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ON TWO HYMENOPTEROUS GUESTS OF ANTS IN JAPAN

By

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(With 2 Textfigures)

As in the course of the writer's study two hymenopterous guests of ants have been found in Japan, on this occasion he will propose to report them.

Family *PAXYLOMMATIDAE*

The *Paxylommatidae*, a small isolated group, has been treated by most authors as a subfamily of *Braconidae*. In 1924 HANDLIRSCH,[1] however, raised it to the rank of a family; indeed the venation of the wings, the attachment of the abdomen, the structure of the 2nd suture, as well as the shape of the hind legs readily distinguish it from *Braconidae*. We have only a single genus falling in this family.

Genus ***Paxylomma*** BRÉBISSON

Paxylomma BRÉBISSON, Encycl. Méthod. Insect., X, p. 23 (1825); ROMAND, Ann. Soc. Ent. France, VII, p. 433 (1838); THOMSON, Opusc. ent., p. 2338 (1895); ASHMEAD, Proc. U. S. Nat. Mus., Vol. 23, p. 115 (1900); STRAND, Ent. Mitt., Bd. III, p. 27 (1914); DONISTHORPE et WILKINSON, Trans. Ent. Soc. London, pp. 87-93 (1930).

Pachylomma FÖRSTER, Verh. Nat. Ver. Preuss. Rheinl., Vol. 19, p. 247 (1865); RATZEBURG, Ichneum. Forstinsect., II, p. 53 (1848); MARSHALL, Spec. Hymén. Europe, V, p. 622 (1896); id., Trans. Ent. Soc. London, p. 76 (1899); SZÉPLIGETI, Gen. Insect., 22-24, p. 181 (1904).

Eurypterna FÖRSTER, Verh. Nat. Ver. Preuss. Rheinl., Vol. 19, p. 247 (1865); ASHMEAD, Proc. U. S. Nat. Mus., Vol. 23, p. 115 (1900).

Plancus CURTIS, Ent. Mag., I, p. 188 (1833).

Hybrizon FALLEN, Spec. Nov. Hym. Disp. Meth., p. 19 (1813) (non species); NEES, Ich. aff. Monogr., I, p. 27 (1834).

Eupachylomma ASHMEAD, Proc. Ent. Soc. Washing., Vol., 3, p. 58 (1894); id., Proc. U. S. Nat. Mus., Vol. 23, p. 115 (1900).

Ogkosoma HAUPT, Mitt. Ent. Ges. Halle, Heft 5-7, p. 52 (1913).

Genotype—*Paxylomma buccatum* BRÉBISSON.

Eight species have been described : five—*P. buccatum* BRÉBISSON, *P. cremieri*

(1) Hand. Entomologie (Hymen. in Bd. III, p. 751, 1924).

[Ins. Mats., Vol. IX, No. 3, March, 1935]

ROMAND, *P. fuliginosi* WILKINSON, *P. grande* RUDOW (!), and *P. schwarzi* (HAUPT)—being found in Europe, two others—*P. flavocinctum* (ASHMEAD), *P. rileyi* (ASHMEAD)—in North America, and the last one—*P. arakawae* (MATSUMURA)—in Japan.

Paxylomma arakawae (MATSUMURA)

Eurypterna arakawae MATSUMURA, Thous. Ins. Jap., Suppl. IV, p. 121, ♀, Pl. 49, fig. 1, ♀ (1912); id. Ill. Thous. Ins. Jap., Vol. II, p. 123, ♀, Pl. 12, fig. 1, ♀ (1930); id., 6000 Ill. Insect. Japan-Empire, p. 74, fig. 403, ♀ (1932).

As a supplement to the original description the following characters may be added:

♀. Black; face at the apex, clypeus, mouth-parts and two basal joints of the antennae yellowish brown; mesonotum with a triangular yellow spot on each side of the hind margin; mesopleurae with a longitudinal broad yellow band at the middle; scutellum and postscutellum yellow, the former with a median fuscous spot at the base; wings subhyaline, the stigma yellowish brown, the veins dark brown, and the tegulae yellow; legs yellowish brown, the hind legs except the tarsi darker than the others; abdomen yellowish brown, the 5th tergite at the apex and the following tergites black; ovipositor brownish yellow, the sheath fuscous.

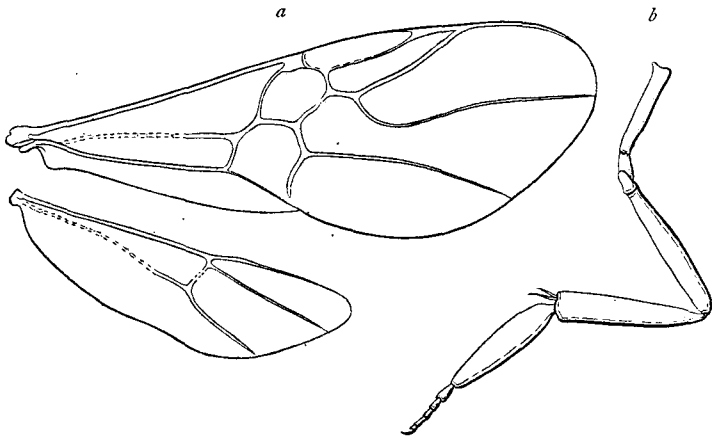

Fig. 1

Paxylomma arakawae (MATSUMURA) (♂):
a. Wings. *b*. Hind leg.

Head transverse, smooth and shining; eyes large, slightly emarginate inwardly opposite the insertion of the antennae; distance between the posterior ocellus and the eye less than the diameter of an ocellus; antennae 13 jointed,

the 1st joint of the flagellum longer than the 2nd. Thorax smooth and shining; parapsidal furrows of the mesonotum obsolete; propodeum short, smooth and shining, with an oblique furrow on each side of the base, on the apical half slightly striate-rugose. Stigma long and slender; radius inserted at the basal fourth of the stigma, not reaching to the apex of the wing; 1st abscissa of the radius as long as the 2nd; recurrent nervure a little longer than the 1st and 2nd abscissae of the radius united, decolored at the upper third; nervulus antifurcal. Legs long and slender; four anterior tarsi slender, not dilated, the basal joint twice as long as the others united; hind legs very long, the coxae elongate, the tarsi dilated, the basal joint very large, flattened, compressed, being twice as long as the others united. Abdomen smooth and shining, much longer than the head and thorax together, falciform, viewed sideways clavate; 1st segment very narrow, cylindrical, a little shorter than the 2nd, with a tubercle near the middle of each lateral margin; 2nd segment cylindrical, broadened towards the apex; 3rd as long as a half of the 2nd, the rest transverse; ovipositor exserted, longer than the hind tibial spur, the sheath flattened.

Length 12 mm.

Described from two cotypes and three other females.

♂. Closely resembles the female, but differs from the latter in the following points:

(1) Face entirely yellowish, broader than that of the female.

(2) Antennae longer than that of the female, 13 jointed.

(3) Mesonotum yellow, with three large fuscous spots.

(4) Meso- and meta-pleurae yellow, with fuscous markings.

(5) Abdomen slenderer than that of the female, with a prominent sheath of the genital organ; penis short, curved rectangularly at the apex.

Length 9–10 mm.

Described from ten males collected by the writer at Jôzankei.

Habitat: Hokkaido (Sapporo, 2 ♀ ♀, the cotypes, 16/X, 1908, S. ARAKAWA, 1 ♀, 2/X, 1915, S. KUWAYAMA; Jôzankei, 2 ♀ ♀, 10 ♂ ♂, 4/X, 1929, C. WATANABE).

This species may be parasitic on *Lasius fuliginosus* LATRELLE: on October 4th, 1929, the writer collected 2 females and 10 males hovering over a hollow of a large elm trunk, in which a nest of this ant was seen.

J. N.: *Arakawa-ari-yadori-bachi.*

Note—Judging from the description of *Paxylomma schwarzi* (HAUPT)[1] from Germany, it may be identical with *arakawae*; STRAND[2] treated *schwarzi* as a synonym of *Paxylomma grande* RUDOW (!), but the present writer is much

(1) Mitt. Ent. Ges. Halle, Heft 5–7, p. 53, ♀ ♂, fig. 1, ♀ 1913.

(2) Ent. Mitt., Bd. III, pp. 27–31, 1914.

inclined to the opinion that *arakawae* should be kept as a distinct species until all the species are more fully studied.

Family *BRACONIDAE*

Subfamily ***Microgasterinae***

Genus ***Elasmosoma*** RUTHE

Elasmosoma RUTHE, Berlin. Ent. Zeitschr., Vol. 2, p. 7 (1858); MARSHALL, Spec. Hymén. Europe, IV, p. 549 (1890); DALLA TORRE, Cat. Hymen., IV, p. 146 (1898); ASHMEAD, Proc. U. S. Nat. Mus., Vol. 23, p. 131 (1900); SZÉPLIGETI, Gen. Insect., 22-24, p. 103 (1904); BENGTSSON, Lund. Univ. Arsskr. N. F. Avd. 2, Vol. 14, p. 47 (1918); MUESEBECK, Proc. U. S. Nat. Mus., Vol. 61, p. 5 (1922).

Genotype—*Elasmosoma berolinense* RUTHE.

This genus has been placed in the subfamily *Microgasterinae* by most authorities as MARSHALL, DALLA TORRE, ASHMEAD, and SZÉPLIGETI, on the other hand it has been included in the subfamily *Neoneurinae* by BENGTSSON and MUESEBECK, which was erected by the former for the reception of *Elasmosoma* RUTHE and *Neoneurus* HALIDAY, but in this paper it may, for convenience, be treated under *Microgasterinae*.

Seven species have been recognized, three—*E. acutum* THOMSON, *E. berolinense* RUTHE, and *E. viennense* GIRAUD—being found in Europe, and the others —*E. bakeri* ASHMEAD, *E. pergandei* ASHMEAD, *E. schwarzi* ASHMEAD, and *E. vigilans* COCKERELL—in North America. On this occasion the writer gives Japan as a new locality of *berolinense* RUTHE.

Elasmosoma berolinense RUTHE

Elasmosoma berolinense RUTHE, Berlin. Ent. Zeitschr., Vol. 2, p. 8, ♀ ♂, T. 3, fig. 2, ♂ (1858); GIRAUD, Ann. Soc. Ent. France, X, p. LVII, ♀ ♂ (1870); id., l. c., I, p. 299, ♀ ♂ (1871); MARSHALL, Spec. Hymén. Europe, IV, p. 552, ♀ ♂ (1890); THOMSON, Opusc. ent., p. 2276, ♂ (1895); DALLA TORRE, Cat. Hymen., IV, p. 146 (1898); SZÉPLIGETI, Gen. Insect., 22-24, p. 103 (1904).

Elasmosoma sp. KARIYA, Insect World, Gifu, Vol. XXXVI, pp. 298-301, ♀, fig. 1, ♀ (1932).

The writer has not seen the type of this species, but judging from the descriptions the present specimens from Japan may be identical with it:

♀. Black; clypeus, mouth-parts, two basal joints of the antennae and legs pale yellow; tips of the mandibles black; tibiae and tarsi somewhat fuscous. In a series of the present specimens the three basal tergites tinged with pale yellow. Wings whitish hyaline, the stigma brownish yellow, the veins pale.

Head transversely striate-rugose; eyes naked; distance between the posterior ocelli nearly the same as the distance between the eyes and the ocelli; antennae a little shorter than the head and thorax united, 13 jointed. Thorax entirely reticulate-rugose; parapsidal furrows obsolete; propodeum declivous, more

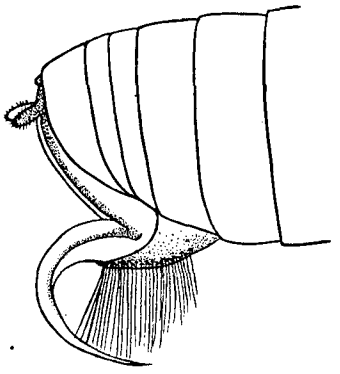

Fig. 2

Genital organ of *Elasmosoma berolinense* RUTHE (♀)

coarsely reticulate-rugose than the mesonotum, on the apical half irregularly carinated. Radius inserted at the middle of the stigma; radial cell very narrow; three cubital cells, of which the 2nd is quadrate; intercubital nervures indistinct; nervulus postfulcal by its own length. Hind tibial spurs subequal, a little shorter than the basal joint of the hind tarsi. Abdomen flat, a little longer than the head and thorax together; 1st tergite 1.5 times as long as broad at the apex, with a tubercle at the middle of each lateral margin, from the tubercle towards the base it is gradually narrowed, at the apical half parallel-sided, the other tergites transverse, the 2nd and 3rd equal in length; three basal tergites distinctly, the rest finely, shagreened; ovipositor longer than the hind tibial spurs, strongly curved inwardly, sickle-form, usually concealed, the sheath very short; hypopygium sharply acute, with long hairs.

Length 2 mm.

Described from nine females.

♂. The writer has not get seen the male.

This species is known as a guest of *Formica rufa* LINNÉ in Europe. According to KARIYA it is parasitic on *Formica rufa japonica* MOTSCHULSKY at Gifu. The present writer has received one female from S. KARIYA, and eight females which were reared from a nest of the same ant from T. KANI.

Habitat—Honshu (Gifu, 1 ♀, 18/V, 1931, S. KARIYA; Kyoto, 8 ♀♀, 7/V, 1933, T. KANI).

Gen. Distr.: Europe, Japan.

J. N.: *Ari-yadori-komayu.*

The writer wishes to express his sincere thanks to Messrs. T. KANI and S. KARIYA who kindly sent material for his present use.

摘　　要

Paxylomma arakawae (MATSUMURA) (アラカハアリヤドリバチ、改稱) は *Paxylommatidae* (アリヤドリバチ科、新稱) に隷屬す。著者は *Lasius fuliginosus* LATRELLE (クロクサアリ) の巢の附近にて本種を多數採集したれば、恐らくこの蟻を襲ふものならん。

Elasmosoma berolinense RUTHE (アリヤドリコマユ、新稱) は *Braconidae* (コマユバチ科) に隷屬し、ヨーロツパに於ては *Formica rufa* LINNÉ の寄生蜂として知られ、又本邦に於ては苅谷正次郎可兒藤吉兩氏の觀察するところに依れば *Formica rufa japonica* MOTSCHULSKY (クロヤマアリ) を襲ふと云ふ。