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FAUNA OF THE THYSANOPTERA IN JAPAN

(PART VII)

By

Masato Ishida

(With 3 Textfigures)

Suborder *TEREBRANTIA* Haliday

Family *THRIPIDAE* Uzel

Subfamily *THRIPINAE* Karny

21. ***Thrips physapus*** Linné f. ***brunnea*** f. nov.

Female holotype. Colour: uniformly dark brown except the distal half of all tibiae and tarsi which are pale yellow; antennal segment 3 somewhat paler than the other segments; prominent body spines brown.

Total body-length 1.875 mm., head-length 0.155 mm., width 0.172 mm.; prothorax-length 0.146 mm., width 0.249 mm.; mesothorax-length 0.244 mm., width 0.361 mm.; metathorax-length 0.189., width 0.344 mm.; abdomen-length 1.247 mm., width (at seg. 5) 0.404 mm.

Segments of the antennae: Length (width) I, 26 (33); II, 35 (29); III, 55 (25) with a sickle-like sense cone 24 μ; V, 39 (22) with 2 sense cones, the longer 21 μ, the shorter 8 μ; VI, 58 (22) with 2 sense cones, the longer 23 μ, the shorter 7 μ; VII, 17 (8); total length of the antennae 310 μ.

Length of the spines: interocellars 26 μ; postocellars 29 μ; postoculars 15 μ; at the anterior angles of the prothorax 27 μ; at the posterior angles of the prothorax, the outer 85 μ, the inner 87 μ, the middle 33 μ; on the abdominal segment 5, 65 μ; seg. 6, 68 μ; seg. 7-8, 85 μ; seg. 9, 160 μ; seg. 10, 145 μ; on the costal margin of the fore wings 1st, 39 μ; 2nd, 45 μ; 3rd, 39 μ; 4th, 47 μ; 5th, 52 μ; 6th, 55 μ; 7th, 48 μ; 8th, 52 μ; on the antennal segment 1, the lateral, 21 μ, the distal 26 μ; seg. 2, the basal 33 μ, the lateral, 27 μ, the distal, 26 μ; seg. 3, the distal, 30 μ; seg. 4, the distal, 35 μ; seg. 5, the distal, 21 μ; seg. 6, the mid-lateral, 20 μ; seg. 7, the distal, 25 μ.

Head somewhat broader than long, with many weak wrinkles on the whole surface; cheeks rounded and slightly constricted behind the eyes; interocellar and postocellar spines short, especially postoculars exceedingly short. Eyes

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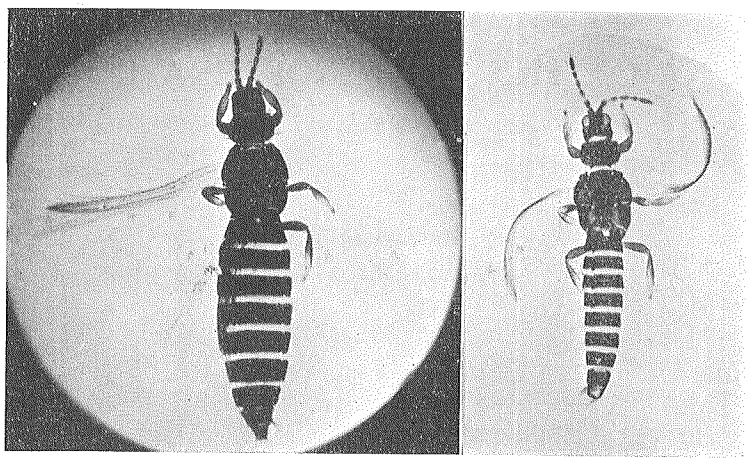


a b

Fig. 1

Thrips physapus L. forma *burunnea* f. nov.

a. female. b. male.

large, occupying about a half length of the head, slightly protruding at the outer sides; facets coarse, pilose. Ocelli large, the anterior one placed trausversely, the posterior pair not contiguous with the inner margins of the eyes. Antennae long, almost twice as long as the head; seg. 1 sub-globular, with few fine wrinkles; seg. 3 with a petiole which is inserted into the socket of the seg. 2 and a sickle-like sense cone and 4 long spines near the distal portion; seg. 4 as long as seg. 3, with a sickel-like sense cone as well as with 4 or 5 long spines near the distal portion; seg. 5 short, cuneiform, with 2 sense cones distally, one of which longer and sharper than the other; seg. 6 the longest, subspindle-shaped, with a sharp sense cone at the outer side near the middle and with a short cone at the distal portion; seg. 7 the shortest, normale, with 3 spines at the tip. Mouth cone short, broadly rounded, reaching to the middle of the coxae, with 3 jointed long maxillary palpi and simple labial palpi. Prothorax 0.95 times as long as the head (1.71 times as wide as long), with weak wrinkles and 2 strong prominent spines at the posterior angles and along the anterior margin 6 spines arranged in the same distance. Legs moderately developed. Sides of the mesothorax arched and reduced anteriorly; episternum and epimeron well developed, with a clear endothoracic invagination at the middle; sides of the methathorax arched and reduced towards the rear, with an endothoracic invagination (Chitinleisten by PRIESNER). Fore wings well developd, almost reaching to the posterior margin of the abdominal seg. 6,

broadened at the basal fourth, from there gradually narrowed to the tip, with 25 or 27 spines along the costal margin; hind wings slightly shorter than the fore wings, with a longitudinal middle vein.

Abdomen spindle-shaped; segment 5 the widest and from there reduced towards the tip; seg. 1 comparatively well developed, always closely contact to the next segment; seg. 5 to 7 with each a seta at posterior angle; spines of seg. 9 and 10 long.

Male allotype. Colour: uniformly dark brown, the detail colouration of every part of the body as in the female, but in general paler than in the female.

Total body-length 1.272 mm., except the penis; head-length 0.091 mm., width 0.145 mm. (at the cheeks); prothorax-length 0.112 mm., width 0.172 mm., mesothorax-length 0.163 mm., width 0.258 mm.; metathorax-length 0.129 mm., width 0.155 mm.; abdomen-length 0.791 mm., width 0.172 mm (at seg. 5).

Segments of the antennae: Length (width) I, 29 (30); II, 40 (27); III, 51 (21) with a sickle-like sense cone 16 μ; IV, 48 (20) with a sickle-like sense cone 20 μ; V, 39 (20) with 2 sense cones, the longer 18 μ, the shorter 11 μ; VI, 65 (22) with 2 sense cones, the longer 21 μ, the shorter 7 μ; VII, 15 (9); total length of the antennae 317 μ.

Length of the spines: postocellars 11 μ; at the anterior angles of the prothorax 20 μ, on the posterior angles of the prothorax, the outer 51 μ, the inner 56 μ; on the abdominal segment 5, 33 μ; seg. 6, 39 μ; seg. 7, 40 μ; seg. 8, 31 μ; seg. 9, 68 μ; seg. 10, 85 μ; on the antennal seg. 1, the lateral 13 μ; seg. 2, the mid-lateral 22 μ, the distal 18 μ; seg. 3, the distal 21 μ; seg. 4, the distal 21 μ; seg. 5, the distal 17 μ; seg. 6, the mid-lateral 16 μ; seg. 7, the distal 20 μ.

Head about 1.5 times as long as wide, with many weak wrinkles; cheeks rounded and slightly constricted behind the eyes; interocellars rudementally reduced (curved and very short); postoculars exceedingly short as in the female. Eyes large and protruding at the outer sides, occupying about three-fifths the length of the head; facets coarse, pilose; ocelli comparatively larger than those of the female and their arrangment as in the female.

Antennae very long, 3.46 times as long as the head; seg. 1 short, subglobular, with 2 or 3 weak wrinkles and bent spines; seg. 2 symmetrical, barrel-shaped, without wrinkles, and with 4 or 5 spines at the mid-lateral and distal portions; seg. 3 petiolate, inserted into the double socket of the seg. 2, with a sickle-like sense cone at the distal portion, and 3 or 4 straight spines; seg. 4 as long as seg. 3, with a sickle-like sense cone and very long spines; seg. 5 shorter than the previous seg., oblong-subovate, with 4 or 5 spines at the distal portion; seg. 6 the longest, subspindle-shaped, with a sharp sense cone at the

inner side near the middle and a curved cone at the outer side; seg. 7 the shortest with 2 spines at the tip. Mouth cone short, broadly rounded, reaching to the middle of the fore coxae, with 3 jointed long maxillary palpi and simple labial palpi at the tip. Prothorax about 1.23 times as long as the head, with faint wrinkles on the whole surface, almost 1.74 times as wide as long, with 2 strong, sharp, prominent spines at the posterior angles, and between the spines with 2 shorter spines. Legs well developed; fore femora and tibiae moderately thickened. Mesothorax highly developed, wider than the prothorax, the sides arched, reduced anteriorly; episternum notably elevated upon the edge of the epimeron, with an endothoracic invagination at the middle; metathorax slightly narrower than the mesothorax, the sides constricted towards the abdomen, with a clearly marked endothoracic invagination. Wings long, well developed, almost reaching to the posterior margin of the abdominal segmemt 8. Abdomen subcylindlical; seg. 1 the longest, closely contacts to the next segment; seg. 3-7 with elliptical hole-like marking (by UZEL "weisse längliche Vertiefung" or by PRIESNER "lichten Vertiefungen") at each sternite; seg. 5 the widest and from seg. 6 gradually reduced its width; seg. 9 (probably seg. 9 and 10) the narrowest, with the upwardly curved penis and slightly curved spines at the tip.

The type material: holotype ♀ (ISHIDA, No. 2362), allotype ♂ (ISHIDA, No. 2345), and paratypes 43 (33 ♀, 10 ♂) taken on the flowers of *Saussurea Riederi* HERD., on August 15th, 1936 by Mr. Y. SUGIHARA at Tokotan, Urup, and paratypes 4 ♀ collected by Dr. T. UCHIDA on the flowers of *Gentiana axillariflora* LEV'L., on July 15th, 1935, at Nikishiro, Kunashiri, Chishima (Kurile islands).

The type locality: Urup and Kunashiri, Chishima (Kurile islands), Japan.

This form is closely related to the typical form of *Thrips physapus* L., from which it is distinguished by the measurement and colouration of the important parts of the body. The writer treated it as a new local form in the Kurile islands.

22. ***Taeniothrips saussureae*** sp. nov.

Female holotype. Colour: uniformly pale yellow, except the antennal seg. 4 to 8 brown; prominent body-spines brown; fringes yellowish; eyes brown.

Total body-length 1.677 mm.; head-length 0.088 mm., width 0.167 mm.; prothorax-length 0.146 mm., width 0.206 mm.; mesothorax-length 0.189 mm., width 0.318 mm.; metathorax-length 0.155 mm., width 0.310 mm.; abdomen-length 1.058 mm., width 0.353 mm. (at seg. 4). Fore wings length 0.989 mm., width 0.112 mm; hind wings length 0.929 mm.

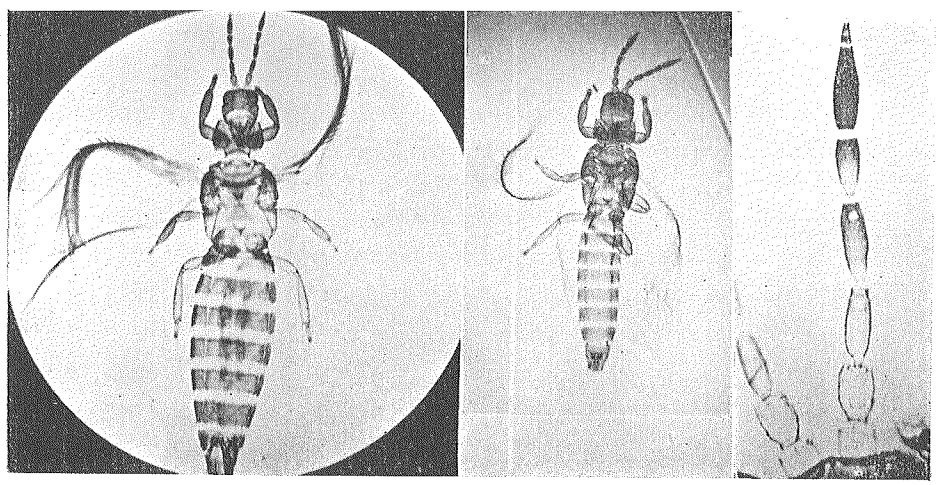
Segments of the antennae: length (width) I, 33 (30); II, 35 (27); III,

55 (20), with a sickle-like sense cone 22 μ; IV, 59 (21) with a sickle-like sense cone 22 μ; V, 49 (20) with 2 sense cones, the longer 25 μ, the shorter 10 μ; VI, 62 (20) with 3 sense cones, the longer two 28 μ, the shorter 11 μ; VII, 7 (8); VIII, 9 (7); total length of the antennae 318 μ.

Length of the spines: Postocellars 26 μ; postoculars 22 μ; at the anterior angles of the prothorax 26 μ; on the posterior angles of the prothorax, the outer 85 μ, the inner 93 μ, 2 spines at the middle of those spines near the posterior margin of the prothorax 44 μ; on the abdominal segment 2 52 μ; seg. 3, 65 μ; seg. 4, 67 μ; seg. 5, 76 μ; seg. 6, 70 μ; seg. 7, 60 μ; seg. 8, 71 μ; seg. 9, 126 μ; seg. 10, 117 μ; on the antennal seg. 1 at the distal portion, 21 μ; seg. 2 at the basal, 30 μ, at the distal, 30 μ; seg. 3 at the distal, 26 μ; seg. 4 at the distal, 22 μ; seg. 5, 20 μ; seg. 6 at the mid-lateral, 20 μ; seg. 8 at the distal, 22 μ.

Head approximately 1.9 times as wide as long with weak wrinkles on the whole surface; cheeks rounded, clearly constricted behind the eyes; spines at the interocellar exceedingly short, at the postocellar long and curved, at the postocular short.

Eyes large, about a half length of the head, and slightly protruding at the outer sides; facets very coarse, pilose. Ocelli large, the anterior placed transversely, the posterior pair not contiguous with the margin of the eyes. Antennae long, slender, 3.6 times as long as the head; seg. 1 sub-



a b c

Fig. 2

Taeniothrips saussureae sp. nov.

a. female. b. male. c. Antennae of the female.

globular, the spines near the distal portion long, bending inwardly; seg. 2 symmetrical, barrel-shaped, with 4 long sharp spines near the base; seg. 3 cylindrical, with a petiole at the base, which is inserted into the socket of the seg. 2, and a large sickle-like sense cone which is strongly curved upwardly, and 4 longer spines at the distal portion; seg. 4 slightly longer than the previous segment, with a large sickle-like sense cone and 5 or 6 spines as in seg. 3; seg. 5 short, cuneiform, with 2 sense cones, one of which near the distal portion of the inner side is longer; seg. 6 large, the longest, subcylindrical, with 3 sense cones, the first at the apical two-ninths of the outer side, long, sharp, along the side extending to the middle of the seg. 8, the second at the middle of the inner side reaching to the posterior margin of the segment, the third at the middle of the outer side, short, curved, and with a long prominent spine at the mid-lateral portion; seg. 7 normal; seg. 8 with 5 or 6 fine straight spines, especially one at the tip the longest. Mouth cone rounded at the tip, as long as the head, nearly reaching to the posterior margin of the fore coxae, with 3 jointed maxallary palpi and simple labial palpi, the latter slightly bending upwardly. Prothorax not conspicuously transverse; a pair of spines at the posterior angles long, particularly the inner one longer than the outer, with a series of 6 spines near the posterior margin, the outer 4 very short, the inner 2 prominent, half as long as the spines at the angles; mesothorax broader than the metathorax, the notable epimeron slightly pilose; metathorax fully developed, reducing behind, with a clearly marked endothoracic invagination.

Legs: fore femora and tibiae well developed and thickened, the middle and the hind legs moderately developed. Wings highly developed, reaching to the posterior margin of the abdominal segment 6, with the spines as follows: costa 26–29 (49–55 μ), fore vein 7 (63–66 μ) at the base, a large intermission followed by only 1 or 2 near the distal portion, hind vein 15 which are regularly placed.

The type material: holotype ♀ (ISHIDA No. 2396) and paratypes 20 ♀ taken on the flowers of *Saussurea Riederi* HERD., on August 13th, 1936, by Mr. Y. SUGIHARA at Tokotan, Urup.

The holotype in the Entomological Institute, Hokkaido Imperial University, Sapporo, Japan.

The type locality: Urup, Chishima (Kurile islands), Japan.

23. ***Thrips fuscicornis*** sp. nov.

Male holotype. Colour: uniformly yellowish brown except ocelli and antennal segments 1 and 2 which are paler, seg. 5 to 7 faint smoky gray-yellow, prominent body-spines brown, spines of the antennal seg. 5 to 7 colourless, transparent.

Total body-length 1.187 mm.; head-length 0.091 mm., width 0.139 mm.; prothorax-length 0.117 mm., width 0.172 mm.; mesothorax-length 0.172 mm., width 0.258 mm.; metathorax-length 0.12 mm., width 0.232 mm.; abdomen-length 0.705 mm., width 0.189 mm. (at seg. 5).

Segments of the antennae: length (width) I, 25 (29); II, 34 (26); III, 52 (20) with a sickle-like sense cone 21 μ; IV, 51 (18) with a sickle-like sense cone 21 μ; V, 39 (20) with 2 sense cones, the longer 20 μ, the shorter 9 μ; VI, 65 (21), with a sense cone 20 μ; VII, 15 (18); total length of the antennae 299 μ.

Length of the spines: interocellars 13 μ; postocellars 20; at the anterior angles of the prothorax 18 μ, at the anterior angles 2 spines 26 μ, at the mid-lateral 20 μ, at the posterior angles, the outer 54 μ, the inner-most 2 spines along the posterior margin 22 μ; at the posterior end 26 μ, 2 at the middle of the metascutum near the anterior margin 33 μ; on the abdominal seg. 2, 23 μ; seg. 3, 35 μ; seg. 4, 36 μ; seg. 5, 35 μ; seg. 6, 39 μ; seg. 7, 36 μ; seg. 8, 34 μ; seg. 9, 65 μ; seg. 10, 65 μ; antennal segment 2 near the mid-lateral portion 20 μ; seg. 3 near the distal 24 μ; seg. 4 near the distal 22 μ; seg. 5, 18 μ; seg. 6 near the mid-lateral and at the tip of seg. 7, 16 μ. Wing spines as follows: costa 22–23 (26, 30, 45, 50 μ).

Head subquadrate, broader than wide, cheeks slightly arched and faintly constricted behind the eyes, with several transverse weak wrinkles on the posterior part of the vertex. Eyes concolourous with the body, conspicuously pilose with transparent fine setae. Ocelli comparatively large, well developed, the interocellar spines short and fall down on the surface, the postocellar spines sharp, shorter than the former, distinctly wanting the postocular spines. Antennae normal, especially seg. 6 large and comparatively broadened towards the distal portion. Mouth cone shorter than the head, abrubtly tapering to the sharp cone, reaching to the middle of the fore coxae, with a pair of 3 jointed long maxillary palpi in the mid-lateral sides and simple labial palpi at the tip.

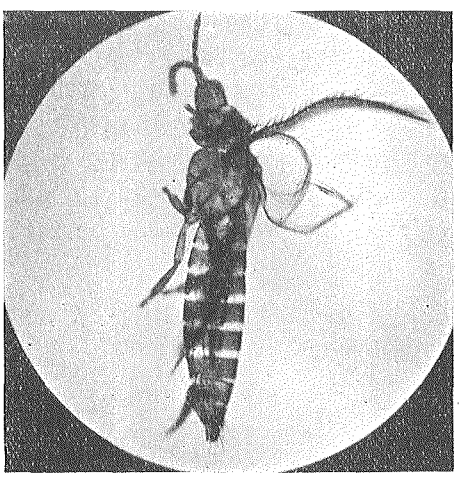


Fig. 3

Thrips fuscicornis sp. nov. female.

Prothorax subquadrate, not conspicuously tranverse, with upwardly extending spines at the anterior angles, at the posterior angles the longest, a straight

spine at the posterior end of the mesonotum, a pair of spines at the anterior portion of the mesoscutum prominent. Fore legs highly developed and thickened, the other legs normal. Wings long, broad with spines as follows: Costa 22–23 from the base to the distal portion and gradually increasing their length, 9 at the fore vein from the base to the middle, a slight intermission followed by 3 or 4, hind vein with about 9. Abdomen cylindrical, spines of each segment not prominent, only those of seg. 9–10 extending.

Female allotype. Colour: pale yellow except ocelli, antennal segment 1 whitish, seg. 3 to 5 paler at the base, distally with a shadow of pale brownish yellow, seg. 6 and 7 wholly brownish yellow, all prominent body-spines brown, but paler than in the male.

Total body length: 1.505 mm. Antennae about twice as long as the head. Segments of the antennae: length (width) I, 26 (?); II, 45 (28) III, 52 (21) with a sickle-like sense cone 23 μ; IV, 52 (21) with a sickle-like sense cone 28 μ; V, 43 (20) (sense cone invisible); VI, 54 (20) with 2 sense cones, the longer unmeasurable, the shorter 16 μ; VII, 13 (8); total length of the antennae 292 μ. Length of the spines: at the angles of the prothorax 22 μ; at the posterior 71 μ; on the abdominal seg. 5, 56 μ; seg. 6, 59 μ; seg. 7, 60 μ; seg. 8, 65 μ; seg. 9, 119 μ; seg. 10, 106 μ.

The type material: holotype ♂ (ISHIDA No. 2359), allotype ♀ (ISHIDA, No. 2353), paratypes 4 ♀, 3 ♂ collected on the flowers of *Saussurea Riederi* HERD., on August 13th, 1936, by Mr. Y. SUGIHARA at Tokotan, Urup.

The holotype in the Entomological Institute, Hokkaido Imperial University, Sapporo, Japan.

The type locality: Urup, Chishima (Kurile Islands), Japan.

This species is closely related to *Thrips tabaci* LIND., from which it is easily distinguished by the stout antennae, the lack of pigment in the eyes, the cheeks slightly arched, the colouration of the antennal segments and the exceedingly longer body-spines which are especially prominent at the posterior angles of the prothorax and on the abdominal segment 9.