

# A New *Rhamphothrips* from Hawaii, Jamaica and Florida, and Notes on *R. pomeroyi* (Thysanoptera: Thripidae)

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## ABSTRACT

*Rhamphothrips pandens* Sakimura, new species, was first collected in 1966 on Oahu and Kauai of the Hawaiian Islands. The same species was also found in Jamaica and Florida. *R. pomeroyi* (Moulton) was restudied.

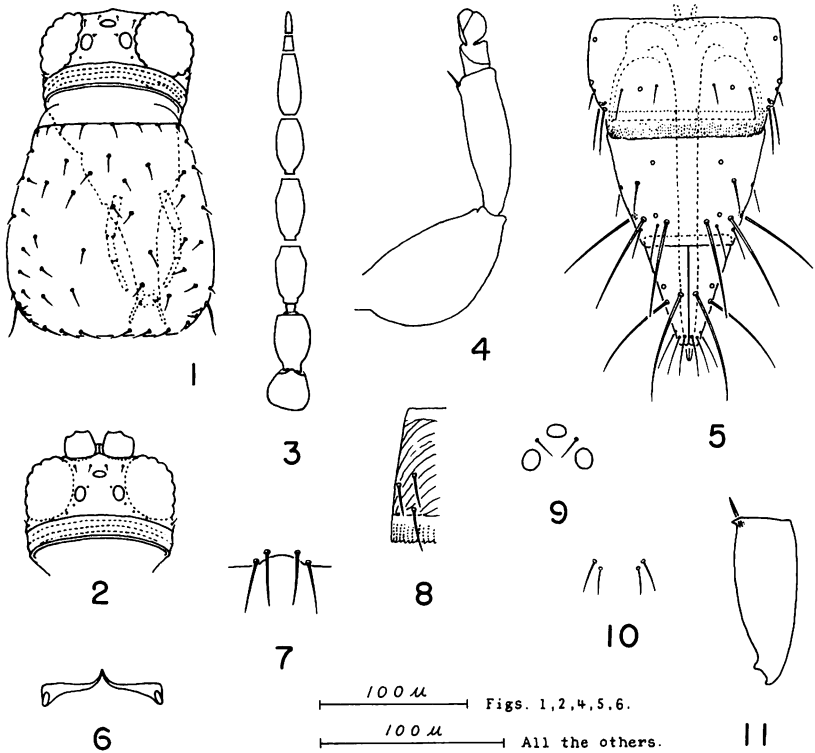
This new species, positively adventive to the Hawaiian fauna, was first collected in 1966 at several different localities on the island of Oahu, and also on Kauai. Many years later, the same species was unexpectedly rediscovered among earlier collections made in Jamaica in 1964. As late as 1979, the same species collected from Florida in 1974 was again found among the USMN holdings. According to the latest revision of the genus (Bhatti 1978), 6 species are from Indonesia and India, and the other 4 are one each from Sudan, Ghana, Zaire, and Rhodesia. Since no congener has ever been known from the New World, it is a bit speculative, but this new species seems likely to be a native in the Caribbean area or further south. Two species known from West Africa are however not closely related to the new species. The most closely related species is from India, but the Oriental origin theory seems inconceivable. There are, however, two recent precedents of such transportation of *Frankliniella invector* Sakimura from the Caribbean area to Hawaii (Sakimura 1972) and *Thrips hawaiiensis* (Morgan) from Hawaii or other Pacific islands to the Caribbean area including some southeastern States (unpublished data from Jamaica, personal communication from S. Nakahara, Anonymous 1973:289, 727, and Beshear 1979:211). The species name was derived from its wide current distribution. An old species, *R. pomeroyi* (Moulton) from Ghana was restudied for clarifying the relationships with this new species.

### ***Rhamphothrips pandens* Sakimura, new species (Fig. 1-8)**

**Diagnosis:** Anaphothripina. Totally pale body with wings unbanded and antennal VI dark but basally yellow; small head strongly transverse and larger prothorax elongate, cauda in closely united slender cone form; head and prothorax without any major seta except recurved posteroangular pronotal seta, mouth cone very long and strongly narrowed distally, fore femur thickened but no tooth along its fore margin, fore tibia in female with only a single stiff seta at apex within, wing very slender, abdominal segments with broad posteromarginal flange finely dentate along posterior margin and longitudinally creased, sternum VII with setae i-ii closely approximate and both fully developed.

**Female Including Holotype:** Body pale yellow with distal part of both mouth cone and abdominal X weakly brown-washed; antenna I pale, II - V pale yellow, distal ½ of IV and ⅓ of V brown-washed, VI - VIII grayish brown, basal ¼ - ⅓ of VI always yellow; wing totally pale yellow; ocellar crescent bright red, major setae brown to grayish brown, sometimes yellowish brown on teneral specimens. Integument sculp-

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**FIGURES 1-8.** *Rhamphothrips pandens* (♀): 1. Head and prothorax (head tilted forward and rolled), holotype; 2. Head (in normal position), specimen from Jamaica; 3. Antenna, left (outline only), paratype; 4. Fore leg (minor setae omitted), paratype; 5. Abdominal VIII-X (Sculpture omitted), paratype; 6. Fema, specimen from Jamaica; 7. Sternum VII, setae i-ii, specimen from Jamaica; 8. Tergum III, left lateral area, specimen from Florida. Fig. 9-11, *Rhamphothrips pomeroyi*, holotype ♀: 9. Ocellar triangle; 10. Sternum VII, setae i-ii (posteromargin of sternite indiscernible); 11. Fore tibia (minor setae omitted).

ture: conspicuous except on pronotum, occiput as in Figs. 1 and 2, mesonotum with few widely spaced transverse striae at anterior portion, metascutum with narrowly spaced longitudinal striae, somewhat modified at mesial area, terga and sterna with transverse striae at both sides but weak at mesial areas.

Body 1170-1330 (1330) (all measurements in micrometers; denotes length only unless otherwise stated; w. = width) (range of a representative specimen each of 3 different regional series; measurements following the range denotes holotype); head (Fig. 1, 2) about 64 (due to excessive tilting forward in mount, true length usually indeterminable), w. 100-102 (102), very small and strongly transverse (about 1.6 times as wide as long); eye large occupying  $\frac{2}{3}$  of head length and  $\frac{1}{3}$  of head width; all cephalic setae undeveloped, 2 pairs of antecellar minute, interocellar trace or socket only, located on common tangent of both posterior ocelli, postocular series with 3 sockets and a minute seta outermost near cheek; mouth cone 168-199 (199) (distance between interantennal carina and base of labial palpus), very long and strongly narrowed particularly at distal  $\frac{1}{3}$ , beaklike, with very long maxillary palpus. Antenna (Fig. 3) 204-210 (207), about 2.0 of head width, with forked sense cone on

III-IV, III 2.0-2.1 times as long as wide, stylus slender; length (width) of segments of holotype: 19 (22), 33 (20), 33 (16), 33 (16), 29 (15.5), 36 (14), 8 (5), 9 (3.5). Pronotum (Fig. 1) 133-143 (143), w. 133-140 (140), large and elongate, about as long as wide, 1.3-1.4 times as long and as wide as head width; chaetotaxy as illustrated, recurved posteroangular 16-20, all the others smaller; ferna (Fig. 6) undivided; fore leg (Fig. 4) fully developed, coxa prominent, femur thickened but no tooth along fore margin, tibia with a small stiff seta (10-15) on small mound at apex within. Pterothorax 135-143 (143), w. 156-168 (166) at shoulder; mesonotum with seta i moves away from hind margin, metascutum with seta i moves away from fore margin and a pair of pores nearer to hind margin; both mesobasi- and metasterna without spinula, mesobasisternum with 5-6 large setae aligned along border with mid coxa; fore wing 490-520 (520), w. 26-28 (28) at middle, slender; alar setae rather small basad but little larger distad, 24-26 setae on costa, (4 + 3) or (3 + 3) + (1 + 1 + 1) setae on fore vein, 4 setae on hind vein, 5 veinal and 1 disc setae on scale, but this disc seta sometimes missing, particularly among the Hawaiian series; mid and hind legs normal except hind femur slightly thickened, hind tibia 109-117 (117). Abdomen 730-810 (800), w. 212-230 (214) on IV; posteromarginal flanges of terga II-VIII, sterna II-VII, and pleura III-VII broad (about  $\frac{1}{4}$  as long as terga or sterna, 13-15  $\mu\text{m}$  long), finely dentate along posterior margin and longitudinally creased (not cleft) at distal  $\frac{1}{2}$ - $\frac{2}{3}$  length, dentate margin and creasing more pronounced at lateral parts of abdomen (Fig. 8), apparently dentation weakens but creasing persists along mesial part of abdomen, flange apparently not interrupted at the insertions of tergal seta iv and sternal setae i-ii; flanges resemble as illustrated for *Amalothrips flaccidus* Ananthakrishnan (Bhatti 1975:fig. 17-19); sternum VII (Fig. 7) with setae i-ii closely approximate, both fully developed (28), flange at this dent indiscernible; abdominal VIII-X (Fig. 5) form a closely united slender cone, X 69-77 (77), completely slit on dorsum, pointed at apex when ovipositor in normal position, ovipositor very large (235-250); caudal seta IXi-iii and Xi-ii all about as long as segment X, dorsal seta on IX shorter than  $\frac{1}{2}$  length.

Male unknown.

Type: Holotype ♀ (BPBM Type No. 12713): Hawaii (Oahu), Waialua-mauka, *Indigofera suffruticosa*, fl., 28.XI.1966, K. Sakimura (Saki 4730b). Paratypes (Sakimura, USNM, SMF, BM, CAS, Bhatti): 5 ♀♀, Waimanalo, *Cassia occidentalis*, fl., 27.X.1966 (Saki 4668c); 2 ♀♀, Kahana, *Cassia occidentalis*, fl., 27.X.1966 (Saki 4674b); 1 ♀, Palolo, *Jasminum multiflorum*, fl., 14.XI.1966 (Saki 4688a); 1 ♀, Nanakuli, rose, fl., 15.XI.1966 (Saki 4694a); 1 ♀, Waipio, *Crotalaria mucronata*, fl., 23.XI.1966 (Saki 4707a); 1 ♀, Honolulu (St. Louis Heights), *Morus nigra*, fl., VI.1968 (Saki 4801j); 1 ♀, Honolulu (St. Louis Heights), *Mangifera indica*, fl., 11.II.1970 (Saki 4820f); all the above paratypes were collected by Sakimura.

Other Specimens Examined: 1 ♀, Hawaii (Kauai), Kapaa, *Nerium oleander*, fl., 13.I.1966 (Saki 4603b); 2 ♀♀, Jamaica, Buff Bay, *Lantana camara*, fl., 11.XI.1964 (Saki 4374c); 1 ♀, Hope Garden, *Gouania lupuloides*, fl., 15.XI.1964 (Saki 4405b); 1 ♀, Hope Garden, *Cassia siamea*, fl., 6.XII.1964 (Saki 4520b); all collected by Sakimura (Sakimura). 7 ♀♀, Florida, Miami (Airport. GAC), sweeping, Lot #15 survey, 14.XI.1974, B.K. Dozier and F.D. Matthews (USNM).

Relationships: According to the keys to species by Bhatti (1977:569 and 1978:284), that are now as amended under the next heading, *pandens* together with *parviceps* (Hood) from India which is the closest allied and *levis* (Priesner) from Sudan are the only congeners with fore tibia without tooth in female at apex within. These three species are separated as in the amended Couplet (5) of the 1978 key as follows:

- (5) Interocellar setae developed, outside of ocellar triangle, close to margin of the eye on either side; mouth cone broad at middle, gradually narrowed distally . . . . . *levis*  
 Interocellar setae minute or trace only, on common tangent of both posterior ocelli; mouth cone narrowed at middle, strongly tapered distally . . . . . (5A)
- (5A) Antennal VI totally dark, sternum VII with seta i reduced but ii developed . . . . . *parviceps*  
 Antennal VI basally yellow, sternum VII with setae i-ii both fully developed . . . . . *pandens*

*Rhamphothrips pomeroi* (Moulton) (Fig. 9-11)

*Scirtothrips pomeroi* Moulton, 1930:199.

*Anaphothrips pomeroi*: Moulton 1936:266.

*Chilothrips pomeroi*: Bailey 1964:334.

*Perissothrips parviceps*: Pitkin and Mound 1973:419 (synonymized).

*Rhamphothrips pomeroi*: Bhatti 1978:293 (reinstated).

Bhatti (1978) reinstated this species into *Rhamphothrips*, but excluded it in his key to species, because the type material was probably not accessible for his study. In order to clarify the relationships with *pandens*, the holotype of *pomeroi*, which is a characteristic *Rhamphothrips*, was scrutinized. Moulton's original description that lacks mention of all the basic diagnostic characters is supplemented as follows: Female: Color as described; setae hyaline to pale yellow; integumental sculptures very much similar to other congeners on every sclerite, often not highly conspicuous. Body 1200 (contracted to 930); head small and transverse (66, w. 105); mouth cone very long (191), strongly narrowed, particularly at distal  $\frac{1}{3}$ , beaklike; cephalic setae all minute, interocellar (Fig. 9) fairly developed (13), interval 20, located on the outer common tangent of anterior and posterior ocelli. Antenna (220), 3.3 of head length; length (width) of segments: 20 (24), 33 (21), 31 (18), 32 (18), 32 (16.5), 40 (15), 8 (5.5), 11 (4); III-IV with forked sense cone slender and fairly long (21). Pronotum elongate (140, w. 138), 2.1 of head length; all marginal and disc setae inconspicuous, posteromarginal series slightly larger, posteroangular longest (26), recurved; pterothorax (140, w. 168); fore femur thickened, no tooth along inner margin, fore tibia (Fig. 11) with a single minute acute tooth (about 3  $\mu$ m tall) and a stiff seta (16) at apex within; hind tibia 112; fore wing narrow, 630, w. 23 at middle; abdomen 780, w. 212 on IV; terga, sterna, pleura with broad posteromarginal flanges, its posterior margin appears entire, detail in structure indiscernible; sternum VII (Fig. 10) with setae both undeveloped, very feeble, i (14) caudad to ii (17); VIII-X in slender and sharply pointed cone; ovipositor 214; segment X 72, caudal setae some slightly longer and others slightly shorter than X.

Specimen Examined: Holotype ♀: Ghana, Yegi, II.1927, A.W.J. Pomeroy (Moulton 2344) (CAS).

Discussion: Because of the armed fore tibia in female form, *R. pomeroi* is not related to *R. pandens*. The closest allied are *pardus* (Bhatti) and *jasminae* (Bhatti), both from India. Bhatti's key to species (1978) is amended as follows:

- (9) Pronotum 2.7-2.9 times as long as head, fore tibial tooth in female fairly stout . . . . . *pardus*  
 Pronotum 1.94-2.2 times as long as head, fore tibial tooth in female tiny . . . . . (9A)

- (9A) Sternum VII with setae i-ii both well developed, but i smaller than ii;  
interocellar setae on common tangent of both posterior  
ocelli ..... *jasminae*  
Sternum VII with setae i-ii both undeveloped, feeble, i caudad to ii;  
interocellar setae on the outer common tangent of anterior and  
posterior ocelli ..... *pomeroyi*

ACKNOWLEDGMENTS

Acknowledgments are gratefully made to S. Nakahara and Kellie O'Neill, Systematic Entomology Laboratory, USDA, Beltsville, MD; Richard zur Strassen, Senckenberg Museum (SMF), Frankfurt, Germany; W.J. Pulawski, California Academy of Sciences (CAS), San Francisco, CA; and Harold St. John, Bishop Museum, Honolulu, HI for cooperation in allowing loans of type materials, extending generous cordiality and assistance while I was visiting the collections, or providing advice in formulating the species name.

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