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FAUNA OF THE THYSANOPTERA IN JAPAN

By

MASATO ISHIDA

(Part III)

(With Plate I)

In these series of paper I wanted to describe as complete as possible the recorded or unrecorded and new species of Thysanoptera from various parts of Japan. The following species were published in Part I *Chirothrips watanabei* ISHIDA, Saghalien; *Aeolothrips albicinctus* f. *flavithorax* PRIES. (unrecorded) Saghalien; and *Aeolothrips fasciatus* L. (recorded) Sapporo, Hokkaido; and in Part II *Aeolothrips concinus* ISHIDA, Saghalien; *Heliothrips aino* ISHIDA, Saghalien; *Gynaikothrips claripennis* KARNY (recorded) Formosa; and *Gynaikothrips flavus* ISHIDA, Formosa.

In this paper I have described six new species, including *Machatothrips ipomoeae* sp. nov. with a larval form collected by Mr. S. UCHIYAMA on the sweet-potato in Ponape Island (Caroline, Japan mandate); *Idolothrips yashiroi* sp. nov. collected by Mr. H. YASHIRO on *Legenaria vulgaris* var. *clavata* at Okinawa; *Idolothrips kawamurai* sp. nov. collected by the late H. KAWAMURA at Kumamoto (1907) and by Prof. Dr. S. MATSUMURA (1916); *Machatothrips ohtai* sp. nov., which was bred on *Lenzites* sp. with a larval form; *Machatothrips femoralis* sp. nov., which was collected by Mr. Y. OHTA in Sapporo; *Machatothrips isshikii* sp. nov., (host unknown) collected by Mr. S. ISSHIKI in Saghalien. Here I have a pleasure to express my great thanks to Prof. S. MATSUMURA for his kind direction and also to those who have collected these materials for my present study.

The photographs were made by myself common camera (Ica 9 × 12) attached to a microscope by means of horizontal system, and using a big filter lens through the light of 100 volt (300 w.) lamp.

[Ins. Mats., Vol. VII, No. 1 & 2, December, 1932]

TUBULIFERA

Family PHLOEOTHRIPIDAE

Subfamily *PHLOEOTHRIPINAE*

Tribe *Idolothripini*

10. *Idolothrips kawamurai* sp. nov.

Female Holotype. Colour: body and femora uniformly blackish brown, antennal segments 1,2,7 and 8 concolorous to the head, segment 3 grayish yellow with a pale brownish shade at the distal portion, 4 to 6 predominating with grayish yellow, 4. dark brown in the outer fifth, 5. of the same colour on the outer fourth, 6. on the outer half. Eyes reddish brown and the posterior ocelli grayish brown, but the anterior ocellus invisible owing to the opacity of the head. Fore tibia yellowish brown with a dark brown shade along the upper and lower margins, the middle and hind tibiae yellowish brown, predominating with dark-brown at the basal third or fourth, all the tarsi yellowish.

Fore wings pale grayish brown darker at the extreme base, with a median longitudinal vein which is abruptly broadened a little beyond the middle of the wing, where it terminates. Hind wings lighter, with a median longitudinal vein extending to about the middle of the wing. All prominent spines of the body transparent to clear yellowish and fringe-hairs brownish.

Total length of the body 3.555 mm.; head-length .595 mm., width across the eyes .289 mm., near the base .272 mm.; prothorax-length .272 mm.; pterothorax-length .51 mm., width at anterior angles .589 mm.; at metasternum .723 mm., width of 2nd abdominal segment .765 mm.; tube-length .98 mm., width at the base .17 mm.; fore and middle femor a-length subequal .383 mm., width .183 mm., hind tibia-length .697 mm.

Segment of antenna: length (width) I, 81 mc. (at the base 68 mc. at the tip 54 mc.) II, 81 (47); III, 340 with 2 sense cones 124 (47); IV, 298 with 4 sense cones 97 (46); V, 36 with 2 sense cones 76 (43); VI, 136 with 1 sense cones 55 (34); VII, 72 with 1 sense cone 55 (24); VII, 76, mc.; total length 1.348 mm. Length of eyes .14 mm., width .10 mm. Length of spines: interocellar 102 mc., on mid-dorsal about .187 mc.; on 7th abdominal segment 255 mc., on 8th 187 mc., on 9th 306 mc., at the tip of the tube 255 mc., mid-lateral at fore femora 171 mc., on mid-lateral of the middle femora 145 mc., on near the base of hind femora 153 mc., on the distal portion of the femora about 170 mc.

Head long and cylindrical, 2.05 times as long as the greatest width across the eyes, surface of the head transversely finely striated; cheeks with a number

of short spur-like spines, the longest one of which is specially noticeable and located at the mid-dorsal of the head, head broadened at a trifle just before the neck-like constriction at the base, vertex produced into a very prominent, conical hump at the front of the eyes and overreaching the insertion of the antennae. Eyes large, finely facetted, bulging slightly, extending as far around under the side of the head as on the upper; ocelli small, widely separated, the anterior one occupying the extreme vertex, almost invisible dorsally, the posterior pair nearly on a line in the middle of the eyes, and contiguous with the inner margin, often invisible, unless by a favorable condition of focus in a transmitted light, owing to the opacity of the head. A prominent interocellar spine placed beyond the posterior ocelli and rather close to the anterior angles of the eyes. Prothorax small and depressed, about .45 as long as the head with a prominent median dorsal thickening, spines on the prothorax very scanty, on some specimens only 2 spines extending up to the anterior angles from the pronotum, these spines set on near the coxae. Mesothorax much wider than the prothorax, episternum with pointed acuto-angles, at the sides almost parallel, whilst at some specimens very slightly constricted towards the anterior or posterior portions. Fore and middle femora almost of the same length, but the former a little enlarged with several spur-like spines, one of which placed on the mid-lateral, being the largest, the hind femora the longest of all, with a several spur-like spines, one of which is very strong and placed beyond the middle of the joint, and a secondarly strong spine located at the distal portion. Wings broad and strong, reaching to the middle of the 8th abdominal segment, with about 37–40 double fringe-hairs along the posterior margin.

Abdomen broadly connected with the thorax and widened to the segment 2 and then narrowing gently towards the segment 3 to the base of the tube, and spines on the posterior angles of the abdominal segments 6, 7 and 9 very long, but on the 8th being shorter. Tube spinous, approximately 1.65 times as long as the head and 5.75 times as long as width at the base, narrowing to the tip, with shorter spines.

Type material: holotype ♀ (ISHIDA No. 673) one paratype ♀ (ISHIDA No. 339) were collected by late H. KAWAMURA on July 22, 1907, host unknown and another one paratype ♀ (No. 676 dry specimen) taken by Prof. Dr. S. MATSUMURA at Beppu on July 10, 1916., holotype preserved in the Entomological Museum, Hokkaido Imp. Univ. in Sapporo.

Type locality, Kumamoto, Beppu (Kiushiu).

11. *Idolothrips yashiroi* sp. nov.

Female aptera holotype. Colour: frontal half of the body dark brown, abdomen mostly blackish, antennal segments 1, 6, 7 and 8, concolorous with the head, segment 2. distally paler, 3. balsam-yellow, 4. basal half concolorous with the segments 3, in distal half with a brownish shade, segment 5. blackish brown except the basal third yellowish. Fore tibia yellowish-brown, with a dark brown shade along the upper and lower margins; all tarsi yellowish-brown. The pigment of the eyes black in a transmitted light, but in a direct light reddish, facets clear transparent. Posterior ocelli orange-red with a metallic reflection in a direct light. Spines of the body clearly transparent and pale yellowish.

Length of the body 2.21 mm.; head-length .34 mm., width near the base .255 mm., prothorax length .17 mm., width including coxae .425 mm.; pterothorax-length .255 mm., width .493 mm.; abdomen including tube 1.377 mm., width of 3rd segment .689 mm.; tube-length .323 mm., width at the base .108 mm., at the tip .055 mm. Segment of antenna: length (width) I, 47 (at the base 54, at the tip 41); II, 68 (38); III, 128 with 2 sense cones 34 (51); IV, 119 with 2 sense cones 34 (41); V, 95 with 2 sense cones 34 (39); VI, 74 with 2 sense cones, short 17 long 32 (31); VII, 50 (27); VIII, 41.; total length 544 mc. Length of spines: postoular 137 mc., on fore coxae 43 mc.; 6tha bdominal segment 149 mc., on 7th 176 mc., on 8th 115 mc., on 9th and the tip subequal 230 mc.

Head 1.33 times as long as wide, surface of the head very finely transversely wrinkled, cheeks set on a number of short stout spines; head broadened at a trifle just before the neck-like construction at the base; vertex produced into a very prominent, conical hump in the front of the eyes and overreaching about .3 the length of the head. Ocelli small, widely separated, the anterior one invisible dorsally, owing to the position of the extreme vertex, the posterior ones nearly on a line in the middle of the eyes and contiguous to the inner margins of the eyes, often invisible, unless in a direct light, in consequence of the opacity of the head. Mouth-cone short, extending to near the base of prosternum, rounded at the tip and somewhat pointed towards the labrum. Antenna inserted under the vertex and appoximately 1.6 times as long as thehead, segment 3, the longest, about 2.5 times as long as wide, with 2 sense cones and other segments gradually reduced. Postocular spines located rather close to the posterior inner angles of the eyes, about 1.2 times as long as the greatest length of the eyes.

Prothorax small, .5 times as long as the head, with a prominent median

dorsal thickening as in the previous species. Spines of prothorax very scanty, only with a pair of short coxal spines, being conspecious. Pterothorax a trifle broader than the prothorax and appear's nearly square, at the sides almost parallel, a little less than twice as wide as the head; epimeron and metasternum highly developed. Legs short as compared with the length of the body, fore femora slightly enlarged a little more than .43 width of the head, with a spine distally and the middle femora shorter than the fore femora, with 3 small spines at near the base and a long spine in the mid-lateral, the hind femora the longest, with a number of shortspines a long the outer margin and a strong slender spine near the middle, otherwise with a fine spine at the distal.

Fore tarsi armed with a large tooth, occupying the entire surface of the 1st tarsal joint.

Abdomen broadly ovate, a little wider than the pterothorax, segment 3. the broadest, tapers gradually from 4. to the tube and wanted spines at the segments 1. to 4, whilst on the posterior angles of the segments 5. to 9. with strong sharp prominent spines. Tube with very fine scruptures, a little more .95 times as long as the head, at the extreme base very slightly constricted and gently reduced the width to the tip.

Male aptera allotype. Colored as in the female. Total length of the body 3.125 mm.; head-length .349 mm., width near the base .225 mm.; prothorax length .23 mm., width including coxae .485 mm.; pterothorax-width .485 mm.; abdomen-width .672 mm.; tube-length .315 mm., width at the base .102 mm., at the tip .051 mm.

Segment of antenna: length (width) I, 54 (49); II, 50 (35); III, 135 with 2 sense cones 30 (41); IV, 122 with 2 sense cones 22–30 (36); V, 95 with 2 sense cones 27–30 (32); VI, 74 with 2 sense cones 31 (32); VII, 43 (27); VIII, 41; total length 625 mc. Length of forefe mora .425 mm., width .153 mm. Length of spines; postocular 104 mc.; on near the base of fore femora 128 mc.; on the base of the middle femora 97 mc.; on the posterior angles of 6th abdominal segment 162 mc.; on 7th 187 mc., on 8th 136 mc., on 9th 272 mc.; at the tip of the tube 255 mc.

Male aptera shaped as in the female except with the much larger fore armed femora, and prothorax a little broader than the pterothorax. Each fore tarsus with a strong sharp tooth, about 47 mic. long.

Type material: holotype ♀ (ISHIDA No. 1071) allotype ♂ (ISHIDA No. 1077) and another paratype ♀ 1, ♂ 2, were collected by Mr. H. YASHIRO on July 7, 1931 on *Lagenaria vulgaris* var. *clavata*, the holotype preserved in the Entomological Museum Hokkaido Imp. Univ. at Sopporo.

Type locality: Okinawa, Japan.

12. *Machatothrips femoralis* sp. nov.

Female holotype. Colour: head and prothorax dark brown, pterothorax yellowish brown except epi mesosternum, metascutum and metasternum dark-brown; abdomen yellowish brown with segments 2. to 7. shaded with dark-brown along the outer margin, segments 8. to 9. dark brown, tube yellowish on the basal one 4th, dark shaded in the distal three 4ths. All femora dark brown, lighter at the extreme base; all tibiae lighter than the femora, at the tips yellowish; all tarsi yellowish. Antennal segments 1. and 2. concolorous with the head, 2. lighter in the distal portion, segment 3. clear light yellowish brown in the basal half, shading to dark brown in the distal half, segments 4. to 8. uniformly dark brown, with a white transparent ring in the segments 3, 4. and 5. on each tip. Fore wings grayish brown with a dark median longitudinal vein which is becomes gently broadened in the middle, reaching to the tip, the hind wings nearly similar to the fore wings. All prominent body-spines transparent and clear yellow, but the spines of the tube and fringe-hairs dark brown.

Total body-length 5. mm.; head-length .765 mm., width .408 mm.; prothorax-length .425 mm., width .85 mm.; width of pterothorax .935 mm., abdomen-length 3.93 mm., width of 2nd abdominal segment .893 mm.; tube-length .544 mm., width at the base .162 mm., at the middle .128 mm., at the tip .077 mm.; length of fore femora .553 mm. width .153 mm.; length hind femora .68 mm., width .162 mm. Segment of antenna: length (width) I, 85 (85); II, 128 (68); III, 234 with 4 sense cones 75 (85); IV, 230 with 4 sense cones 75 (77); V, 179 with 2 sense cones 60 (60); VI, 128 (51); VII, 111 (42); VIII, 51 (34); total length 1.19 mm. Length of the eyes .162 mm., width .103 mm. Length of spines: interoceller .034 mm.; postocular .383–400 mm.; on fore coxa .145 mm.; on anterior angles of prothorax .17 mm., on posterior angles .261 mm., on mid-lateral .235 mm.; on fore femora .187 mm.; on middle femora .153 mm.; on 9th abdominal segment .536 mm.; at the tip of the tube .383 mm.; basal 3rd wing spine .323 mm.

Head much elongated cylindrical, 2.18 times as long as width, cheeks straight, verrucose in the frontal two 3rds, with a number of short spur-like spines, in the basal one 3rd smooth. Interocellar spines very short and curved, prostocular spines very long and located at the middle of the head, far beyond from the eyes. Eyes small, not protruding, and occupying in a short space of .21 the length of the head. Ocelli large, anterior one remote from the base of the antenna, the posterior ones placed on a swollen hump at the same distance between the eyes. Antenna approximately 1.5 times as long as the head, segment 3. the longest, 2.75 times as long as wide, segment 4. about 3 times

as long as wide, segments 3. to 6. gradually reduced the length or width, and the terminal segment especially the shortest, .21 times as long as the segment 3. and closely united with the segment 7.

Prothorax .55 times as long as the head, narrower (except coxae) than the pterothorax. with some strong curved spines at the anterior angles and the mid-lateral, the posterior angles almost straight. Length of the fore femora as long as the head, mesothorax a little broader than the prothorax or metathorax, tegulae well developed and a little protruding from the epimeron, the 1st stigma smaller than the ocelli, with a net-work circle, the middle and hind legs long and slender. Each femur with a row of 4 or 5 short spur-like spines; each fore tarsus armed with a big sharp claw-like tooth, occupying the whole inner margin of the 1st tarsal joint. Wings fully developed, long blade-like, with long basal spines and much compact fringe-hairs along the margins.

Abdomen little broader than the metathorax, with long spines at the posterior angles of the segments 5. to 8., about .98 times as long as the tube.

Tube long .71 times as long as the head, 3.4 times as long as the width at the base.

Type material: holotype ♀ 1 was collected by Mr. Y. OHTA on June 7, 1930 (ISHIDA No. 132) paratype ♀ 1 (No. 1156) taken by Mr. K. IGARASHI on May 22, 1932, holotype preperved in the Entomological Museum Hokkaido Imp. Univ. at Sapporo.

Type locality: Sapporo, Japan.

1.3 *Machatothrips isshikii* sp. nov.

Female Holotype. Colour: uniformly reddish chestnut-brown including the 1st two segments of the antenna and fore femora except the middle and hind femora, which are blackish-brown segments 7. and 9. and the tube, which are dark brawn, with the tip of the tube lighter, the fore tibia yellowish-brown, with a yellowish shade in the distal one 3rd, the middle and hind tibiae, which are yellowish at the base, with a blackish brown shade towards the distal portion, being shaded at the tip. All tarsi yellowish. Antennal segment 3. yellowish at the base, with a brown shade distally and near the tip yellowish, 4. yellowish at the basal half with a dark brown shade near the tip, being lighter at extreme tip, 5. basal yellowish one 3rd with a blackish-brown shade at the two 3rds 6. basal 5th yellowish with a blackish-brown shade at the tip, segments 7 to 8 wholly blackish brown.

Fore wings pale grayish-brown, with a rudimentary cubitus which becomes abruptly dissipated in the middle of the wing. Prominent spines of the thorax

and abdomen clear yellow to light brownish-yellow and fringe-hairs blackish brown.

Total body length 3.145 mm.; head length .383 mm., width (broadest part) .3 mm.; prothorax length .27 mm., width (not in cluding coxae) .51 mm.; pterothorax length in the middle .43 mm., width at tegulae .66 mm.; 6th abdominal segment .6 mm.; tube length .36 mm., width at the base .111 mm., at the middle .081 mm., at the tip .057 mm.

Segment of antenna: length (width) I, 54 (54); II, 61 (47); III, 139 with sense cones 62 (54); IV, 135 with 2 sense cones 56 (47); V, 128 with 2 sense cones 64 (42); VI, 95 with 2 scnse cones 56 (34); VII, 61 (31); VIII, 41 (19); total length 723 microns. Length of the eye .136 mm., width .085 mm.; length of fore fcmora .468 mm., width .213 mm.; legth of middle femora .34 mm., length of hind femora .493 mm. Length of spines: on fore coxae (upper the longest) 85 mc.; on the posterior angles of the 7th nbdominal segment 149 mc., on 8th 128 mc., on 9th 142 mc., at the tip of the tube 255 mc.; basal wing spines, 1st 47 mc., 2nd 95 mc., 3rd 104 mc.

Head 1.27 as long as the greatest width across the middle of the head at the apex swollen slightly, cheeks slightly constricted behind the eyes, the broadest in the middle and again constricted at the extreme base, with large or small verrucous processes, three of which are larger, and arranged longitudinally near the eyes and another 2 larger ones at the same distance, being located near the base. All spines of the head wanted wholly. Eyes large, not protruding, occupying .32 the length of the head. Ocelli small. Mouth-cone thin, narrowly rounded, labrum broad, slightly pointed at the middle, reaching to the anterior margin of prosternum.

Prothorax .52 as long as wide, no spine as on the head, pterothorax with a prominent tegula at the sides, converging gradually towards the posterior. Fore femora enlarged, but not more than .72 as wide as the head, the middle femora the shortest, the hind femora the longest. Each fore femur armed with two tooth-like processes placed on the distal portion, each fore tarsus armed with a stout claw-like tooth, occupying the inner side of the 1st tarsal joint. Wings broad and slightly bent, reaching to the abdominal segment 7. with 10 or 12 double fringe-hairs along the posterior margin near the tip.

Abdomen narrower than the pterothorax, elongated, segment 3. the narrowest, 4. to 6. gradually broadened, from 7. again reducing their width. Tube .023 mm. shorter than the head, 3.25 times as long as the width of the base, with weak spines at the posterior angles of all abdominal segments.

Type material: Holotype ♀ was collected by Mr. ISSHIKI on Augst 22,

1914 (ISHIDA No. 1127) paratype ♀ 5 (Nos. 1125, 1128, 1129), the holotype preserved in the Entomological Museum Hokkaido Imp. Univ. at Sapporo., the paratype in the author's private collection.

Type locality: Saghalien (South).

14. *Machatothrips ohtai* sp. nov.

Female holotype. Colour: head, pterothorax, hind femora and tube chestnut brown, antennal segments 1, 2, 7, 8, prothorax, abdomen, fore and hind femora blackish brown; two 3rds of the antennal segment 3. at the base yellowish, with a brown shade at the distal portion, 4. the basal half yellowish, the distal three 4ths blackish brown; 5. basal two 5ths yellowish, the distal three 5ths blackish brown; 6. basal one 4th yellowish, the distal three 4ths blackish brown; fore tibia brownish yellow to brown, the middle and hind tibiae darkb rown, lighter at the basal and distal portions; all tarsi yellowish.

Wings grayish brown, lighter at the base, with a broad brownish median longitudinal vein, which becomes abruptly broadened at the three 5ths of the wing where it terminates. Hind wings lighter than the fore wings, but with the anterior part of the median longitudinal vein whitish as at the base of the wing. Prominent spines of the body clear yellow; fringe-hairs and the tube-spines brownish.

Total body length 2.45 mm.; head length .34 mm., width .272 mm.; prothorax length .23 mm., width (including coxae) .544 mm.; pterothorax length .485 mm., width .638 mm., abdominal length including tube 1.445 mm., width, .729 mm.; tube length .315 mm., width at the base .108 mm., at the tip .054 mm. Segment of antenna: length (width) I, 68 (57); II, 74 (41); III, 135 with 4 stout sense cones 22 (43); IV, 128 with 4 sense cones 28 (41); V, 111 with 4 sense cones 30 (39); VI, 95 with 4 sense cones 32 (34); VII, 74 (22); VIII, 58; total length 730 mc.

Length of spines: postocular 170 mc., on anterior angles of prothorax 102 mc., on mid-lateral 196 mc., on posterior angles 213 mc.; at distal portion of the middle tibia 136 mc.; on 6th abdominal segment .189 mc., on 7th 247 mc.; at the tip of the tube 255 mc.; basal wing spines, 1st 85 mc., 2nd 153 mc., 3rd broaken off.

Head 1.2 times as long as the greatest width at the middle, apex swollen, bearing the anterior ocellus which not protrudes beyond the basal segment of antenna, cheeks arched, slightly constricted at the eyes, broadened in the middle and again constricted towards the base, with a number of short spur-like spines, 2 of which (sometimes 3) are noticeably strong, located in the middle.

Postocular spines located rather close to the posterior inner angles of the eyes and about .5 times longer than the length of the eyes. Eyes small, not protruding, rather slooped to the basal segment of the antennae and occupying about .32 the length of the head. Ocelli small. Mouth-cone hardly extending to the base of the prosternum. Antenna about 2.1 times as long as the head, segment 3. the longest, 3.1 times as long as wide, the 5th segment 2.8 times as long as wide, another distal segment gradually reduced the length and width. Eyes with regular fine net-work facets. Prothorax .68 times as long as the head, with a median dorsal thickening much pronounced, in a trapezoidal shape, with a straight line at the lateral sides, the spines along the anterior angles being long and well developed, on the mid-latdral and the posterior angles much more developed, fore coxae armed with a series of four strong spur-like spines which are arranged radially. Mesothorax much broader than the prothorax, the anterior angles and episternum prominent, both sides almost parallel; metathorax slightly constricted towards the posterior. Fore femora enlarged as in the previous species *M. femoralis* sp. nov., with a long spine placed at the base of the joint, on the middle and hind femora also a long spine located near the base. The middle and hind tibiae bearing each a long spine at the distal portion, which of the middle tibia is the longest of all, the hind tibia the shortest. Fore tarsus armed with a sharp tooth, occupying the entire inner side of the first tarsal joint. Wings as in the previous species, the fore wings with 10 or 12 double fringe-hairs along the posterior margin. Abdomen broadly ovate, gradually reduced its width beyond segment 5, specially rounded at the posterior angles of the segment 8, and abruptly much reduced from segment 9. and terminates at the tip of the tube, the longest spines at the posterior angles of the segment 7, spines at the tip of the tube much shorter than the length of the tube. Tube .025 mm., shorter than the head and about 2.8 times as long as wide at the base.

Male allotype. Colour and shape as in the female, but with the larger femora, cheeks very slightly constricted near the base and the slender abdomen gradually reduced beyond segment 4., the prothorax specially larger or broader than the female, the fore coxae bearing 7 spur-like spines at the lateral sides.

The length of the body 2.593 mm.; head length .34 mm., width .258 mm; prothorax length 298 mm., width including coxae .527 mm; pterothorax length .383 mm., width .57 mm.; abdomen length including tube 1.583 mm., width 3rd abdominal segment .785 mm.; tube length .298 mm., width at the base .111 mm., at the tip .054 mm.

Segment of antenna: length (width) I, 72 (54); II, 74 (38); III, 124 with

4 sense cones 21 (43); IV, 119 with 4 sense cones 25 (41); V, 108 with 4 sense cones 21–28 (28); VI, 89 with 2 sense cones 28 (34); VII, 68 (30); VIII, 47; total length 730 mc. Length of the spines: postocular or on the anterior margins of prothorax subequal, 119 mc.; on the posterior angles of abdominal segments 6. to 7. and 9. subequal, 170 mc., on 8th 128 mc; at the tip of the tube 187 mc.; on lateral sides of fore coxae upper to lower 41, 30, 40, 35, 35, 19 and 17 mc.

Larvae

I. Stadium. Colour: pale dark brown with orenge-red hypodermal pigment in the thorax and abdomen, eyes dark by a transmitted light, but by a direct light it is blood-red, tube, legs and abdominal segment 9. concolorous with the body, the basal segment of the antenna pale grayish, segment 2. to 5. gradually pale dark brown, with a white ring at the extreme tip of the segment, at the tips of the segments 6. to 7. being dark brown; head pale grayish, with irregular longitudinal orange-yellow striats. The head length .102 mm., with including eyes .102 mm.; prothorax length .145 mm.; abdomen with the tube .425 mm.; segment 9 length .61 mm.; tube length .84 mm.

Length of antenna: length (width) I, 28 (23); II, 39 (27); III, 51 with 1 sense cone 21 (32); IV, 47 with 1 sense cone 21 (31); V, 41 with 1 sense cone 21 (32); VI, 34 with 1 secse cone 17 (27); VII, 55 microns. Lengs of spines: on the mid-lateral sides of the prothorax 85 mc.; on the posterior angles and on the lateral sides of the metathorax subequal 170 mc.; on the lateral sides of the metathorax 187 mc.; on the 9th segment 170 mc.; at the tip of the tube 213 mc.

II. Stadium. Colour: head reddish, with dark-brown antennae, segments 2 and 3 lighter, prothorax reddish, with the middle thickening which is darker, mesothorax and abdomen grayish yellow, semitransparent, with many reddish dodges, greater parts of them specially arranged at the lateral sides of the body; abdominal segment 9 and the tube dark brown, legs uniformly pale yellowish brown. Head length and width nearly the same, .17 mm.; protherax length .23 mm.; abdominal length including the tube 1.36 mm., width of 4th segment .621 mm., 9. and tube length the same 153 mm. Segment of antenna: length (width) I, 34 (47); II, 54 (30); III, 123 with 1 sense cone 12 (34); IV, 84 with 1 sense cone 22 (34); V, 61 with 1 sense cone 21 (30); VI, 41 (24); VII, 47; total length 451 mc. Length of spines: on mid-lateral sides of the prothorax .204 mm.; on the anterior angles of 9th abdominal segment .145 mm.: on the tip of the tube .255 mm.

Type material: holotype ♀ (ISHIDA No. 1575) allotype ♂ (ISHIDA No. 1317) 2 paratype ♀ and 6 ♂ gotten by breeding on *Lenzites* sp. of *Acacia*, on August

31, 1931, at Sapporo, the material collected by Mr. OHTA and one of the female was collected on the flower of *Helacleum lanatum* by Mr. H. YAKU June 25 1932 at Sapporo, the holotype preserved in the Entomological Museum Hokkaido Imp. Univ. at Sapporo.

Type locality: Sapporo, Hokkaido, Japan.

15. *Machatothrips ipomoeae* sp. nov.

Female aptera Holotype. Colour: blackish brown including antenna and legs except the antennal segments 2. to 5., the distal portion of the fore tibia and all tarsi paler; abdomen rather black; the tube deep blackish brown, tip of which lighter, all spines of the body clear transparent pale brown.

Length of the body 2.835 mm.; head length .372 mm., which at the eyes .223 mm., near the base .251 mm.; prothorax lenth .233 mm., width including coxae .465 mm.; pterothorax legth .37 mm., width at the middle .493 mm., width of the abdominal segment .716 mm.; tube length .316 mm., width at the base .102 mm., at the middle .089 mm., at the tip .059 mm.; length of fore femora .382 mm., which at the middle .17 mm.

Segment of antenna: length (width) I, 54 (54); II, 60 being double socket (38); III, 143 with 2 sense cones 30 (38); IV, 123 with 4 sense cones 30 (39); V, 105 with 2 sense cones 30 (38); VI, 80 with 2 sense cones 28 (33); VII, 50 with a small cycle of the sense area (29); VIII, 45; total length 567 microns. Length of eye .09 mm., width .06 mm. Length of spines: interocellar 68 mc., postocular 158 mc.; on posterior angles of 7th abdominal segment 233 mc., on 8th 121 mc., on 9th 279 mc., at the tip of the tube .223 mc.; at near the base of the fore femora .102 mc., at near the base of the middle femora 115 mc., at near the base of hind femora 111 mc.; at distal portion (outer) the middle tibia 84-93 mc.; at distal portion (outer) of the hind tibia 69 mc.

Head 1.67 times as long as wide across the eyes, cheeks gradually broadened at near the base, spinose; postocular spines extending towards the tip of the 1st antennal segment; interocellar spines rather close located within the posterior ocelli, ocelli small, the anterior one forwardly directed, invisible, the posterior pair well separated from the anterior inner margins of the eyes. Eye small with fine facets, occupying about .24 the length of the head. Mouth-cone short, rounded, extending to the half length of the prosternum. Antenna slender, approximately 1.5 times as long as the head, segments 3. to 5. claviform and 3. the longest, about 3.75 times as long as wide, segment four 3.15 times as long as wide, the other segments gradually reduced, 7. and 8. closely united. Prothorax about .61 times as long as the head, narrowly connected with the

pterothorax, the broadest near the base including the coxae, where is approximately 2. times as wide as the dorsal thickening. Spines on the anterior margin (42 mc.) and near the coxae at the poststernum (102 mc.), otherwise 2 spur-like spines st the coxae (51 mc.). Mesothorax slightly broader than the prothorax, episternum well developed, its sides slightly broadened posteriorly, the sides of the metathorax almost parallel. Fore femora much enlarged, than .76 times as wide as the head, the middle femora the shortest (.272 mm.) and the hind femora long and slender., each femur bearing one prominent spine located near the base and the middle tibia also. Fore tarsus armed with a strong claw-like tooth, occupying the entire inner surface of the first tarsal joint as in the previous species. Abdmen smoothly shining, broadly united with the pterothorax, ovate, the broadest at the segment 4. and gradually reduced towards the tube. Tube a little shorter than the head, narrowering to the extreme apex, terminal spines of the tube shorter than the spines of the segment 9.

Male aptera allotype. Similar to the female type in colour and shape, but the fore femora elongated, strongly incrassated, the fore tibia strong, stout, fore tarsus with a broad, strong, claw-like tooth as in the female.

Length of the body 3.06 mm., abdomen a little brocken, more or less with extended membran between each segment; head-length .383 mm., width across the eyes .213 mm., near the base 221 mm.; prothorax-length .23 mm., width at the base including coxae .476 mm.; pterothorax-length .34 mm., width .502 mm.; width of 3rd abdominal segment .748 mm.; tube-length .515 mm., width at the base .102 mm., at the middle .085 mm., at the tip .051 mm. Length of fore femora .442 mm., width at the broadest part .162 mm., the middle femora .298 mm.; the hind femora .4 mm.

Segment of antenna: length (width) I, 54 (54); II, 61 being double socket (35); III, 139 with 1 sense cone 35 (34); IV, 122 with 4 sense cones 28 (35); V, 97 with 2 sense cones 33 (34); VI, 80 with 2 sense cones 30 (31); VII, 50 (25); VIII, 41; total length 646 mc. Length of spines: postocular 180 mc.; on 7th abdominal segment 187 mc., on 8th 128 mc., on 9th 213 mc., at the tip of the tube 238 mc.; on fore femora 102 mc.; on lateral of the middle tibia 77 mc., on lateral of the hind tibia 94 mc.

Winged female allotype. Resembles the apterous form in colour and shape, but the fore femora moderately developed, not so strong as in the former; 2 pairs of spines at the prothorax, one of which at the mid-lateral and another at the posterior angles; spines on the 9th abdominal segment long and straight. Fore wings pale grayish-brown, shorter as compared with the great length of the abdomen, not reaching beyond the abdominal segment 5.

heavily fringed with 13 or 15 double fringe-hairs along the posterior margin, scales of the fore wings grayish-brown, the basal ring vein dark, with 3 basal spines, whitish at the base of the wings, with a dark median longitudinal shade which begins in the one 4th, terminating in the 4th or 5th part of the wings. Hind wings resemble the fore wings, but a little shorter than the premier.

Length of the body 2.89 mm.; head-length .357 mm., width across eyes .23 mm., near the base .238 mm.; prothorax-length .272 mm., width of including coxae .408 mm.; pterothorax .34 mm., width .51 mm.; width of abdomen .655 mm.; tube-length .306 mm., width at the base .111 mm., at the tip .051 mm.

Length of antenna: length (width) I, 55 (54); II, 61 being double socket (46); III, 142 with 1 sense cone 30 (36); IV, 122, with 2 sense cones 30 (38); V, 95 with 2 sense cones 35 (34); VI, 81 with 2 sense cones 30 (34); VII, 51 (28); VIII, 28; total length about 663 mc. Length of spines: interocellar about 51 mc., postocular 136 mc.; on mid-leteral margin of prothorax 85 mc., on posterior angles 128 mc.; on posterior angles of 7th abdominal segment 213 mc., on 8th 118 mc., on 9th 247 mc., at the tip of the tube 230 mc., 1st spine of fore wings broken off, 2nd spine 85 mc. 3rd spine 119 mc.: on fore femora .128 mc., on the middle femora 93 mc. Legth of femora: the fore .289 mm., the middle .238 mm., the hind .357 mm.

Larvae.

II. Stadium. Head, legs and antennal segment 1, to. 4. pale dark brown, abdominal segment 9. and the tube dark brown, all spines of the body pale yellowish brown except at the tip of the tube which is dark brown.

Length of the body about 1.87 mm.; head and prothorax length subequal 17 mm.; 9th abdominal segment .179 mm., width at the base .145 mm., at the tip .09 mm.; tube length .162 mm., at the base .094 mm., at the tip .043 mm. Length of antenna: length (width) I, 30 (41); II, 54 (30); III, 128 (30); IV, 74 (31); another segments broken off.

Length of spines at the tip of the tube the longest, 468 mc.

Larval two specimens preparated together in one slide, the material of this slide dissolved of except the chitinous substances, by using a strong solution of about 1% of caustic soda.

Type material: holotype aptera ♀ (ISHIDA No. 1104), 4 paratype and 1 allotype ♂ (ISHIDA No. 1197), 1 winged allotype ♀ (ISHIDA No. 1174.)

3 paratype ♀ (ISHIDA Nos. 1172, 1173, 1185) the holotype aptera ♀ preserved in the Entomological Museum Hokkaido Imp. Univ. in Sapporo. All material were collected from the tunnel made by *Cylas formicarius* F. in Ponape Isl. by Mr. S. UCHIYAMA, on March 2, 1932.

Type locality: Ponape Island. (Caroline, Japan mandate)

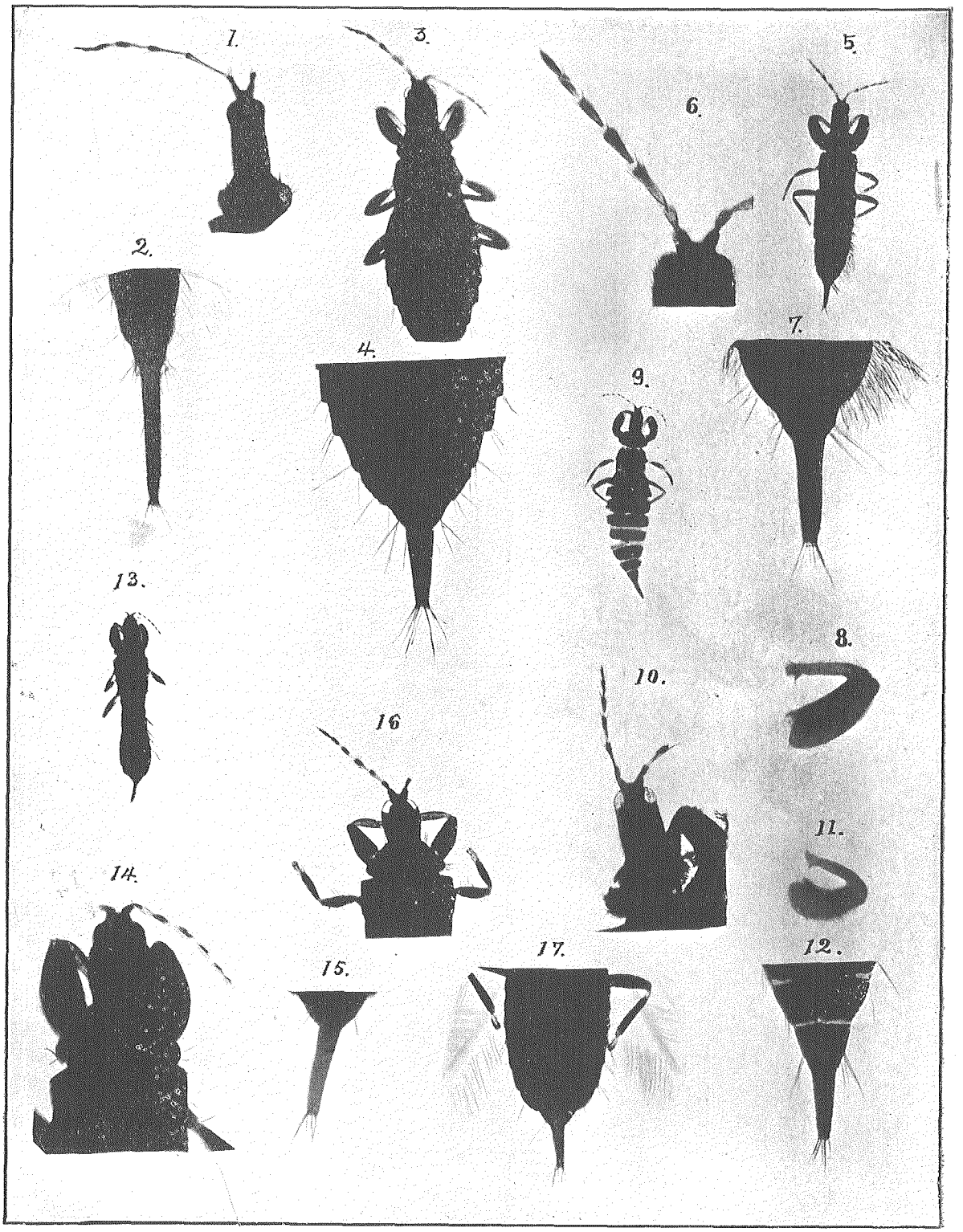
摘　　要

本編は前既に出版した二編 Part I 及 Part II に繼續し、日本產總翅目 Thysanoptera 全般に關し、本邦各地方より採集せられた標本に就て、可成詳細に記載せんとする當初の企畫に則りた續稿である。曩に Part I に於て (1). *Chirothrips watanabei* ISHIDA (新種) 樺太產、(2). *Aeolothrips albicinctus* f. *flavithorax* PRIES. (未記錄) 樺太產、(3). *Aeolothrips fasciatus* L. (記錄濟) 札幌產、等を記載した、次に Part I に於て、(4). *Aeolothrips concinus* ISHIDA (新種) 樺太產、(5). *Heliothrips aino* ISHIDA (新種) 樺太產、(6). *Tainiothrips karafutensis* ISHIDA (新種) 樺太產、(7). *Taeniothrips konumensis* ISHIDA (新種) 樺太產、(8). *Gynaithrips claripensis* KARNY (記錄濟) 臺灣產、(9). *Gynaikothrips flavus* ISHIDA (新種) 臺灣產、等に就き記載を了したが、本編 (Part III) に於ては本邦領土にあらざるも委任統治に屬するポナペ嶋產の標本多數製作し得たので、其研究の結果新種と認定した。尙、南は沖繩、九州等、又北は再び樺太及北海道等の各地方產新種、計六種を記載した。併かも是等は悉く *Suborder Tubulifera, Family Phloeothripidae, Subfamily Phloeothripinae. Tribe Idolothripini. Tribe Compsothripini* に屬する *Idolothrips* 並に *Machatothrips* の兩屬で前屬には二新種、後屬には四新種で即ち下記の如くである。

(10). *Idolothrips kawamurai* sp. nov. 熊本產、Host 不明 (11). *Idolothrips yashiroi* sp. nov. 沖繩產、Host ユウカホ (12). *Machatothrips femoralis* sp. nov. 札幌產、Host 不明 (13). *Machatothrips isshikii* sp. nov. 樺太產、Host 不明 (14). *Machatothrips ohtai* sp. nov. 札幌產、Host 菌類 (15). *Machatothrips ipomaeae* sp. nov. ポナペ嶋產 Host 蕃薯。(10) は 1907 年熊本市附近に於て、故河村英雄氏が一頭採集したのが最も古く、次に 1916 年 松村博士が別府市附近に於て採集したもの一頭、尙此外、故高椋悌吉氏が本大學昆蟲學教室に寄贈された、採集年月日不明の二頭標本（內一頭は乾燥標本）計四頭の標本であつた、但其 host に就ては悉く不明である。種名は故人河村氏曾て存命中非常に熱心な研究採集家であつた故之れに因み命名したのである。(11) は沖繩產のもので、其 host はユウカホの初生果に寄生したものだと屋代氏より報告を受けた、該種名も亦採集研究共に熱心なる屋代弘孝氏の名に因みて命名したものである、併し同作物を害するや否は不明で、更に研究を要すべき問題として殘されて居る。(12) は札幌產（圓山神社堺內）で 体長 5 mm. もあり手許に所持して居る標本中現在では最大のものである。(マレー半嶋には異屬の或種でより大きいものか棲息して居ると傳へられて居る)該種は曩に 1930 年 太田勇愛氏と五十嵐勝己氏との協力採集に係るもので一頭のみであつたが、珍種である事が判明し、爾來更に一、二頭採集する事に努力したが無駄であつた、然るに本年 (1932) 五十嵐氏の精勵其効を奏し、同一地點に於て 更に一頭を捕獲するを得、之れにより研究資料として充分價値つけられた譯である、(13) は樺太產のもので 1914年一色周知氏の名を通じて本大學に寄贈せられたるものである。兎に角く 同標本は 數も 相當にあり 且つnymph,幼蟲等をも完備して居る事とて研究上頗る有益な資料であつた、仍て是亦一色氏の名に因みて命名した。(14) は札幌產で飼育の結果獲たもので其 host はアカシヤ樹に發生した *Leuzites* sp. と稱する菌類である。該資料も亦、同學太田氏の採集に係るもので、本編は成蟲及幼蟲二世代に就て記載し、卵 nymph pupa 其他に就ては他日に讓る事にした。(15) は遠き南洋委任統治に屬するカロリン群嶋中のポナペ嶋の產で、同嶋產業試驗場ポナペ分場の內山繁太郎氏より小生宛寄贈せられたもので、其 host は蕃薯を加害するアリモドキゾウ *Cylas formicarius* F. の隧道中に寄食せるものであるとの報告を同氏より得た、果して害蟲であるや否是亦疑問視せらる處である、本編には成蟲及幼蟲に關して記載したが、機會を得て他日其遺漏部分丈補遺する企畫を有するものである。

Explanation of Plate I

1. *Idolothrips kawamurai* sp. nov. Head, prothorax, antenna, and fore legs of the female. × 23.7
2. *Idolothrips kawamurai*, end of abdomen of the female. × 235
3. *Machatothrips yashiroi* sp. nov. Head, thorax, antenna, and three pairs of legs of the female. (aptera). × 23.7
4. *Machatothrips yashiroi*, end of abdomen of the female. × 43
5. *Machatothrips femoralis* sp. nov. Female. × 6
6. *Machatothrips femoralis*, eyes and antenna of the female . × 35
7. *Machatothrips femoralis*, end of abdomen of the female. × 37
8. *Machatothrips femoralis*, upper side of right leg of the female. × 24.7
9. *Machatothrips ipomoeae* sp. nov. Male. × 10
10. *Machatothrips ipomoeae*, head, prothorax and antenna with right fore leg of the female. × 39
11. *Machatothrips ipomoeae*, upper side of right fore leg of the female. × 365
12. *Machatothrips ipomoeae*,end of abdomen of the female. × 38
13. *Idolothrips isshikii* sp. nov. Female. × 11
14. *Idolothrips isshikii*, head, prothorax, mesothorax, antenna and fore legs of thd female. × 35
15. *Idolothrips isshikii*, end of the abdomen of the female. × 44
16. *Machatothrips ohtai* sp. nov. Head, prothorax, mesothorax, antenna, fore and middle legs of the female. × 24.7
17. *Machatothrips ohtai*, abdomen, fore wings and hind legs of the female. × 25.3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