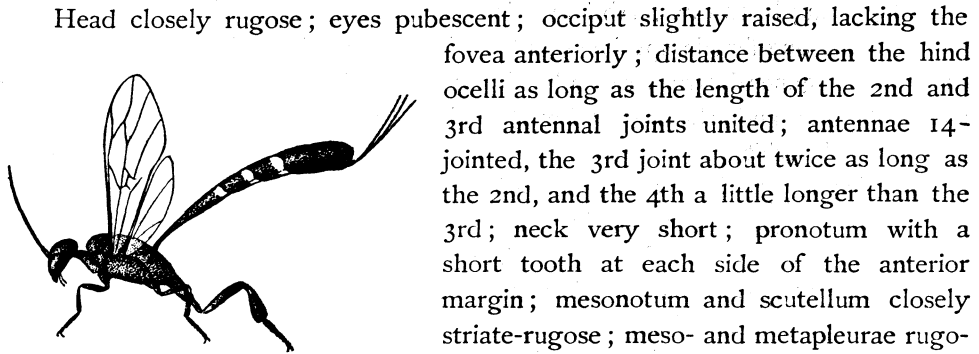


Fig. 2

Trichofoenus breviterebrae nov. sp. (♀)

Head closely rugose; eyes pubescent; occiput slightly raised, lacking the fovea anteriorly; distance between the hind ocelli as long as the length of the 2nd and 3rd antennal joints united; antennae 14-jointed, the 3rd joint about twice as long as the 2nd, and the 4th a little longer than the 3rd; neck very short; pronotum with a short tooth at each side of the anterior margin; mesonotum and scutellum closely striate-rugose; meso- and metapleurae rugosely reticulate; propodeum coarsely reticulate-rugose; 1st discoidal cell one third longer than the 2nd; hind coxae rugose; hind metatarsi longer than the remaining joints taken together. Abdomen long and slender, dull; ovipositor as long as the 1st abdominal segment.

Body-length 11-13 mm., Abdomen-length 6-8 mm., Ovipositor-length 1.7-3 mm.

♂. Closely allied to the female in general structure and colour, but it differs from the latter in having the antennae 13-jointed, the 3rd joint $1\frac{1}{2}$ times longer than the 2nd, and the 4th as long as the 2nd and 3rd joints united.

Body-length 9-10 mm., Abdomen-length 5-6 mm.

Habitat—Honshu, Hokkaido, Saghalien.

Holotype: ♀, Konuma (Saghalien), 23/VI, 1931, K. TAMAMUKI.

Allotype: ♂, Nagahama (Saghalien), 28/VII, 1929, K. TAMAMUKI.

Paratype: 1 ♂, Tarantomari (Saghalien), 13/VII, 1927, H. KONO; 1 ♀, Shisuka (Saghalien), 8/VIII, 1914, S. ISSIKI; 1 ♀, Jōzankei (Hokkaido), 3/X, 1929, T. UCHIDA; 3 ♀ ♀, Ikaho (Honshu), 19/VII, 1927, K. TAKEUCHI.

J. N.: *Hime-kombōyasebachi*.

This species resembles *Trichofoenus pyrenaicus* (GUÉRIN) (Iconogr. végén. anim. VII. Insect., p. 406, 1845), but differs from the latter in having the occiput slightly raised, and the ovipositor shorter than the abdomen.