OCCASIONAL PAPERS
OF
BERNICE P. BISHOP MUSEUM
HONOLULU, HAWAII

Volume XV August 15, 1939 Number 12

Thysanoptera Collected by the Mangarevan Expedition[1]

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INTRODUCTION

Thirteen species of thrips from southeastern Polynesia are included in this report. Seven of these have been known previously and six are new; one of them represents a new genus. All of the collections were made by Elwood C. Zimmerman during the course of the Mangarevan Expedition to southeastern Polynesia in 1934. The specimens were forwarded to me soon after they were collected, but pressure of other work has delayed a careful study until the present time. I appreciate the opportunity of examining this material and wish to express my appreciation to Bernice P. Bishop Museum. Holotypes and allotypes of the new species described here are stored in Bishop Museum, and paratypes and other identified specimens are in my collection.

TEREBRANTIA

Family THRIPIDAE Uzel

Subfamily HELIOTHRIPINAE Karny

Heliothrips haemorrhoidalis Bouché.

Seven specimens of this cosmopolitan species were collected on Rapa Island in July 1934 at three different places—on Mount Oro-

[1] Mangarevan Expedition Publication 31.

rangi, Mount Tepiahu, and Mount Tanga between elevations of 400 and 800 feet. (Moulton 5438, 5442, 5457[2].)

Ayyaria chaetophora Karny.

Five specimens taken at Pare, Tahiti, March 23, 1934 (5447).

Subfamily THRIPINAE Karny

Isoneurothrips rapaensis, new species.

Female holotype: dark chestnut brown with thorax lighter but darkened at the sides; all femora colored like the body, but clear yellow at extreme bases, fore tibiae yellow, darkened at the sides, all tarsi clear yellow; antennae dark brown with only segment three lighter; wings brown, somewhat lighter in basal fifth; all spines blackish brown.

Total body length 1.58 mm.; head length 0.132 mm., width 0.15 mm.; prothorax length 0.132 mm., width 0.220 mm. Antennal segments length (width); I, 30 (30); II, 36 (26); III, 53 (23); IV, 53 (20); V, 40 (20); VI, 53 (16); VII, 16; total 286 microns. Spines on posterior angles of prothorax 93, inner on ninth abdominal segment 100, outer 116, on tenth 103 microns.

Head a little wider than long, angular in front, noticeably constricted behind eyes, cheeks arched; posterior third of head with several transverse striations. Eyes large, occupying approximately half the head's length; ocelli well developed; a series of several short, moderately stout spines around posterior margin of each eye, the innermost of the series placed immediately behind each posterior ocellus; another spine in front of each posterior ocellus. Mouth-cone narrowed near middle and semipointed. Prothorax with two strong spines on each posterior angle and a series of three on either side along posterior margin, the innermost of these approximately half as long as angular spines; there are several setae along anterior margin and at sides but the center area of pronotum is clear. Median spines on metanotum placed half their length back from anterior margin; metanotum transversely striate. Wings strong, fore wings with 4-20 spines on fore vein and 15 or 16 on hind vein.

Abdominal segments three to eight each with a strong, darkened line near anterior margin; comb on eighth segment complete but weak and irregular; tenth segment with suture for three-fourths its length.

This species may be separated from *I. orientalis* Bagnall by its transversely striate metanotal plate, this is reticulate in *I. orientalis*. In *I. antennatus* Moulton and *I. fullawayi* Moulton the mesanotal spines are approximate to the anterior margin.

Type material: female holotype and two female paratypes taken on Mount Tanga, Rapa Island, July 4 and 23, 1934 (5454, 5457).

Type locality: Mount Tanga, Rapa Island.

Thrips albipes Bagnall.

Numerous specimens were taken between March and September

[2] Numbers in parentheses are specimen numbers.

1934 at many places, as follows: Henderson Island (5434); Mangareva Island (5435); Tahiti (5437); Hao Island, Tuamotu Archipelago (5459); and Rapa Island (5460).

TUBULIFERA

Family PHLAEOTHRIPIDAE Uzel

Subfamily PHLAEOTHRIPINAE Karny

Tribe HOPLOTHRIPINI Priesner

Genus **MATHETETHRIPS**[3] new genus

Head large, flattened in front, cheeks almost straight, gradually becoming wider to its broad union with the prothorax. Eyes small, flattened, mostly on anterior margin dorsally but extended backward into an elongate oval form ventrally; ocelli small, placed far forward, widely separated and approximate to inner angles of eyes. Postoculars long, pointed and placed close behind eyes. Antenna only slightly longer than head. Mouthcone broad and rounded, with labium narrowed to a bluntly pointed tip. Prothorax transverse, its anterior margin drawn back in the middle into a widely open triangle, normal spines present. All legs comparatively small with fore femora slightly thickened. Wings with parallel sides, short, reaching to about the sixth abdominal segment when at rest, double fringe hairs present. Abdomen bulky, tube about 0.4 length of head, width at base about three-fourths its length, roundly narrowed to the tip.

This genus is placed tentatively in the Hoplothripini and possibly near *Eucoenothrips* Bagnall because of the shape of the tube; otherwise it has little similarity.

Genotype: *Mathetethrips megacephalus,* new species.

Mathetethrips megacephalus, new species.

Female (?) holotype: blackish brown with median portion of head and thorax somewhat lighter; antennae and legs colored like body except median and distal portion of second and pedicle of third segment and all tarsi, which are brownish yellow; wings washed with brown, fore pair darkened at base and in distal third, lighter elsewhere but with a median darkened cloudy line which blends into darkened distal area; hind wings colored likewise but with two clouded lines which extend to tip of wing.

Total body length 2.06 mm.; head length 0.41 mm., width behind eyes 0.22 mm., near posterior margin 0.338 mm. Length of prothorax from middle or lower part of depressed fore margin to middle of posterior margin 0.102 mm.,

[3] *Mathetes* (learner) refers to the large head.

width excluding coxae 0.396 mm. Width of pterothorax 0.47 mm., of abdomen 0.529 mm. Tube length 0.16 mm., width at base 0.117 mm., at tip 0.044 mm. Antennal segments length (width): I, 30 (33); II, 66 (33); III, 83 (36); IV, 76 (38); V, 66 (33), VI, 66 (30); VII, 46 (26); VIII, 30; total 470 microns. Length of spines, postoculars 117, outer on posterior angles of prothorax 132, inner 60, on seventh to ninth abdominal segments about 160, at tip of tube 88 microns.

In addition to characters specified in the generic description, the following may be noted: the antenna is about 1.14 longer than head; segment three has two sense cones; segments seven and eight are close and compactly united but clearly separated; fore tarsus is armed with a very small tooth which is placed near the end of the joint much as in *Karnyothrips*. There are 4 double fringe hairs on each fore wing. Abdominal spines are longest on segments 6 to 9.

Type material: female holotype taken at an elevation of 700 feet on Mount Tanga, July 23, 1934 (5457).

Type locality: Mount Tanga, Rapa Island.

Hoplothrips flavitibia Moulton.

Numerous specimens of this species known in the Hawaiian islands were taken at Papeari, Tahiti, March 20, 1934 (5436) and at Murivahi, Tubuai Island, Austral Islands, Aug. 16, 1934 (5451).

Tribe HAPLOTHRIPINI Priesner

Leptothrips zimmermani, new species.

Female holotype: color uniformly blackish brown including legs and antennae except segment three which is yellowish, and four and five which are light brown to brown; wings are clear.

Total body length 1.82 mm.; head length 0.26 mm., width 0.147 mm.; prothorax length 0.13 mm., width 0.22 mm.; tube length 0.12 mm., width at base 0.056 mm. Antennal segments, length (width): II, 46 (28); III, 60 (26); IV, 60 (30); V, 53; VI, 43; VII, 40; VIII, 30; total 350 microns.

This species is typical of the genus with its long head, swollen vertex, oval eyes, weak spines, short tube, and wings narrowed in the middle. The fore wings are without double fringe hairs.

The species may be separated from *L. mali* Fitch by the lack of double fringe hairs on the fore wings and from *L. heliomanes* Hood, a species without such double fringe hairs, by its much shorter and subequal third and fourth antennal segments.

Type material: female holotype taken on stump of *Weinmannia,* Sept. 15, 1934, by E. C. Zimmerman after whom it is named (5440).

Type locality: Mount Aorai Trail, Tahiti, elev. 5,000 ft.

Haplothrips gowdeyi Franklin.

Several specimens of this cosmopolitan species were taken as follows: Moorea, Society Islands, Sept. 24, 1934 (5439); Taravai Island, Mangareva, April 1, 1934; and Rapa Island, July 21, 1934 (5452).

Haplothrips aculeatus Fabricius.

Several specimens collected on Rapa Island, July 21, 1934 (5452, 5457).

Podothrips fuscus, new species.

Female holotype: dark blackish brown including antennae except the third segments which are yellowish, and the legs except all tarsi which are brownish yellow. Prominent body spines light brown to almost clear.

Total body length 2.24 mm.; head length 0.22 mm.; width at middle 0.14 mm.; prothorax length 0.205 mm., width excluding coxae 0.28 mm.; pterothorax width 0.308 mm.; tube length 0.132 mm., width at base 0.088 mm. Antennal segments length (width): I, 23 (30); II, 43 (26); III, 50 (25); IV, 50 (26); V, 46 (26); VI, 43 (23); VII and VIII, 63; total 330 microns. Postocular spines 76, outer on posterior angles of prothorax 133, and at tip of tube 133 microns.

Head 1.5 times longer than wide with cheeks only slightly swollen; eyes comparatively small, ocelli wanting; postocular spines considerably longer than eyes, pointed. Antennae 1.5 longer than head; seven and eight broadly united but clearly separated; segment three with two sense cones. Mouthcone reaching half way across prosternum. Prothorax only slightly shorter than head, comparatively large, without median dorsal thickening; only outer spines on posterior angles long, prominent and pointed, others vestigial. Fore femora greatly enlarged, unarmed; fore tibiae rather short and thick, each with a distinct tooth on inside at end; fore tarsus armed with a strong, slightly curved tooth. Pterothorax of about equal width with prothorax; posterior femora somewhat swollen, intermediate legs weakest; wings wanting. Tube 0.6 as long as head, terminal spines about as long as tube.

This wingless form would seem to be most closely related to *P. duplicatus* Bagnall which however is much smaller, has fully developed wings and pale yellow fore tibiae. *P. fuscus* is distinctive by its uniform dark color.

Type material: female holotype and two female paratypes taken on Mangaoa Peak, between 1,200-1,500 ft. alt., July 4, 7, 1934.

Type locality: Rapa Island.

Subfamily MEGATHRIPINAE Priesner

Tribe COMPSOTHRIPINI Priesner

Bolothrips biformis, new species.

Female holotype (oedymer, brachypterous): color blackish brown including all legs except fore tibiae which are brown but darkened at the sides, and all tarsi which are yellowish brown, the fore pair being lighter than the others. Antennal segments one and two are brown, lighter than the head, with two yellowish in outer median and distal portions; three yellow in basal third, brown in most of distal two thirds but clearer at tip; four yellowish brown in basal third and at tip, otherwise brown; five yellowish brown in pedicle to light brown in basal quarter and blackish brown beyond; six to eight blackish brown. Prominent spines brown to blackish brown.

Total body length 2.55 mm.; head length 0.294 mm., width 0.264 mm.; prothorax length 0.16 mm., width including coxae 0.41 mm.; pterothorax width 0.455 mm., abdomen width 0.588 mm.; tube length 0.235 mm., width at base 0.102 mm. Antennal segments length (width): II, 66 (36); III, 93 (33); IV, 90 (36); V, 83 (25); VI, 66 (33); VII, 46; VIII, 36 microns. Postocular spines 133, pair at posterior angles of prothorax subequal, 56, on seventh abdominal segment 206, on ninth 216, at tip of tube 132 microns. The midlateral spines on prothorax are vestigial or wanting.

The head is somewhat longer than wide with cheeks moderately arched; eyes relatively small and extended backward on ventral side for a distance about equal to their dorsal width; ocelli vestigial; postocular spines placed close behind eyes; mouthcone reaching two thirds across prosternum, labium pointed. Prothorax with an incomplete median dorsal thickening; pair of spines on posterior angles of about equal length, short, but midlaterals and those on anterior angles even smaller. Fore legs normal, fore tarsus unarmed. Wings wanting. Spines on posterior angles of abdominal segments become increasingly longer beyond segment four and reach their greatest length on seven and nine. Tube about 0.8 as long as head.

Male allotype (oedymer, brachypterous): colored as in the female.

Total body length 2.1 mm.; antennal segments length (width): III, 110, (36); IV, 103 (38); V, 86 (36); postocular spines 153, midlateral on prothorax 133, on seventh abdominal segment 220, inner on ninth abdominal segment 176, outer 102 microns.

Postocular spines especially long and setae behind vestigial ocelli fairly well developed. Pronotum with a strong, complete median dorsal thickening, fore legs greatly enlarged, especially the femora, fore tarsus with a strong, broad-seated tooth; midlaterals developed as longest spines on pronotum. Abdominal spines very long and prominent. Tube about 0.8 as long as head.

Female paratype (gynacoid, brachypterous): total body length 1.92 mm.; antennal segments III, 86 (34); IV, 83 (36); V, 83 (33). Postocular spines 66, outer on posterior angles of prothorax 58, on seventh abdominal segment 147, on ninth, inner 192, outer 88 microns.

Male paratype (gynacoid, brachypterous): total body length 2.0 mm.; antennal segments III, 93 (33); IV, 80 (34); V, 73 (33). Postocular spines 83, outer on posterior angles of prothorax 76, inner 36, inner on ninth abdominal segment 86, outer 70 microns.

The distinguishing characters of the two female forms are the long postocular spines in the oedymer as compared with much shorter ones in the gynacoid form. Females are without a tarsal tooth. In males, which have an armed fore tarsus, the fore legs, especially the femora are much stronger in the oedymer than in the gynacoid form, in the one the tarsal tooth is strong and broad-seated, occupying the entire inner side of the segment while in the gynacoid the tooth is much smaller. In oedymer males the postoculars and midlateral spines of the prothorax are much longer, as are also the abdominal spines. Also in oedymer males the postocellar spine is fairly well developed. The median dorsal thickening of the pronotum is incomplete and sometimes hardly distinguishable in gynacoid forms.

The species is quite similar to *B. icarius pallipes* Uzel but may be separated immediately by the uniformly dark color of the legs.

Type material: all brachypterous, female holotype (oedymer), male allotype (oedymer), twelve oedymer and five gynacoid females and four oedymer and one gynacoid male paratypes taken on Rapa and Tahiti during the months of July and September 1934 from dead limbs or stumps (5440, 5443, 5444, 5445, 5449, 5452, 5453).

Type locality: Mount Aorai, Tahiti.

Dichaetothrips niger (Moulton and Steinweden), new combination.

Two specimens taken on South Marutea, Tuamotu Archipelago, May 22, 1934 (5450), and one specimen at Rikitea, Mangareva Island, April 9, 1934 (5456).

This species was described as *Cryptothrips niger,* but the new material shows that the postocellar spines are strong and that the species should more properly be placed in the genus *Dichaetothrips.*

Bolothrips semiflavus[4], new species.

Female holotype: general color of thorax and body dark chestnut brown, head and abdominal segments six to nine blackish brown, tube likewise except at extreme tip where it is lighter; femora dark brown, fore pair yellowish at distal ends, middle and hind femora yellowish at distal ends and more especially on the inner sides at ends; fore tibiae and tarsi yellowish brown, other tarsi brown; antennal segments one to four and base of five mostly yellow, three and four fuscous in outer third and half respectively but yellow again at the ends; six to eight blackish brown except basal third of six which is yellow and tip of six which is lighter brown; all wings washed with brown, fore pair with a

[4]*Semiflavus* refers to the color of the antennae.

median brownish line which fades before distal third, hind wings with two brownish streaks, one median and another near anterior margin, which extend to near tip.

Total body length, abdomen distended, 2.4 mm.; head length 0.26 mm., width behind eyes 0.235 mm., at base 0.205 mm.; prothorax length 0.132 mm., width including coxae 0.35 mm.; pterothorax width 0.42 mm.; length of tube 0.176 mm., width at base 0.08 mm. Antennal segments length (width): II, 60 (36); III, 86 (30); IV, 76, (33); V, 66 (33); VI, 56 (33); VII, 43; VIII, 33; total 440 microns. Postocular spines 93, postocellar 60; outer on posterior angles of prothorax 133, inner 73; on seventh abdominal segment 205, on ninth 147 at tip of tube 176 microns.

Head a little longer than wide, broadly rounded in front, cheeks roundly narrowed to base; eyes slightly protruding on inner anterior margins, extended backward on ventral side; ocelli present, posterior ocelli approximate to anterior inner margins of eyes; postocular spines placed close behind eyes, long, slender and pointed; postocellar spines present but not conspicuous. Antennal segments five to seven pediculate, eight broadly joined but distinct from seven. Anterior margin of prothorax noticeably concave; all spines present, those at posterior angles longest. Fore legs normally enlarged, fore tarsi unarmed. Wings fully developed, fore pair with eight double fringe hairs. Spines on abdomen becoming increasingly longer toward tip.

This species is rather close to *B. artocarpi* Moulton but easily separated by the lighter colored proximal segments of the antennae, the extension of eyes on ventral side and the absence of a median longitudinal thickening of the pronotum.

Type material: female holotype taken on Mount Tevaitahu at about 700 feet alt., July 8, 1934 (5458).

Type locality: Rapa Island.