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FAUNA OF THE THYSANOPTERA IN JAPAN

By

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(Part IV)

In 1928, Mr. MOULTON published "The Thysanoptera of Japan" (Ann. Zool. Jap. 1928, No. 4.) and he identified one species in that paper as *Ecacanthothrips sanguineus* BAGNALL which was collected at Koshun (Formosa) by Dr. R. TAKAHASHI, though it was an unique specimen. In 1932, Mr. MIKIO KUROSAWA described one new species of this genus collected by T. NOGUCHI at Shizuoka (near Tokyo) with the name *E. inarmatus* KUROSAWA (Kontyu, Vol. 5, No. 5, pp. 238-243, Fig. 1, 1932). So we know up to date only two species of *Ecacanthothrips* in Japan. In 1930, Dr. PRIESNER published thirteen species of *Ecacanthothrips* in the "Indomalayische Thysanopteren II" (Treubia, Vol. XI, No. 3, pp. 357-371, Figs. 10, 1930.), in which are included two new species, two new varieties and three recorded species with the descriptions as being found in the Ethiopian, Australian and Oriental Regions.

In Japan, there are three species, the two of which are mentioned already, and the other will be described as new on this occasion.

Distribution of the sixteen species of the genus *Ecacanthothrips*

No.	Name	Patri	Region	Province
1	<i>E. sanguineus</i> BAGNALL	New-Guinea	Australian	Malay
2	" <i>crassiceps</i> KARNEY	"	"	"
3	" <i>inermis</i> BUFFA	"	"	"
4	" <i>coxalis</i> BAGNALL	"	"	"
	var. <i>philippinensis</i> PRIESNER	Philippines	"	"
5	" <i>bagnalli</i> PRIESNER	Malay Archipelago	Oriental	"
6	" <i>coniger</i> PRIESNER	Borneo	"	"
7	" <i>bryanti</i> BAGNALL	"	"	"
8	" " " f. <i>obscurata</i> PRIESNER	"	"	"
9	" " " f. <i>tenuis</i> PRIESNER	"	"	"
10	" <i>flavipes</i> BAGNALL	"	"	"
11	" <i>coxalis</i> BAGNALL	"	"	"
12	" " " var. <i>consanguineus</i> PRIESNER	"	"	"
13	" <i>steinskyi</i> SCHUMUTZ	Ceylon	"	Ceylon
14	" <i>matsumurai</i> sp. nov.	Formosa	"	Indo-China
15	" <i>inarmatus</i> KUROSAWA	Japan	Paelearctic	Manchuria
16	" sp. BAGNALL	Seychelles	Ethiopian	Madagascar

Key to the species of *Ecacanthothrips*

- 1 (2) Head 1.3 times as long as wide. Sensoria 10-12.
crassiceps KARNY (German-New-Guinea)
- 2 (1) Head (at least including vertex) 1.5-1.8 times as long as wide. Sensoria more than 10-12.
- 3 (8) Fore femora in both sexes without tooth at the middle.
- 4 (5) Seg. 3-8 of the antenna pale yellow.
inermis BUFFA (New-Guinea)
- 5 (4) Distal part of the antenna infuscated.
- 6 (7) Sensoria of seg. 3 in a row, hereupon only about 13.
bognalli PRIESNER (Malay Archipelago)
- 7 (6) Sensoria of seg. 3 in many rows, extending to the middle of the segment, especially at the outer side. Sensoria about 30.
coniger PRIESNER (Borneo)
- 8 (3) Fore femora of the male with one tooth inwardly near the middle, another one seldom wanted at the tip; in the female with a tooth near the middle.
- 9 (10) Antenna entirely fuscous. Fore femora of the male variable in the form and pubescence. Middle and hind tibiae wholly fuscous. Seg. 4 of the antenna longer than 3. Sensoria 15-20.
steinskyi SCHUMUTZ (Ceylon)
- 10 (9) At least seg. 5-6 of the antenna at each base pale yellow or brownish yellow, with a lighter part in each middle; fore tibia clear yellow, the middle and hind tibiae yellowish, at least partly yellow.
- 11 (12) Fore tibia of the female (male unknown) inwardly without toothlet or wart-row. Seg. 4 of the antenna also partly pale yellow.
sanguineus BAGNALL (New-Guinea, Formosa)
- 12 (11) Fore tibia of the female inwardly at the apical half with 3-4 small toothlets or warts.
- 13 (20) Numerous sensoria of the antennal seg. 3 in 2 or 3 rows downwardly and outwardly. Tibiae almost entirely yellow, the ground colour yellow. Fore femora of the male mostly on the entire outer ridge with long or short hairs, being mostly thickened. Seg. 4 of the antenna longer than 3, nearly as long as 5. Fore coxa of the male elongated.
- 14 (15) Fore coxa of the male not elongated, fore femora not thickened.
flavipes BAGNALL (Sarawak, Borneo)
- 15 (14) Fore coxa of the male elongated, fore femora strongly thickened. Seg. 3 of the antenna distinctly longer than 4.
matsumurai sp. nov. (Formosa)
- 16 (19) All tibiae pale yellow.
- 17 (16) Sensoria of the female (male unknown) only 10 in a row.
inarmatus KUROSAWA (Japan)
- 18 (16) Fore femora of the male with long hairs outwardly along the entire length, or female
bryanti f. *obscurata* PRIESNER (Borneo)
- 19 (18) Fore femora of the male with short and thick hairs outwardly along the entire length.
bryanti f. *tenuis* PRIESNER (Borneo)
- 20 (16) Middle and hind tibiae (at least the latter except the basal and distal part) little strongly infuscated, being not pale-yellow
bryanti f. *obscurata* PRIESNER (Borneo)
- 21 (13) Sensoria of seg. 3 of the antenna at the distal part set on a ring-row, often becoming double.
- 22 (23) Seg. 4 and 5 of the antenna distinctly longer than 3. All tibiae pale yellow.
cf. *flavipes* BAGNALL
- 23 (11) Seg. 3, 4 and 5 of the antenna respectively equal in the length.

24 (25) Sensoria more than 35.

cf. sp. BAGNALL (Seychelles)
cf. *coxalis* var. *consanguineus* PRIESNER (Indo-Malay)

25 (24) Sensoria less than 25.

26 (27) Fore tibia pale yellow; middle tibia at the distal part broadly pale yellow, towards the base gradually fuscous.

coxalis var. *philippinensis* PRIESNER (Philippines)

27 (26) Middle tibia wholly fuscous, fore tibia largely infuscated.

28 (23) Fore coxa of the male not elongated. Fore femora weakly thickened. In the black form with less sensoria (14-17) in both sexes.

coxalis BAGNALL (Indo-Malay)

29 (28) Fore coxa of the male elongated. Fore femora of the male very strongly thickened, with thick hairs on the basal half at the outer side. Sensoria 16-28.

coxalis var. *consanguineus* PRIESNER (Indo-Malay)

Note—"Sensoria" so-called sense-cones at the seg. 3 of the antenna in this paper.

Suborder TUBULIFERA

Family PHLOEOTHRIPIDAE

Subfamily PHLOEOTHRIPINAE

Tribe *Phloeothripini*

16. *Ecacanthothrips matsumurai* sp. nov.

Male holotype: Colour: body uniformly dark brown, including antenna and all legs except the fore tibia and tarsi which are yellowish, the middle and hind tibiae being paler. Ocelli concolorous to the ground colour of the head, which is hardly visible by a transmitted light, but by a direct light. The basal half of the wings transparent and towards the apex being pale brownish yellow, with a longitudinal vein, which gradually increases its width towards the apex, all fringe-hairs being dark brown. Sensoria of seg. 3 of the antenna concolorous to the body. Sense-cones wholly transparent.

Prominent spines of the body blackish brown, except the abdominal spines which are pale yellow.

Length of the body 3.236 mm; head length .435 mm., width .252 mm., across the eyes; prothorax length .305 mm., width .392 mm. (not including coxa); pterothorax length .479 mm., width .531 mm. across the episternum; abdomen length including the tube 2.016 mm., width .452 mm. at the widest segment 2; tube length .235 mm., width at the base .104 mm., at the tip .052 mm.

Segment of the antenna: length (width) I, 59 (58); II, 55 (50); III, 162 with about 20 sensoria 46 μ . (90); IV, 151 with 4 sense-cones 46 μ . (59); V, 146 with 2 sense-cones 37 μ . (43); VI, 124 (36); VII, 86 (36); VIII, 51 (22); total length 870 μ .

Length of the spines: postocular $139\ \mu$, on the side of cheek 1st $48\ \mu$, 2nd $35\ \mu$, 3rd $41\ \mu$; on anterior angle of the prothorax $97\ \mu$, on distal end of the fore coxa $62\ \mu$, on seg. 9 of the abdomen $218\ \mu$, on the tip of the tube $200\ \mu$. Wing length $1.566\ \text{mm}$, width $.083\ \text{mm}$. at the middle.

Head elongated, cylindrical, 1.7 times as long as wide (including prolonged vertex), cheeks slightly constricted towards the base, and distally with 3 short spines at the same distance along the side, vertex prolonged into a very prominent cone, making sharp angles beyond the eyes and reaching over the insertion of the antennae. Eyes transparent, large and very finely faceted as in normal compound eye, with black pigment towards the base; ocelli, in moderate size, placed on a swollen hump which is slightly projecting between the eyes, anterior one located on the top, the two others posteriorly to make a triangle, and by a transmitted light being hardly recognizable, but only by a direct light. Antenna twice as long as the head, seg. 1 short, almost cylindrical, seg. 3 the longest, pyriform, 1.9 times as long as the width, with 20 stout sensoria arranged in 2 rows distally; seg. 4 shorter than 3, approximately 2.56 times as long as the width, with 4 sensoria; seg. 5 approximately 3.4 times as long as the width, with 2 sensoria; seg. 6-8 gradually reduced in the length or width, and the terminal seg. especially the shortest, about .3 times as long as the seg. 3 and closely united with 7.

Prothorax with the bottom broadened, being hexagonal; .7 times as long as the head, narrower than pterothorax with each a long spine at the anterior angles, at the middle of the lateral sides and posterior angles with short spines. Fore coxa large and peculiarly produced, overlapping the pterothorax by a projection, which is provided with 2 stout strong spines at the tip.

Fore femora much broadened, .84 times as long as the head, with a large tooth near the base at the inner side and another short one at the apex, with many fine hairs along the under or lower half of the femora, fore tibia broad, fore tarsi with a strong triangular tooth, occupying about the whole inner margin of the 1st tarsal joint. Middle femora the shortest $.278\ \text{mm}$., with 4-5 short stout spines; hind femora slender, $.348\ \text{mm}$., with 4 short spines along the lateral sides in the same distance, hind tibio-tarsal joints the longest, $.531\ \text{mm}$., with several very fine colourless hairs and one row of very short spines longitudinally on the ventral side.

Abdomen slightly narrower than the metathorax, with a long spine (seg. 2-6), at seg. 7-9 gradually increasing their length, the longest at seg. 9. Tube-length .76 times as long as the head, 2.8 times as long as the width at the base.

Female allotype: The coloration of the fore tibiae and tarsi brownish yel-

low, the shape and length as in the male, but the slender femora with a small tooth near the middle at the inner side, fore coxa simple, rounded, not produced.

Length of the body 3.454 mm. (this specimen slightly elongated on account of the connexivum of seg. 5 between 6 ruptured), head length .444 mm., width .262 mm.; prothorax-length .344 mm., width .392 mm. (not including coxa); pterothorax-length .392 mm., width .522 mm.; abdomen-length including tube 2.98 mm., the broadest at seg. 2; tube-length .226 mm., with' at the base .104 mm., at the tip .052 mm.

Segment of the antenna: length (width) I, 76 (55 at the base); II, 69 (52); III, 168 with about 20 sensoria 44 μ . arranged into 2 rows (84); IV, 152 with 4 transparent sense-cones 50 μ . (61); V, 149 with 2 sense-cones 44 μ . (44); VI, 115 with 2 sense-cones 54 μ . (35); VII, 83 (30); VIII, 54 (18); total length 870 μ . Length of the spines of postocular 106., on the cheeks 1st 14 μ . (the shortest), 2nd 21 μ ., 3rd 23 μ .; on near anterior angles 44 μ . and on the posterior angles of the prothorax 87 μ ., on the posterior angles of the abdominal seg. 2 122., seg. 4 131 μ ., seg. 6 174 μ ., seg. 7 218 μ ., seg. 8 174 μ ., seg. 9 218 μ ., on the tip of the tube 218 μ .

Host: unknown.

Type material: Holotype ♂ (ISHIDA No. 1611), allotype ♀ (ISHIDA No. 1602), paratype 2 ♂ and 7 ♀ collected by Prof. Dr. S. MATSUMURA on November 30, 1910, at Taihoku, Formosa. The holotype preserved in the Entomological Museum Hokkaido Imp. Univ. at Sapporo.

Type locality: Taihoku, Formosa.

摘 要

總翅目 *Thysanoptera*, 有管亞目 *Tubulifera*, 管蓆馬科 *Phloeothripidae*, 管蓆馬亞科 *Phloeothripinae*, 管蓆馬類 *Phloeothrini* に屬する *Ecacanthothrips matsumurai* sp. nov. に関して記載したものである。本邦今日迄知られたる種類は二種に過ぎなかつた。即ち 1928 Mr. MOULTON は臺灣恒春に於て高橋良一博士の採集に係る唯一の標本に對し *E. sanguineus* BAGNALL (New-Guinea) と同定して發表された。1932 年には黒澤三樹男氏により静岡産のものに對し新種として *E. inarmatus* KUROSAWA (トゲナシクダアザミウマ) 發表せられ、都合二種が本邦産として認められて居つた。然るに 1910 年松村教授の臺灣旅行中臺北にて得られた標本が當大學に保存されてあつたが正に同屬で、新種として記載發表したものである。本編中には各種別の産地名又は其特徴に關し索引表を設け研究上の資料となした。種名は採集者なる松村教授の名を永く紀念すべく命名したものである。