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G. V.: Formosa.

J. N.: *Taiwan-ôzô*.

ON TWO BRACONID PARASITES OF SUGAR CANE PESTS IN FORMOSA

By

CHIHISA WATANABE

The following two species of *Braconidae* recorded by A. MORITSUGU⁽¹⁾ and S. TAKANO⁽²⁾ as parasites of *Scirpophaga nivella* FABRICIUS, which is a serious pest of sugar cane in Formosa, have been sent to the writer from Mr. S. TAKANO for identification.

1. *Shirakia jokohamensis* (CAMERON)

Bracon jokohamensis CAMERON, Int. Ent. Zeitsch., Guben, p. 288, ♂ (1910); FAHRINGER, Opusc. bracon., Bd. I, p. 321, ♂ (1927).

Bracon seitzii CAMERON, Int. Ent. Zeitsch., Guben, p. 288, ♂ (1910); FAHRINGER, Opusc. bracon., Bd. I, p. 339, ♂ (1927) (syn. nov.).

Camptyloneurus jokohamensis MATSUMURA, 6000 Ill. Insect. Japan-Empire, p. 73, fig. 400, ♀ (1931).

Shirakia jokohamensis WATANABE, Ins. Mats., VIII, p. 185, ♀ (1934).

Braconid sp. II, MORITSUGU, l. c., p. 42, ♂ ♀ (1931); TAKANO, l. c., p. 2 (1934).

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

♂. Reddish yellow; antennae and tips of the mandibles black; vertex with a large black spot at the middle; wings infusate, an irregular hyaline streak runs outwards from the base of the stigma; stigma and veins dark brown, the basal half of the former yellow; hind tibiae at the apex and their tarsi fuscous; 2nd to 6th tergites with a black spot on each side, the spots of the 4th to 6th tergites sometimes obsolete, being very variable.

Head and thorax smooth and shining, pubescent; parapsidal furrows deep, crenulate; propodeum smooth, with a longitudinal median carina. First abscissa of the radius a little shorter than the 2nd; 1st intercubitus oblique, as long as

(1) Report Dept. Agr. Govern. Res. Inst. Formosa, No. 50 (1931).

(2) Taiwan Shosaku Kenkyû-kaihô, Vol. 11, No. 10 (1934).

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the 2nd abscissa of the radius; 2nd intercubitus vertical; recurrent nervure received in the 1st cubital cell at a short distance from the apex; nervulus interstitial. Abdomen longer than the head and thorax taken together, reticulate-rugose; 1st tergite with a median raised area which is coarsely reticulate; 2nd tergite with an oblique crenulate furrow on each side, converging, but not meeting apically, the subtriangular area defined by the furrows coarsely reticulate-rugose; 6th tergite with a transverse crenulate furrow at the hind margin.

Body-length 8-12 mm.

♀. Closely resembles the male, but differs from it in the following points:

1. Wings hyaline, infuscate at the apical margin, with two transverse black bands, the one runs outwardly from the parastigma, and the other one from the apex of the stigma, which is variable in size, sometimes interrupted at the middle; stigma yellow, the basal half black. In one specimen the wings closely resemble those of the male.

2. Abdomen generally with four black spots at the sides of the 2nd and 3rd tergites.

3. Ovipositor reddish brown, the sheath black, flat, slightly dilated towards the apex, covered with short white hairs uniformly.

Body-length 9-13 mm., ovipositor-length 2-3 mm.

Bracon seitzii CAMERON is separated from *jokohamensis* by the difference in the number of black spots of the abdomen, in the colour of the wings and in the structure of the raised area of the 2nd tergite, but in a series of the present specimens these characters are very variable, the writer is therefore synonymising *seitzii* under *jokohamensis*.

Host—*Scirpophaga nivella* FABRICIUS.

According to A. MORITSUGU this species is a parasite of the larva of *Scirpophaga nivella* FABRICIUS in Formosa. The present writer has received from S. TAKANO a series reared from the same host at the Sugar Experiment Station, Government of Formosa.

Cocoon—Grayish white, cylindrical. Length 25 mm., width 4 mm. It is found in the gallery of the host-larva (after MORITSUGU).

Habitat:—Honshu (Yokohama, after CAMERON; Tokio, 1 ♂, 1/viii, 1914, S. HIRAYAMA; 1 ♀, 28/vii, 1928, T. ITO; Ōshima, 2 ♀ ♀, 1 ♂, 1/viii, 1923, M. YAMANAKA; Wakayama, 7 ♀ ♀, 4 ♂ ♂, 1927-32, S. SAKAGUCHI and F. WADA; Katayama, 1 ♂, 2/ix, 1920, K. TAKEUCHI; Hagi, 2 ♀ ♀, 9/viii, 1904, S. MATSUMURA)—Shikoku (Ehime-ken, 1 ♂, 17/vii, 1916, S. MATSUMURA; Kōchi, 1 ♀, 1 ♂, ix, 1929, 1 ♀, 7/vi, 1930, 1 ♂, 17/vi, 1930, 1 ♀, 20/ix, 1932, 1 ♂, 17/viii, 1933, Y. SUGIHARA)—Kiu-shu (Nagasaki, 1 ♀, 25/vii, 1929, M. YAMANAKA)—Okinawa (1 ♀, 1 ♂, 1923, S. SAKAGUCHI)—Formosa (Taihoku, 1 ♂,

25/viii, 1922, N. TAKEDA; Shinten, 1 ♂, 16/vii, 1922, J. SONAN; Shinka, 1 ♀, 20/vi, 1926, S. MATSUMURA; Hôzan, 1 ♀, 1 ♂, 12/x, 1920, M. ISHIDA; Kôhekirin, 2 ♀ ♀, xii, 1918, M. ISHIDA).

J. N.: *Yokohama-madara-komayu*.

2. *Macrocentrus jacobsoni* SZÉPLIGETI

Macrocentrus jacobsoni SZÉPLIGETI, Notes Leyden Mus., 29, p. 230, ♀ (1908).

Braconid sp. I, MORITSUGU, l. c., p. 41, ♀ (1931); TAKANO, l. c., p. 2 (1934).

♂. Yellowish red; tips of the mandibles black; flagellum of the antenna and the apical three tergites fuscous; wings subhyaline, the 2nd basal cell tinged with yellow; stigma dark brown.

Head transverse, scattered punctures; face with a short median furrow above; antennae slender, 53 jointed, the 1st joint of the flagellum a little shorter than the 2nd and 3rd joints united. Mesonotum and scutellum shining, scattered punctures; parapsidal furrows deep, strongly crenulate; median lobe of the mesonotum prominent, depressed posteriorly; meso- and metapleurae strongly punctate; propodeum closely reticulate-rugose, laterally margined. Radius inserted at the apical third of the stigma; 1st abscissa of the radius half as long as the 2nd; 2nd cubital cell longer than high, slightly narrowed towards the apex; 2nd intercubitus as long as the 1st abscissa of the radius; recurrent nervure inserted at the apical fourth of the 1st abscissa of the cubitus; nervulus slightly postfurcal; radial cell of the hind wings sessile, coarctate owing to a sinus of the cubitus. Legs long and slender, the longer tibial spur of the hind legs as long as 1/3, the shorter spur as long as 1/4 of the 1st joint of the hind tarsi. Abdomen long and slender; 1st tergite parallel-sided, thrice as long as broad; 2nd tergite shorter than the 1st, with a longitudinal furrow at the lateral sides; 3rd quadrate, and the subsequent tergites transverse; two basal tergites and the basal third of the 3rd tergite striate-rugose, the rest smooth and shining with pubescence.

Body-length 10 mm.

♀. Closely allied to the male, but differs from the latter in the following points:

1. Antennae brownish yellow, 60 jointed.
2. Nervulus interstitial or slightly postfurcal.
3. Ovipositor yellowish red, the sheath brown, covered with short white hairs uniformly.

Body-length 10-12 mm., ovipositor-length 14-16 mm.

Host—*Chilo infuscatellus* SNELLEN, *Diatraea venosata* WALKER, *Scirpophaga nivella* FABRICIUS.

This species is recorded by A. MORITSUGU as a parasite of the larva of *Scirpophaga nivella* FABRICIUS. The present writer has received from S. TAKANO a series of this parasite and its cocoon reared from the larva of *Chilo infuscatellus* SNELLEN by H. TAKAHASHI on the 4th of August, 1932, at the Sugar Experiment Station. According to S. TAKANO's private communication it is also parasitic on the larva of *Diatraea venosata* WALKER.

Cocoon—Reddish brown, cylindrical, surrounded by a small amount of loose silk. Length 13 mm., width 4 mm.

Habitat:—Java (after SZÉPLIGETI)—Formosa (Shinka, 2 ♀ ♀, 27/vi, 1915, M. ISHIDA, 1 ♀, 1 ♂, 4/viii, 1932, H. TAKAHASHI).

J. N.: *Ameiro-higenaga-komayu*.

摘 要

曩に森次與(甘蔗の白螟蟲に關する調査研究、臺灣總督府中央研究所農業部報告、第五十號、1931) 並に高野秀三(臺灣産甘蔗螟蟲類の寄生蜂並に其文献目錄、臺灣蔗作研究會報、第拾壹卷、第拾號、1934) の兩氏は臺灣に於て *Scirpophaga nivella* FABRICIUS (ツマキシロメイガ) の幼蟲に寄生する學名未詳の二種のコマユバチを報告したが、今度高野氏の依頼でその標本を調べ、兩氏の Braconid sp. I (アメイロコマユバチ) は *Macrocentrus jacobsoni* SZÉPLIGETI (アメイロヒゲナガコマユ)、Braconid sp. II (クロホシコマユバチ) は *Shirakia jokohamensis* (CAMERON) (ヨコハママダラコマユ) であることが判明した。尙高野氏の私信に依れば *Macrocentrus jacobsoni* SZÉPLIGETI は他に *Chilo infuscatellus* SNELLEN (ウスグロノメイガ) 及び *Diatraea venosata* WALKER (スヂメイガ) にも寄生すること云ふ。