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THYSANOPTERA STUDIES 2

The new generic status and synonymy of Anaphothrips arizonensis Morgan, with the description of the male (Thysanoptera, Thripidae)

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THYSANOPTERA STUDIES 2

THE NEW GENERIC STATUS AND SYNONYMY OF ANAPHOTHrips ARIZONENSIS MORGAN, WITH THE DESCRIPTION OF THE MALE (THYSANOPTERA, THIRIPIDAE)

Tokuwo Kono* and Kellie O'Neill**

We have believed that the species described as Anaphothrips arizonensis Morgan is not congeneric with A. obscurus (Mueller), the type species of Anaphothrips Uzel, and similar species. The discovery of the male of arizonensis in material collected by Dr. Donald M. Tuttle confirms this opinion, and we take this opportunity to provide a generic name for arizonensis and describe its male.

BAILEYOTHrips, new genus

Like Anaphothrips, but differing as follows: Head decidedly transverse, not produced before eyes, with dorsal area less than half that of pronotum. Antennae 8-segmented and with forked sensory trichomes on segments III and IV. Pronotum with surface coarsely wrinkled. Wings fully developed in both sexes; fringe cilia straight, spirally ornamented. Abdominal terga II-VIII with posterior marginal flanges; flange on each of II-VII more or less serrate laterally, on VIII entirely serrate or fimbriate; mesal pair of setae on II-V approximate, on VI-VIII conspicuous, larger than submesal pair. Abdominal sterna III-VII without flanges, with accessory setae not distinguishable from primaries. Male with only normal slender setae on terminal segments; sternal gland opening on acrosternite.

Type species: BAILEYOTHrips ARIZONENSIS (MORGAN),
n. comb.

A very distinct genus, suggesting Anaphothrips Uzel in general appearance, though approaching Heterothrips Wood in several important characteristics, including the shape of the wing (Fig. 10) and its fringe cilia, and the sculpture, number and disposition of setae, and posterior marginal flanges of the abdomen (Figs. 11 and 14). Most Anaphothrips species have forked trichomes on antennal segments III and IV and some of them have one of two other characteristics of Baileyothrips, but none has accessory sternal setae. The male of Baileyothrips is remarkable for the unusual form and position of the abdominal gland as well as the presence of only one. The gland, on segment III, opens on the acrosternite as in Heterothrips, rather than behind the antecosta as in most Thripidae. Anaphothrips secticornis (Trybom) also has only a single gland on sternum III, but we are unable to determine its nature and exact position. Typical Anaphothrips species have glandular areas shaped like a "C" with the gap on the posterior side, on sterna III-VII.

This genus is named for Dr. Stanley F. Bailey, for his contributions to the study of Thysanoptera.

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BAILEYOTHRIPS ARIZONENSIS (MORGAN), n. comb.

Anaphothrips arizonensis Morgan, 1913. Proc. U.S.Natl. Mus. 46 (2008): 12-14, figs. 23-26.

Anaphothrips minutus Moulton, 1929. Pan-Pac. Ent. 5 (3): 127-128. New synonymy.

Anaphothrips minutus Moulton, Bailey, 1927. Bull. Calif. Insect Survey 4 (5): 161.

Male (macropterous). Length, distended, exclusive of antennae, 0.72-0.85 mm. Length, constricted, 0.57-0.66 mm. Light yellowish brown, occasionally with orange internal pigment in pterothorax, and with apical fifth of antennal segments V-VII grayish brown. Ocellar crescents brownish orange.

Head (Fig. 1) about 1.5 times as broad as long; cheeks slightly arched; occiput with faint, transverse, anastomosing striae. Eyes about 0.6 as long as head, and about 0.8 as wide as the interval between them. Posterior ocelli situated slightly back of middle of eyes. All setae minute and inconspicuous. Antennae (Figs. 7-8) with forked sensory trichome on segment III lateral, on IV ventral. Mouth cone (Fig. 3) short, scarcely more than dorsal length of head. Maxillary palpi 3-segmented.

Pronotum (Fig. 1) 1.3 times as long as head and about 1.5 times as broad as long; surface coarsely wrinkled; all setae minute and inconspicuous. Forelegs (Fig. 2) unarmed; all femora with translucent pores at base as in Fig. 5. Meso- and metanota as in Fig. 4. Meso- and metasterna as in Fig. 6; only mesofurca with spinula. Forewings (Fig. 10) with 14-19 costal setae, 9-13 forevein setae, and 5-8 hindvein setae. Apical seta of forewing leaf-shaped (Fig. 9), remainder minute.

Abdominal terga (Fig. 14) with very faint, transverse, anastomosing striae that are often produced into teeth, especially at the sides; II-VIII with posterior marginal flanges; flanges on II-VII scalloped mesally and dentate laterally; flange on VIII forming a complete comb of fine, alternately short and long teeth. Tergum IX with setae normal, not thornlike; and with two pairs of pores. Sterna (Figs. 13 and 15) occasionally with minute teeth laterally on lines of sculpture and posterior margins, but without posterior marginal flanges; setae numerous, grouped in median transverse and posterior marginal rows, as in Heterothrips, with primary setae not distinguishable from accessories. Sternum III with a large, elliptical glandular area at base (Fig. 13).

Measurements of uncleaned male specimen in mm: length, exclusive of antennae, 0.85; head, length 0.081, width 0.106; prothorax, length 0.093, width 0.141; pterothorax, width 0.178; forewings, length 0.467, greatest width near base 0.056, at middle 0.033; abdomen, greatest width 0.167. Costa with 19 setae; forevein, 11; hindvein, 8.

Antennal segments:	I	II	III	IV	V	VI	VII	VIII
Length in microns	13	26	33	27	24	30	6	11
Width in microns	19	22	16	17	18	15	6	4

Total length of antenna, 0.169 mm.

Female (macropterous). Similar to male in general structure and details of coloration, except that pterothorax regularly has orange internal pigment. Abdomen as in Figs. 11 and 12.

Measurements of lectotype in mm. (range for species in parentheses) Length, exclusive of antennae, 0.98 (distended, 0.82-1.01; constricted, 0.63-0.76); head, length 0.093, width 0.152; prothorax, length 0.111, width 0.178; pterothorax, width 0.270; forewings, length 0.584, greatest width near base 0.070, at middle 0.037; abdomen, greatest width 0.270. Costa of forewing with 22 setae (17-27), forevein with 15 (9-16), hindvein with 9 (6-11).

Antennal segments:	I	II	III	IV	V	VI	VII	VIII
Length in microns	15	30	37	33	31	37	6	11
Width in microns	22	22	19	19	16	15	6	4

Total length of antenna, 0.200 mm.

Material studied.--Arizona: Yuma, on snakeweed, July 6, 1910, A. McLachlan, 7 ♀♀ (lectotype and paralectotypes of arizonensis); Marana, on Euphorbia albomarginata, Aug. 2, 1963, D. M. Tuttle, Cal. Dept. Agr. No. 64029-7, 25♀♀, 2♂♂; Peoria, on flowers of Rosa sp., April 22, 1958, F.F. Bibby No. 1471, lot 58 7883, 1♀; Gila Bend, on E. albomarginata, Oct. 15, 1963, D. M. Tuttle, Cal. Dept. Agr. No. 64029-8, 22 ♀♀, 6 ♂♂; Gila Bend, on Dalea mollis, Oct. 15, 1963, D. M. Tuttle, Cal. Dept. Agr. No. 64029-9, 4♀♀.

California: Porterville, on E. albomarginata, Oct. 5, 1927, R. A. McGregor, Moulton No. 2448, 2 ♀♀ (holotype and paratype of minutus).

Texas specimens may or may not represent this species. The National Collection includes one female each from Lubbock, cotton, July 6, 1955, lot 55 8951; McLennan Co., weeds, March 31, 1958, lot 58 5571; and Bexar Co., soil in peach orchard, Oct. 8, 1937, W. F. Turner, Lot 37 24597.

A single female of arizonensis was found by J. E. Malory, Jr., Dec. 3, 1959, on peel of grapefruit sent from Mogadiscio, Somalia, to Washington, D. C. (W-7248, 59 27717).

Morgan (1913:12) described Anaphothrips arizonensis from 10 females collected on "snakeweed" in Yuma, Arizona. Moulton (1929:127) described Anaphothrips minutus from 2 females collected on Euphorbia albomarginata (rattlesnake weed) in Porterville, California. We have studied both authors' type-series and a long series of specimens collected by Dr. Donald M. Tuttle on E. albomarginata and Dalea mollis in Arizona, and found they are the same species, so that minutus Moulton is a synonym of arizonensis Morgan. Moulton thought the presence of only 9 or 10 setae on the forevein and 7 on the hindvein in his species distinguished it from arizonensis, but the number of setae in arizonensis varies from 9-16 on the forevein and 6-11 on the hindvein in the female.

We here designate as lectotype of arizonensis the female mounted ventral side up on Morgan's "type slide," U.S.N.M. no. 15725. This specimen is in the National Museum. The type of minutus is in the Moulton collection in the California Academy of Sciences.

We wish to thank Mr. Hugh B. Leech of the Department of Entomology, California Academy of Sciences, for the loan of A. minutus slides in the Moulton collection, and the entire Entomology staff at the Academy for their kindness and helpfulness to us during our study of the collection. We are grateful to Dr. Donald M. Tuttle of the University of Arizona, Yuma, for the specimens that he collected.

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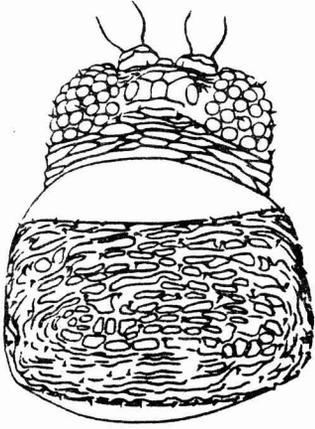
Plate I

Baileyothrips arizonensis (Morgan)

male

- Fig. 1. Dorsal aspect of head and prothorax.
Fig. 2. Dorsal aspect of right foreleg.
Fig. 3. Ventral aspect of head and prothorax.
Fig. 4. Meso- and metanotal plates.
Fig. 5. Ventral aspect of left foreleg showing coxa, trochanter, and base of femur with translucent pores.
Fig. 6. Ventral aspect of pterothorax.
Fig. 7. Dorsal aspect of right antenna.
Fig. 8. Dorsal aspect of antennal segments III and IV.
Fig. 9. Dorsal aspect of apex of forewing.
Fig. 10. Dorsal aspect of right forewing.

Plate I



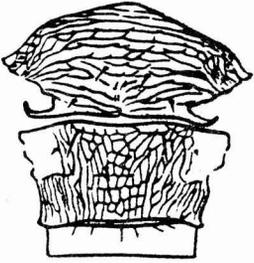
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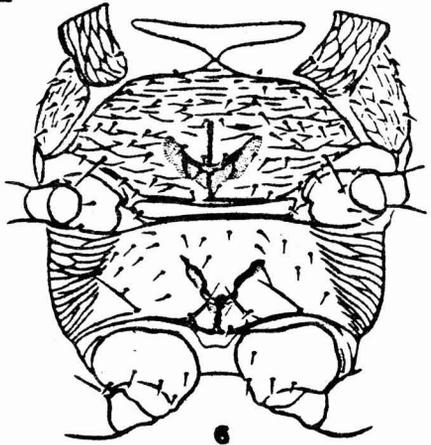
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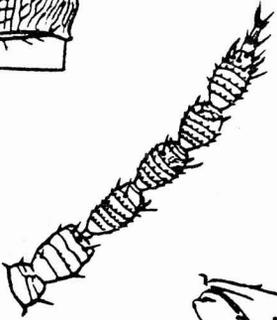
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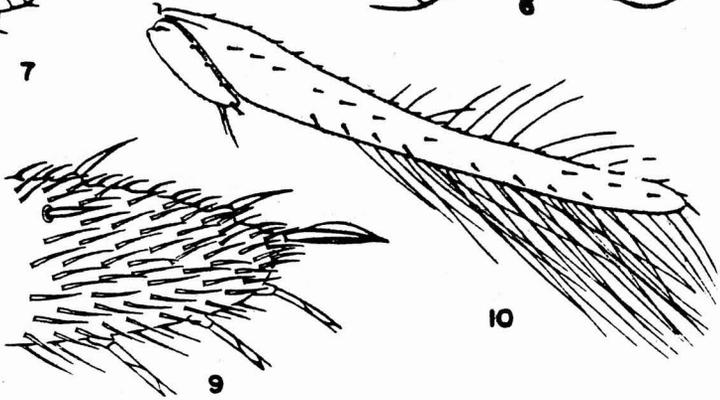
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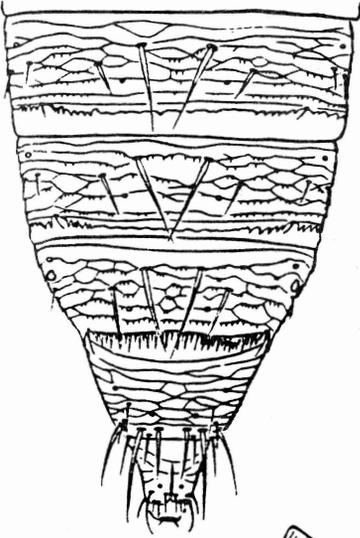
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Plate II

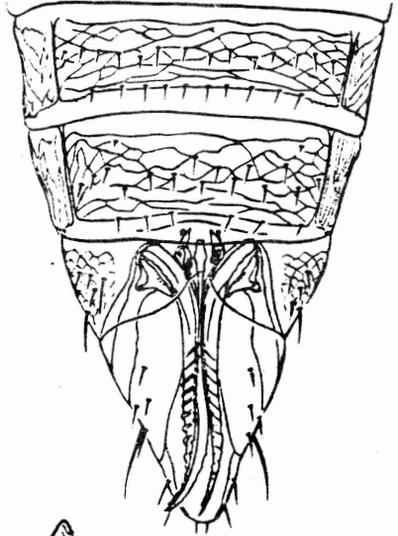
Baileyothis arizonensis (Morgan)

- Fig. 11. Abdominal terga VI-X, ♀.
Fig. 12. Abdominal sterna VI-X, ♀.
Fig. 13. Abdominal sterna II and III, showing glandular area at base of III, ♂.
Fig. 14. Abdominal terga VI-X, ♂.
Fig. 15. Abdominal sterna VI-X, ♂.

Plate II



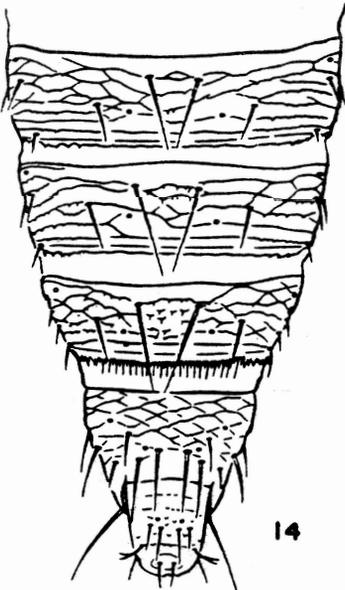
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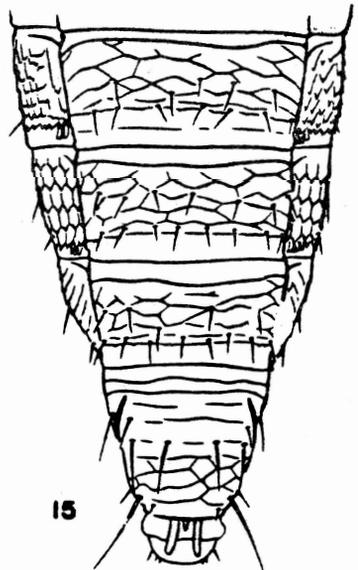
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