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Notes on the Thysanoptera from Southeast Asia

VII. Three Urothripine Species (Phlaeothripidae) from the Philippines

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Synopsis Two new species, belonging to the genera *Bradythrips* HOOD et WILLIAMS and *Stephanothrips* TRYBOM, are newly described and illustrated from the Philippines; a species, *Stephanothrips occidentalis* HOOD et WILLIAMS, is newly recorded from Mindanao Is., the Philippines.

Up to the present time eight urothripine species are known from East Asia; of these, only one species, *Stephanothrips occidentalis* HOOD et WILLIAMS, is recorded from Luzon Is., the Philippines (KUDÔ, 1978). In the summer of 1979, the author had an opportunity to make a survey of the order Thysanoptera in the Philippines (Luzon Is. and Mindanao Is.). During the survey a great number of the Thysanoptera including three urothripine species were obtained by the author himself. In this paper two new species of the tribe Urothripini will be described from the Philippines, and a species, *S. occidentalis*, will be recorded from Mindanao Is., Philippines. The type-series of the new species are preserved in the author's collections.

Bradythrips philippinensis sp. nov.

(Figs. 1–3)

Female (*macroptera*). Colour brown to dark brown, with some red hypodermal pigment; head darkest; all femora brown to dark brown, concolorous with body, with pale extreme apices, all tibiae brown with pale bases and apices, all tarsi shaded with brown; antennal segment III yellowish, the rest of segments brown, sometimes segment II with light apex; wings shaded with pale gray, each with a median brown longitudinal stripe; tube yellowish brown with darker base and apex; prominent body setae yellow to brownish yellow, wing retaining setae darker.

Head elongate, about 1.3 times as long as wide or longer, swollen dorsally, gradually widened towards base, widest across base, tuberculate laterally and dorsally, but devoid of any tubercles between eyes; cheeks with four pairs of stout setae on well developed tubercles; vertex produced in front of eyes, overhanging and concealing antennal segment I, with one pair of prominent setae which are knobbed or expanded apically. Eyes shorter than one-third the length of head, posterior ommatidia well developed, ommatidia separated from each other; ocelli

well developed, anterior one directed forwards. Antennal segment VII (morphological segments VII and VIII) the longest, segments IV, V and VI subequal in length; sense cones long and slender, segment III with one (0+1), segments IV and V each with two (1+1), segment VI with one (1+0). Maxillary stylets retracted into head capsule, reaching eyes.

Pronotum weakly tuberculate anteriorly and posteriorly; anterior margin with three pairs of blunt setae, posterior margin with four pairs of blunt setae between epimeral setae. Metanotum tuberculate with 11 to 14 pairs of blunt setae. Probasisternum fused together medially; praepectus weakly developed, membranous.

Abdominal tergites II to VII each with a pair of fin-shaped wing-retaining setae. Tube about 1.6 times as long as head, with only one pair of long anal setae which is longer than three times the length of tube, other anal setae reduced.

Measurements of the holotype female in μm. Total distended body length 1,800. Head length 200, width across base 146; eye length 56, width 45. Pronotum median length 125, width 222; fore wing length 730. Abdominal tergites median length (width) as follows: II 85 (295); IV 80 (275); VI 80 (220); VIII 80 (160); IX 195 (110 across anterior margin, 55 across posterior margin). Tube length 325, basal width 30, apical width 29. Antennal segments I to VII length (width) as follows: 26 (28); 32 (30); 42 (23); 35 (22); 35 (20); 35 (18); 47 (13).

Length of setae: A pair on vertex 65–70, middorsals (?postocular) 23–25; prothoracic epimerals 35; anals 1,000–1,100.

Male (aptera). Similar in colour to female, but the antennal segment II is lighter; middorsal head setae (?postocular) well developed; eyes each with only 6 large ommatidia, ocelli absent; pronotum with well developed anteromarginal and posteroangular (?posteromarginal) setae.

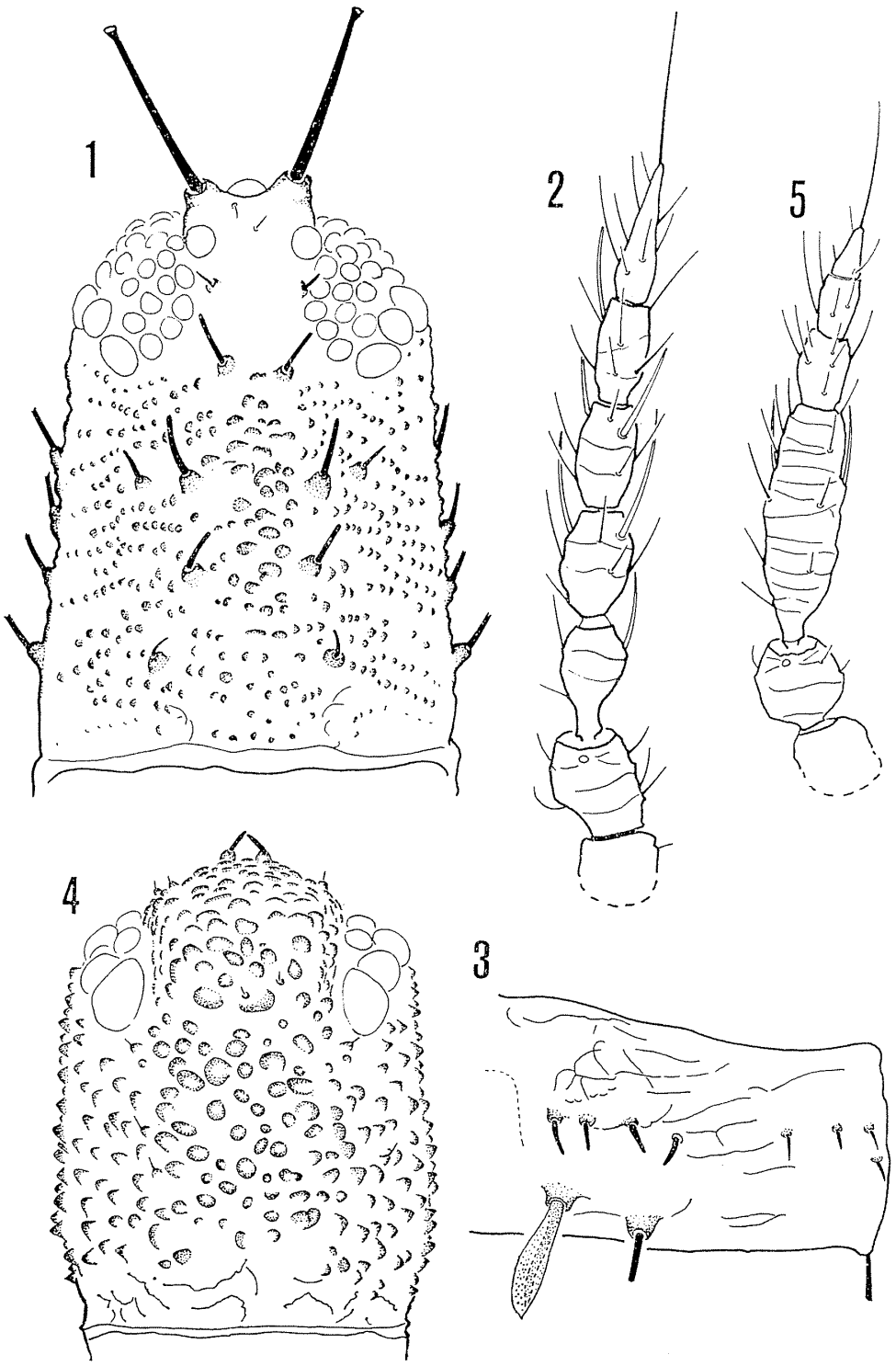
Measurements of the paratype male in μm. Total body length (not distended) 1,100. Head length 150, width across base 125; pronotum median length 104, width 170; tube length 200.

Length of setae: A pair on vertex about 50, middorsals (?postocular) about 30; prothoracic anteromarginals 17–18, posteroangulars (?posteromarginals) about 20, epimerals about 20; anals?

Holotype ♀. Philippines: Luzon Is., Bicol National Park, on dead leaves, 12-VIII-1979, leg. S. OKAJIMA.

Paratypes (7 ♀♀ 1 ♂ in total). Philippines: Luzon Is., same locality as the holotype, 3 ♀♀ 1 ♂ on dead leaves, 11 to 13-VIII-1979, leg. S. OKAJIMA; Mindanao Is., Mt. Apo, Agko, alt. about 1,300 m, 4 ♀♀ on dead Palmaceae leaves, 4-VIII-1979, leg. S. OKAJIMA.

Remarks. This new species is easily distinguished from the only other member of the genus, *hesperus* HOOD et WILLIAMS, by the coloration which is uniformly brown. Moreover, *philippinensis* has only one pair of long anal setae, although *hesperus* has two pairs of them.



Figs. 1–3. *Bradythrips philippinensis* sp. nov., female, dorsal view. —— 1, Head; 2, right antenna; 3, right half of abdominal tergite III.

Figs. 4–5. *Stephanothrips leucocephalus* sp. nov., female, dorsal view. —— 4, Head; 5, right antenna.

In the author's collection, there is a single macropterous female from Quezon National Forest Park, Luzon Is., which is very similar to *philippinensis*, but the second antennal segment is lighter, metanotum is more heavily tuberculated, and the ventral pair of anal setae are not reduced (370 μm). At present, however, it is impossible to decide if this is an intraspecific variation, aberration or another new species.

Stephanothrips leucocephalus sp. nov.

(Figs. 4–5)

Female (*aptera*). Biocolorous dark brown and yellowish white, scattered with some red hypodermal pigments. Head, prothorax and fore legs yellowish white, dorso-anterior portion of head shaded with brown; pterothorax and mid legs dark brown, hind legs a little paler than mid legs, hind tibiae with paler base; abdomen yellowish white with brown sides; tube yellow with dark extreme apex; morphological antennal segments I to V yellow, segment VI shaded with brown, VII and VIII brown; anal setae yellowish.

Head distinctly longer than wide, clearly narrowed basally; widest across near base; dorsal and lateral surface tuberculate; vertex produced and rounded in front of eyes, overhanging, insertion of antennal segment I, with a pair of blunt setae on tubercles. Eyes small, each with 5 to 6 ommatidia on dorsum. Ocelli absent. Antennae much longer than head, six-segmented (morphological segments III to V completely fused), morphological segments VII and VIII separated but broadly jointed; sense cones long and slender, morphological antennal segments IV and V each with two sense cones (1+1). Maxillary stylets retracted far into head capsule, reaching eyes, subparallel and widely apart from each other.

Prothorax about 1.5 times as wide as long, nearly rectangular; stout sculpture and tubercle absent on pronotum; epimeral setae reduced; praepectus weakly developed, membranous; meso- and metanotum and abdominal tergite I strongly tuberculate; legs short and stout, fore tarsal hamus absent.

Abdominal segment typical of the genus; tube about 1.4 times as long as head, about 9.3 times as long as width of apex, slightly widened at apex; anal setae about three times as long as tube.

Measurements of the holotype female in μm. Total distended body length 1,350. Head length 178, width 130; pronotum median length 105, width 155. Abdominal tergites median length (width) as follows: II 58 (280); IV 64 (220); VI 64 (176); VIII 55 (127); IX 145 (88 across anterior margin, 38 across posterior margin). Tube length 240, basal width 20, apical width 26. Antennal segments I to VI length (width) as follows: 25 (25); 34 (28); 90 (26); 26 (20); 25 (14); 20 (10).

Length of setae: A pair on vertex about 10; anals 475–480 (middorsal pair), 705–720 (lateral pairs).

Male (*aptera*). Colour and general structure almost as in female; a pair of setae on vertex very short.

Measurements of the paratype male in μm. Total distended body length 1,140. Head length 140, width 108; pronotum median length about 100, width 240. Abdominal tergites median length (width) as follows: II 35 (170); IV 40 (158); VI 44 (130); VIII 52 (95); IX 110 (75 across middle). Tube length 198, basal width 19, apical width 25. Antennal segments I to VI length (width) as follows: 22 (25); 28 (28); 80 (25); 25 (18); 24 (15); 14 (10).

Length of setae: A pair on vertex less than 5; anals 375–400 (middorsal pair), 520–585 (lateral pairs).

Holotype ♀. Philippines: Mindanao Is., Mt. Apo, Agko, alt. about 1,300 m, on dead leaves, 2-VIII-1979, leg. S. OKAJIMA.

Paratypes (14 ♀♀ 1 ♂ in total). Philippines: Same locality as the holotype, 10 ♀♀ 1 ♂ on dead branches and leaves, 30-VII to 3-VIII-1979, leg. S. OKAJIMA; Mindanao Is., North Cotabato, Ilomavis, 4 ♀♀ on dead fern, 27-VII-1979, leg. S. OKAJIMA.

Remarks. This new species is easily distinguished from all the other known species of the genus by the following features: Body bicolorous, head and prothorax yellowish white, pterothorax and abdominal tergite I dark brown; vertex with only one pair of stout setae; morphological antennal segments VII and VIII separated. It may be related to *S. japonicus* SAIKAWA from Japan and Taiwan and *S. kentingensis* OKAJIMA from Taiwan. These three species have not developed prothoracic epimeral setae, and have one or two pairs of stout setae on the rounded vertex.

Stephanothrips occidentalis HOOD et WILLIAMS

Stephanothrips occidentalis HOOD et WILLIAMS, 1925: 69.

This species is known from various areas of the tropical and subtropical parts of the world. Recently, KUDÔ (1978) recorded this species for the first time from the Philippines (Luzon Is.), and the specimens listed below are newly recorded from Mindanao Is.

Material examined. Philippines (Mindanao Is.): North Cotabato, Ilomavis, 4 ♀♀ on dead fern, dead leaves and grass, 26 to 27-VII-1979, leg. S. OKAJIMA; Mt. Apo, Agko, alt. about 1,300 m, 2 ♀♀ on dead branches, 30-VII-1979, leg. S. OKAJIMA.

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