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NOTES ON *BRACONIDAE* OF JAPAN

I. HELCONINI

By

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(With 3 Textfigures)

The *Helconini* is a tribe of *Braconidae* erected by W. H. ASHMEAD in 1900, representing MARSHALL's tribe *Helcotides* or FÖRSTER's subfamily *Helconinae*. Not more than fifty species have been described in the world now, and as far as I am aware of, only two species have been recorded from Japan by P. CAMERON and S. MATSUMURA, but according to my present study eight more species ought to be added to the Braconid-fauna of this country, two of them being unrecorded species, and the others new to science.

Several species of this tribe are parasitic in the coleopterous larvae, mostly belonging to *Cerambycidae*, but the species which inhabit in Japan are totally unknown to me in their life-histories.

All the specimens dealt with in this paper are preserved in the Entomological Museum, Hokkaido Imperial University.

Here I express my sincere thanks to Prof. S. MATSUMURA for his kind advice and help in finishing this investigation.

Key to the Genera

- 1. Recurrent nervure received in the 2nd cubital cell; body-colour reddish yellow with some black markings. *Brulléia* SZÉPLIGETI
- Recurrent nervure received in the 1st cubital cell; body-colour black. *Helcon* NEES

Genus *Brulléia* SZÉPLIGETI

Brulléia SZÉPLIGETI, Genera Insectorum, 22-24, p. 150 (1904); VIERECK, Bull. U. S. Nat. Mus. Washing., 83, p. 24 (1914).

Type—*Brulléia melanocephara* SZÉPLIGETI

1. *Brulléia shibuensis* MATSUMURA

Doryctes shibuensis MATSUMURA, Thous. Ins. Jap. Suppl., IV, p. 151, ♀, Pl. LII, Fig. 1, ♀ (1912); id., System. entom., Vol. II, p. 269, ♀ (1915).

Brulléia shibuensis MATSUMURA, Ill. Thous. Ins. Jap., Vol. II, p. 142, ♀, Pl. XVI, Fig. 1, ♀ (1930); id., Ill. Ins. Japan-Empire, p. 73, Fig. 399, ♀ (1931).

[Ins. Mats., Vol. VI, No. 1, Oct., 1931]

♀. Antennae 42-44 jointed, with joints 10 (11)-17 whitish; 2nd transverse cubital nervure bent somewhat before the cubitus; 3rd, except the basal margin, and the following abdominal segments black.

♂. Closely resembles the female, but differs from it in having the antennae distinctly slenderer, (broken at the apex beyond the 31st joint), lacking a white ring in the middle.

Leng. 23 mm.

Hab.—Honshiu (Shibu, 1 ♀ 11/VIII. 1910, Dr. S. MATSUMURA; Tokyo, 1 ♂ 4/VI. 1912, S. HIRAYAMA, & 3 ♀ ♀ 11/VII. 1922, Dr. S. MATSUMURA).

Distr.—Japan.

J. N.: *Shibu-onaga-tsunokomayu*.

Brullèia chinensis TURNER* from North China may be a variety of this species, only differing in the 2nd transverse cubital nervure which is oblique but not bent.

Genus *Helcon* NEES

Helcon NEES, Mag. Ges. Nat. Fr. Berlin, VI, p. 216 (1812); id., Hymen. Ichneum. aff. Monogr., I, p. 224 (1834); MARSHALL, Trans. Ent. Soc. London, p. 189 (1889); THOMSON, Opusc. entom., p. 1721 (1891); MARSHALL, Spec. Hymén. Europe, V, p. 214 (1893); ASHMEAD, Proc. U. S. Nat. Mus., Vol. 23, p. 120 (1900); SZÉPLIGETI, Genera Insectorum, 22-24, p. 151 (1904); VIERECK, Bull. U. S. Nat. Mus. Washing., 83, p. 67 (1914).

Gymnoscelus FÖRSTER, Verh. naturh. Ver. preuss. Rheinl., XIX, p. 255 (1862); ASHMEAD, Proc. U. S. Nat. Mus., Vol. 23, p. 120 (1900); SZÉPLIGETI, Genera Insectorum, 22-24, p. 151 (1904).

Type—*Helcon tardator* NEES

Key to the Subgenera and Species

- 1. Frontal excavation deep; 1st discoidal cell petiolate; clypeus straight at the apex. 2
 (Subgen. *Helcon* s. str.) 2
- Frontal excavation fine, almost absent; 1st discoidal cell sessile; clypeus round at the apex. 7
 (Subgen. *Aspidocolpus* WESMAEL) 7
- 2. Hind femora beneath armed with a strong tooth. 3
- Hind femora beneath simple, unarmed. 6
- 3. Antennae black, with a white ring in the middle. *cornutus* CAMERON
- Antennae black, lacking a white ring in the middle. 4
- 4. Hind femora slender; 1st tergite of the abdomen rugose, lacking longitudinal carina; terebra much longer than the body. *aequator* NEES
- Hind femora stout; 1st tergite of the abdomen rugose, with two longitudinal carinae; terebra a little longer than the body. 5
- 5. Tarsi black; carinae of the 1st abdominal tergite reached the apex. *ruspator* L.
- Tarsi white; carinae of the 1st abdominal tergite reached beyond the middle.
 *uchidai* nov. sp.

* Ann. Mag. Nat. Hist. p. 171, ♂ (1918).

6. Antennae black, lacking a white ring in the middle; first two abdominal tergites and the basal half of the 3rd rugose, with two longitudinal carinae in the 1st. *yezonicum* nov. sp.
 - Antennae black, with a white ring in the middle; 1st abdominal tergite rugose, with four longitudinal carinae. *tricolor* nov. sp.
 7. 2nd abscissa of the radius shorter than the 2nd cubitus; antennae brownish red, the base and apex black; first two abdominal tergites rugose. *jozanum* nov. sp.
 - 2nd abscissa of the radius longer than the 2nd cubitus; antennae black, often with a white ring in the middle; 1st abdominal tergite rugose. 8
 8. Antennae with no white ring in the middle; terebra shorter than the body, the sheath entirely black. *aino* nov. sp.
 - Antennae with a white ring in the middle; terebra longer than the body, the sheath at the apex white. *albiterebra* nov. sp.

Subgenus *Helcon* s. str.

2. *Helcon (Helcon) cornutus* CAMERON

Helcon cornutus CAMERON, Trans. Nat. Hist. Soc. Glasgow, Vol. I, p. 270, ♀ (1885-86); DALLA TORRE, Catalog. Hymen., IV, p. 84 (1898); SZÉPLIGETI, Genera Insectorum, 22-24, p. 151 (1904); MATSUMURA, Nippon-ekichu-mokuroku, p. 98 (1908).

Hab.—Honshu (Fukui after CAMERON).

Distr.—Japan.

J. N.: *Tsunokomayu*.

I have never seen this species.

3. *Helcon (Helcon) aequator* NEES

Helcon aequator NEES, Mag. Ges. Nat. Fr. Berlin, VI, p. 219 (1812); id., Hymen. Ichneum. affin. Monogr., I, p. 229 (1834); THOMSON, Opusc. entom., p. 1723, ♀ ♂ (1891); MARSHALL, Spec. Hymén. Europe, V, p. 218, ♀ ♂ (1893); SZÉPLIGETI, Genera Insectorum, p. 151 (1904); id., Ann. Mus. Nat. Hungar., p. 426 (1908).

This is the first record to the Braconid-fauna of Japan; a single female specimen was collected by Dr. S. MATSUMURA in Saghalien, without exact locality and data, and a male specimen at Pübung in North Saghalien on the 8th of August, 1922, by H. KÔNO and K. TAMANUKI.

Hab.—Saghalien.

Distr.—Europe & Saghalien.

N. J.: *Hoso-tsunokomayu*.

4. *Helcon (Helcon) ruspator* LINNÉ

Ichneumon ruspator LINNÉ, Syst. nat. Ed., 10a I, p. 565 (1758).

Helcon ruspator NEES, Hymen. Ichneum. affin. Monogr., I, p. 230 (1834); RATZBURG, Ichneum. d. Forstinsect., II, p. 67 (1848); KAWALL, Bull. Soc. Nat. Moscou, XXXVIII, p. 31 (1865); THOMSON, Opusc. entom., p. 1724 (1891); MARSHALL, Spec. Hymén. Europe, V, p. 219, ♀ ♂ (1893); SZÉPLIGETI, Gen. Insect., p. 151, ♀ ♂ (1904); id., Ann. Mus. Nat. Hungar., p. 426 (1908).

This is the first record to the Braconid-fauna of Japan; one female specimen

was collected at Jōzankei on the 31st of August, 1907, and two female specimens in August, 1909, at Sapporo by Dr. S. MATSUMURA.

Hab.—Hokkaido.

Distr.—Europe & Japan.

N. J.: *Momobuto-tsunokomayu*.

Comparing my specimens collected in Hokkaido with the typical specimen, I found some difference in the colouration between them. In a series of my specimens, the legs are tinged with black, the hind tarsi being brownish black.

5. *Helcon (Helcon) uchidai* nov. sp.

♀. Black; legs black, 4 anterior femora and tibiae reddish yellow, all the tarsi pale yellow. Wings fumato-hyaline; stigma and veins dark brown.

Head broader than the thorax, smooth and shining; face striate-rugose, the clypeus truncate at the apex; frontal excavation deep with a blunt horn, surrounded by a few striae. Antennae as long as the head and thorax taken together, 38 jointed. Thorax smooth and shining; prothorax strongly striated, the median lobe of mesonotum rather prominent, slightly depressed posteriorly, with a median longitudinal carina, crossed by some transverse striae; parapsidal furrows deep, finely crenulated in the middle; scutellum anteriorly bifoveated, each fovea being separated by a sharp median carina. Metanotum coarsely reticulate-rugose, with two longitudinal carinae in the middle, enclosing a small circular area, with a longitudinal carina at each lateral margin; metapleurae strongly reticulate. 1st discoidal cell distinctly petiolate; 1st abscissa of the radius as long as a half length of the 2nd; anal cell of the fore wings with two transverse nervures, nervulus interstitial. Hind legs elongate, the femora very incrassate, serrated finely beneath, with a stout subapical tooth before the apex. Abdomen as long as the head and thorax taken together; 1st tergite rugosely punctured, a little longer than 3 times as long as its apical breadth which is 2 times longer than the basal, with two longitudinal carinae from the base, extending to two-thirds of the tergite, the area between the carinae smooth and shining; 2nd and the following tergites transverse, smooth and shining, the hypopygium elongate but not surpassed the end of the abdomen. Terebra longer than the body, 17 mm.

Leng. 15 mm.

♂. Unknown.

Hab.—Hokkaido (Kamiotoineppu, 1 ♀ 15/VII. 1929; Zenibako, 1 ♀ 27/VII. 1919, Dr. T. UCHIDA).

J. N.: *Ô-momobuto-tsunokamayu*.

Closely allied to *Helcon ruspator* L., but differs from the latter in having

the tarsi pale yellow, the hypopygium elongate, and the longitudinal carinae in the 1st abdominal tergite not reached the hind margin.

6. *Helcon (Helcon) yezonicum* nov. sp.

♀. Black; palpi, mandibles, except the apex, 4 anterior legs with the coxae yellowish red; hind legs black, the trochanters and the apices of the femora yellowish red. Wings fumato-hyaline; stigma and veins brown.

Head subcubital, smooth and shining; face closely rugosely punctured, clothed with white pubescence; palpi thick and long, the 2nd and 3rd labial palpi very short, dilated, which taken together are a little shorter than the 4th; frontal excavation very deep with a blunt horn; clypeus truncate at the apex. Antennae as long as the head and thorax combined, 35 jointed. Thorax finely punctured; prothorax rugosely striated; median lobe of the mesonotum not prominent, slightly depressed posteriorly, reticulate-rugose; parapsidial furrows clearly defined, finely crenulated; metanotum closely reticulate-rugose, with two median longitudinal carinae in the middle, enclosing a triangular area, with a strong longitudinal carina at each lateral margin. 1st discoidal cell petiolate, the 2nd abscissa of the radius 2 times longer than the 1st; 2nd cubital cell in a trapezoid-form; nervulus slightly postfurcal; anal cell of the fore wings with two distinct transverse nervures; radius of the hind wings slightly curved at the middle. Hind femora not dentate beneath. Abdomen as long as the head and thorax taken together; 1st tergite as long as the following two, gradually broadened from the base, reticulate-rugose, with two fine longitudinal carinae from the base to beyond the middle; 2nd tergite cubital, reticulate-rugose, being much closer than in the 1st; 3rd tergite transverse, finely rugose at the base, the following tergites smooth and shining. Terebra as long as the thorax and abdomen taken together, 8 mm.

Leng. 10 mm.

♂, Unknown.

Hab.—Hokkaido (Jôzankei, 2 ♀ ♀ 1/VII. 1912; Sapporo, 1 ♀ 24/VI. 1912, Dr. S. MATSUMURA).

J. N.: *Ezo-tsunokomayu*.

Closely allied to European species, *Helcon tardator* NEES, but differs from it in having the hind coxae and femora black, the first two abdominal tergites and the base of the 3rd rugose.

7. *Helcon (Helcon) tricolor* nov. sp.

♀. Black; 4 anterior femora and tibiae somewhat reddish brown, the apex of the 1st, and the 2nd to 4th joints of the tarsi, the 5th maxillal palpi, the belly of the 1st abdominal segment, a narrow ring of the antennae beyond the

middle yellowish white. Wings fumato-hyaline; stigma and veins dark brown.

Head transverse, smooth and shining; face rugosely punctured, with a few transverse striae at the middle; frontal excavation deep with a blunt horn, strongly margined laterally; clypeus at the apex truncate. Antennae as long as the head and thorax taken together, 31 jointed, with joints 13-17 white. Thorax coarsely punctured; prothorax rugose with some striae, median lobe of mesonotum rather prominent; parapsidal furrows well defined, finely crenulated; mesopleurae smooth and shining at the middle. Metanotum shallowly reticulate-rugose, with five longitudinal carinae, the median carina being diverged near at the base, enclosing a lanceolate area. 1st discoidal cell petiolate, 2nd abscissa of the radius not more than twice as long as the 1st; nervulus slightly postfurcal; anal cell of the fore wings with a transverse nervure and an indication of the 2nd.

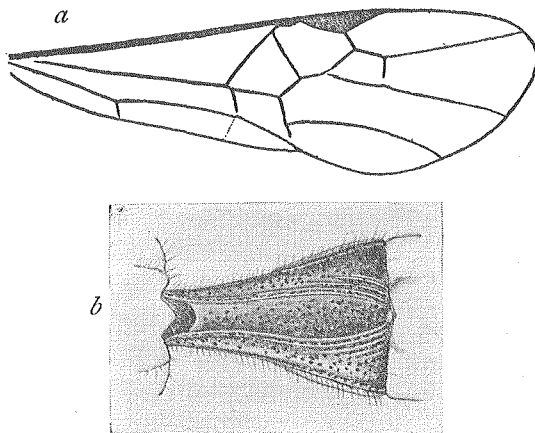


Fig. 1.

- a. Fore wing of *H. tricolor* nov. sp. (♀)
 b. 1st abdominal segment of *H. tricolor* nov. sp. (♀).

Legs elongate, the hind femora very finely serrated beneath, lacking a tooth. Abdomen as long as the thorax; 1st tergite a little shorter than the following three tergites combined, gradually broadened towards the apex, the width of which is about 3 times as long as at the base, coarsely punctured, with 4 strong longitudinal carinae, two of which are very close together, running from each of the basal angles nearly to the apex, laterally margined. 2nd and the following tergites transverse, smooth and shining. Terebra as long as the metathorax and abdomen taken together, 7-5.5 mm.

Leng. 11-9 mm.

♂. Unknown.

Hab.—Hokkaido (Sapporo, 1 ♀ 29/VI. 1927, Dr. T. UCHIDA; Sounkei, 1 ♀ 16/VII. 1930, the author).

J. N: *Shirohige-tsunokamayu*.

This may easily be distinguishable from the related species which were treated by FÖRSTER as *Gymnoscelus* by the white ring of the antenna, and the 1st tergite of abdomen with 4 longitudinal carinae.

Subgenus *Aspidocolpus* WESMAEL

Aspidocolpus WESMAEL, Nour. Mém. Acad. Soc. Belg., Vol. II, p. 155 (1838); THOMSON, Opusc. entom., p. 1726 (1891); ASHMEAD, Proc. U.S. Nat. Mus., Vol. 23, p. 120 (1900); SZÉPLIGETI, Gen. Insect., p. 152 (1904).

Type—*Helcon (Aspidocolpus) carinator* NEES

8. *Helcon (Aspidocolpus) jozanum* nov. sp.

♀. Black; mandibles, except the apex, 4 anterior tarsi, tibiae, and femora, the latter only at the apices, yellowish red. Antennae brownish red, the basal two joints and the apical third black. Wings humato-hyaline; stigma and veins dark brown.

Head transverse, broader than the thorax, very closely punctured; face rugose, with a median longitudinal carina, extending to the lower ocellus; frontal excavation almost absent; clypeus at the apex round but not pointed. Antennae a little longer than the head and thorax taken together, 33 jointed; 1st joint of the flagellum longer than the 2nd. Thorax closely punctured; median lobe of the mesonotum rather prominent, slightly depressed posteriorly, with a median longitudinal carina, crossed by some transverse striae; parapsidal

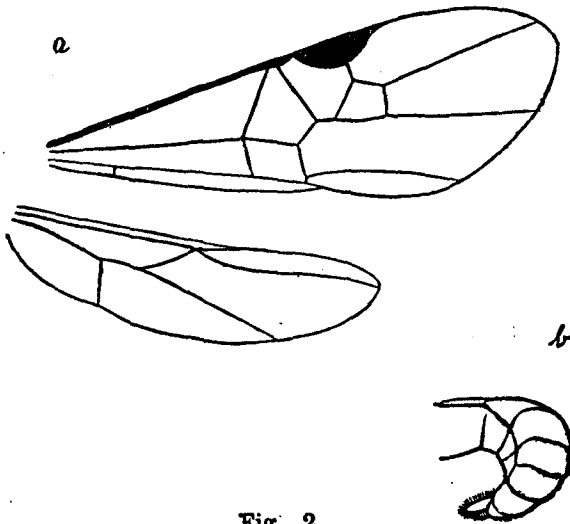


Fig. 2.

a. Wings of *H. jozanum* nov. sp. (♀)

b. Lateral view of the abdomen of *H. jozanum* nov. sp. (♂)

furrows deep, crenulated in the middle; scutellum anteriorly deeply bifoveate, each fovea separated by a sharp median carina; mesopleurae rugose, nearly smooth at the middle. Metathorax reticulate-rugose, with an indistinct carina in the middle, and a strong carina at each lateral margin. 1st discoidal cell sessile, 1st abscissa of the radius as long as a half length of the 2nd which is shorter than the 2nd cubitus; recurrent nervure received in the 1st cubitus far beyond the middle; anal cell of the fore wings with a single transverse nervure. Abdomen a little longer than the head and thorax taken together; 1st tergite $1\frac{1}{2}$ times longer than the apical breadth which is 2 times longer than the basal, with two short longitudinal carinae; 2nd tergite

subcubital, striate-rugose at the middle of the base; the other tergites transverse, smooth and shining. Terebra a little shorter than the thorax and abdomen combined, 7 mm.

Leng. 11 mm.

♂. Closely resembles the female, but differs from it in having the antennae longer and slenderer, being a little shorter than the body, 38 jointed; abdomen slenderer, the apical segments curved downwardly, with two lower anal appendages which are flattened, nearly as long as the penis.

Leng. 10 mm.

Hab.—Hokkaido (Jōzankei, 3 ♀ ♀, 2 ♂ ♂ 8/VII. 1907, Dr. S. MATSUMURA).

J. N.: *Jōzan-tsunokomayu*.

Closely allied to *Helcon carinator* NEES, European species, but differs from it in having the black coxae, and abdomen in the male at the apex curved downwardly, with two large anal appendages.

9. *Helcon (Aspidocolpus) aino* nov. sp.

♀. Black; mandibles, except the apex, 4 anterior legs, except the coxae and trochanters, yellowish red; belly of the abdomen at the base pale yellow; wings hyaline; stigma and veins dark brown.

Head subcubital, somewhat dilated behind the eyes, finely punctured; face and cheeks closely rugose; clypeus at the apex round, pointed. Antennae very short, a little shorter than the head and thorax taken together, 30 jointed. Thorax finely punctured; median lobe of the mesonotum not prominent; parapsidal furrows deep and broad, finely crenulated; metanotum closely reticulate-rugose, with two indistinct longitudinal carinae in the middle. 1st discoidal cell sessile; 1st abscissa of the radius very short, as long as the one-fourth length of the 2nd which is a little longer than the 2nd cubitus; 2nd transverse nervure oblique; nervulus interstitial;

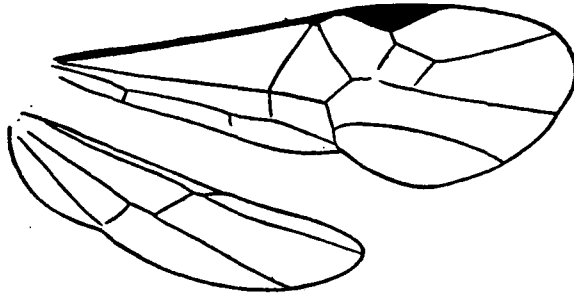


Fig. 3.

Wings of *H. aino* nov. sp. (♀)

anal cell of the fore wings with a transverse nervure and an indication of the 2nd. Abdomen short, as long as the thorax; 1st tergite as long as the apical margin which is 2 times longer than the basal, rugosely reticulate, with two longitudinal carinae, running from the base to the middle, the tubercles

prominent, which are situated before the middle; the other tergites transverse, smooth and shining. Terebra as long as the thorax and abdomen combined, 6 mm.

Leng. 8 mm.

♂. Unknown.

Hab.—Hokkaido (Sounkei, 1 ♀ 16/VII. 1930, the author).

J. N.: *Ainu-tsunokomayu*.

This may be easily distinguished from the cogenetic species by the length of the 2nd abscissa of the radius, which is a little longer than the 2nd cubitus as in *Schauinslandia* ASHMEAD, but differs from the latter in having the 2nd cubital cell distinctly petiolate.

10. *Helcon (Aspidocolpus) albiterebra* nov. sp.

♀. Black; legs reddish brown, 4 posterior coxae and tibiae black; a narrow ring of the antennae, belly of the abdomen at the base, one-fifth length of the ovipositor-sheath at the apex pale yellow. Wings fumato-hyaline; stigma and veins dark brown.

Head subcubital, somewhat dilated behind the eyes, smooth and shining; face finely punctured, clothed with white pubescence, the frontal excavation almost absent; clypeus round at the apex, with a sharp tooth at the middle, two pits of the clypeus large. Antennae a little shorter than the body, 49 jointed, the joints 19–28 white. Thorax smooth and shining; median lobe of the mesonotum not prominent, slightly depressed posteriorly; parapsidal furrows deep and crenulated. Metanotum coarsely reticulate-rugose, with two indistinct longitudinal carinae, very close near by the middle, with a strong longitudinal carina at each lateral margin. 1st discoidal cell sessile; 2nd cubitus shorter than the 2nd abscissa of the radius, which is 3 times as long as the 1st abscissa of the radius; 2nd transverse cubital nervure oblique, curved; nervulus distinctly postfurcal, the anal cell with two transverse nervures. Abdomen as long as the head and thorax taken together, the 1st tergite 2 times longer than the breadth at the apical margin, which is a little broader than at the base, coarsely longitudinally striated, with two longitudinal carinae, running from the base near to the middle, the tubercles prominent, which are situated at the one-third from the base; the other tergites smooth and shining. Terebra much longer than the body, 15 mm.

Leng. 10 mm.

♂. Unknown.

Hab.—Honshu (Wakayama, 1 ♀ VIII. 1912, S. ISHIKI).

J. N.: *Ojiro-tsunokomayu*.

This is closely allied to the preceding species in the neurulation, but differs from it in having the nervulus postfurcal, and two transverse nervures in the anal cell; antennae and ovipositor annulated with white, the latter being much longer.

摘 要

著者は數年來本邦産小蘗蜂科の研究を續け來たれるが、今後機會ある毎にその研究の完成したる部分を順次發表せんと欲す。

本文には *Helconini* の内十種を擧げたるが、その二種は本邦未記録にして、他の六種は新たなものなり。

本邦産 *Helconini* の小蘗蜂の學名、和名及び分布は次の如し。

		分 布
1. <i>Brullia shibuensis</i> MATSUMURA	シプラナガツノコマユ	(改稱) 本 州
2. <i>Helcon (Helcon) cornutus</i> CAMERON	ツノコマユ	(改稱) 本 州
3. <i>H. (") aequator</i> NEES	ホソツノコマユ	(新稱) 樺 太、ヨ-ロッパ
4. <i>H. (") rufator</i> LINNÉ	モ、プトツノコマユ	(新稱) 北海道、ヨ-ロッパ
5. <i>H. (") uchidai</i> WATANABE (n. sp.)	オホモ、プトツノコマユ	(新稱) 北海道
6. <i>H. (") yezonicum</i> WATANABE (n. sp.)	エゾツノコマユ	(新稱) 北海道
7. <i>H. (") tricolor</i> WATANABE (n. sp.)	シロヒゲツノコマユ	(新稱) 北海道
8. <i>H. (Aspidocolpus) jozanum</i> WATANABE (n. sp.)	ジャウザンツノコマユ	(新稱) 北海道
9. <i>H. (") aino</i> WATANABE (n. sp.)	アイヌツノコマユ	(新稱) 北海道
10. <i>H. (") albivirebra</i> WATANABE (n. sp.)	ラジロツノコマユ	(新稱) 本 州