THREE NEW SPECIES AND TWO NEW RECORDS OF THRIPS (THYSANOPTERA) IN ILLINOIS

LEWIS J. STANNARD, JR.
Illinois Natural History Survey, Urbana

The subjects of this article are hard-to-find species. Although little is known about them, it seems worthwhile to report their presence and describe those that are new. For the past five years or more I have known that they inhabit Illinois; yet, despite repeated searches, not many individuals have been collected. Their niche in the general environment remains to be located. In the broad sense two are prairie species, two are woodland species that presumably occur on herbs, and one is a woodland species that occurs in the fallen leaf mold.

Types of the new species are deposited in the collections of the Illinois Natural History Survey.

Anaphothrips (Anaphothrips) sandersoni new species

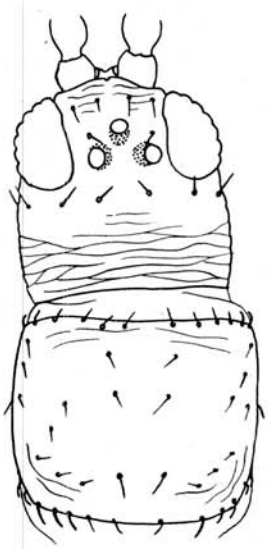
Female (macropterous).—Length distended, about 1.5 mm.; color yellow, except for apex of antennal segment V, all of antennal segments VI, VII, VIII, and IX, and tip of mouth cone which are brown; forewings, grayish yellow; ocellar crescents, red; head about as long as wide (Fig. 1); ocelli present; antennae nine-segmented; antennal segments III and IV each with a forked sense cone; mouth cone, long and pointed; posterior angles of pronotum without any long setae; abdominal tergite VIII with complete comb of setae (setae long and not fused with each other at base); abdominal tergite X completely split longitudinally.

Male (macropterous).—Length distended, over 1 mm.; color and general structure similar to female; abdominal sternites III to VII each with horseshoe-shaped glandular area; glandular area on segment VII often smaller and more crescent-shaped than horseshoe-shaped; no other glandular areas as turned in posteriorly as those in *A. catawba;* abdominal tergite VIII with complete posterior comb of setae; abdominal tergite IX with four stout spinelike setae.

Holotype.—Female, Kinmundy, Marion County, Illinois, July 23, 1947. (Sanderson and Stannard) sweeping *Andropogon. Allotype.*—Male, Lawrence, Douglas County, Kansas, August 31, 1952 (S. C. and M. W. Sanderson) sweeping prairie plants. *Paratypes.*—24 ♀, same data as for holotype; 9 ♀, 3 ♂, same data as for allotype; 3 ♀, Elkhart, Logan County, Illinois, May 20, 1950 (Ross and Stannard) sweeping grasses and willows; 3 ♀, Farina, Fayette County, Illinois, July 23, 1947 (Sanderson and Stannard) on leaves of *Polygonum;* and 6 ♀, Farmer City, Dewitt County, Illinois, April 20, 1954 (L. J. Stannard) sweeping prairie plants.

This distinctive species is named for Dr. Milton W. Sanderson, one of our leading coleopterists, who took me to the prairie areas where these thrips were first found, who collected them later himself while on vacation in Kansas, and who has discovered many other new records of thrips in the states bordering the Mississippi River.

From the other yellow-colored species with complete posterior combs on abdominal tergite VIII that occur in the eastern states, *A. sandersoni* may be distinguished by the possession of fully developed wings, the nine-segmented condition of each antenna, the long mouth cone, and



Anaphothrips sandersoni
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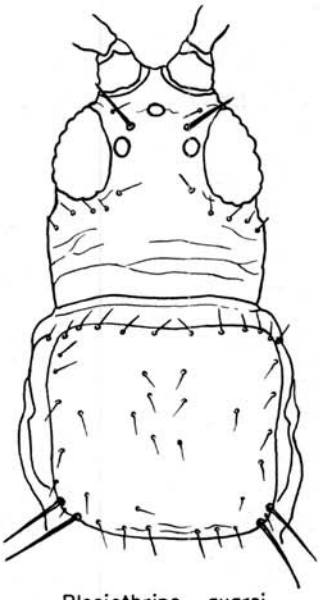

Plesiothrips ayarsi
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FIG. 1.—*Anaphothrips* (*Anaphothrips*) *sandersoni* new species, dorsal aspect of head and prothorax.

FIG. 2.—*Plesiothrips ayarsi* new species, dorsal aspect of head and prothorax.

by the coarser type of head and pronotal striations.

This species is apparently limited to the midwestern prairie region.

Plesiothrips ayarsi new species

Female (macropterous).—Length distended, about 1.3 mm.; bicolored, brown and yellow; head, antennal segment I, most of segment II except apex, segment IV in apical half, segment V except pedicel, all of segments VI and VII, posterior half of abdominal segment IX, and all of abdominal segment X, brown; rest of body yellow, except prothorax which is faintly clouded with brown; forewings light but with some light gray tints; ocellar pigments red; body with red subintegumental pigment, especially extensive in thorax; head longer than wide; inner postocular setae near eyes, arising anterior to other postocular setae (Fig. 2); prothorax with three pairs of posterior minor setae between epimeral pairs; abdominal sternite III without glandular areas; abdominal sterna without accessory setae.

Male (macropterous). — Length distended, slightly over 1 mm.; color darker than female; almost entirely light brown; head, antennae, and terminal abdominal segments darkest, and apical portions of leg segments and anterior abdominal segments lightest.

In structure the male is like the female with the following exceptions: antennal segments IV, V, and VI enlarged as usual for males in this genus and segments IV and V each with ring joint; abdominal sternites III and IV each with pair of small circular glandular areas; and abdominal tergite IX with usual two thornlike, posterior, marginal projections.

Holotype. — Female, Fountain Bluff, Gorham, Jackson County, Illinois, August 16, 1950 (Evers and Stannard) hill prairie. *Allotype.*—Male, same data as for holotype. *Paratypes.*—1 ♂, 5 ♀, same data as for holotype; 1 ♀, Karbers Ridge, Hardin County, Illinois, August 18, 1950 (Evers and Stannard) hill

prairie; 1 ♀, Vienna, Johnson County, Illinois, August 17, 1950 (Evers and Stannard) hill prairie; 3 ♀, Forest City, Mason County, Illinois, September 11, 1953 (Ross and Stannard) sand prairie; 1 ♀, Monticello, Piatt County, Illinois, October 3, 1939 (M. D. Farrar); 1 ♀, Elgin, Kane County, Illinois, October 10, 1952 (Ross and Stannard) prairie on gravelly moraine; 1 ♀, Mt. Magazine, Logan County, Arkansas, July 16, 1949 (Sanderson and Stannard) hill prairie; 1 ♀, Von Ormy, Bexar County, Texas, July 27, 1953 (J. S. Ayars) grasses.

This species is a southwestern derivative; at least its range outside of Illinois is located entirely to the southwest. It is named for Mr. James S. Ayars, Technical Editor for the Illinois Natural History Survey, who collected the only Texas specimen of this species and who for many years has collected large numbers of other species to augment our knowledge of the thrips of this country.

From the closely related *P. perplexus*, *P. ayarsi* may be distinguished by the lighter color of the abdomen and thorax and by the placement of the inner postocular setae. In *P. ayarsi* these setae are placed more forward on the head and nearer the eyes, whereas in *P. perplexus* they are placed farther back and more medially on the head.

In Illinois this thrips is mostly confined to sand or hill prairies. Its distribution is disjunct and suggestive of the distribution of a relict species.

Thrips sylvanus new species

Female (macropterous).—Length distended, about 1.4 mm.; general color dark brown; antennal segments I and II dark brown; remainder of antennae bright yellow except often fading into brown in segments VI and VII, and sometimes fading into brown in segment V; apexes of tibiae and all of each tarsus yellow, fore tibiae being lightest; ocellar pigment red; forewings abruptly pale at base, uniformly brown in remainder of wing; prothorax with few (at most 3 or 4) pairs of setae on median part of notum; major posterior lateral setae fairly short; most of metanotal shield with hexagonal reticulations; forewings usually slightly upturned at tip; forevein with only two apical setae; posterior setae of intermediate abdominal sterna disposed along edge, median pair of these setae not moved anteriorly on sternum except on abdominal segment VII; no accessory setae present on abdominal sterna; posterior margin of abdominal segment VIII fringed with scalelike projections; most other abdominal segments similarly fringed but with scalelike projections weaker.

Male (macropterous). — Length distended, about 1 mm.; general color and structure similar to female; small sternal abdominal glands present on segments III to VII, gradually changing from eliptical on segment III to nearly circular on segment VII; Illinoian specimens tend to have antennae lighter in color—in one Illinoian paratype from Valmeyer, antennae entirely bright yellow from segment III to VII.

Holotype. — Female, Chimneys Camp Ground, Great Smoky Mountains National Park, Tennessee, August 31-September 1, 1948 (Ross and Stannard) sweeping woods. *Allotype.*—Male, same data as for holotype. *Paratypes.*—4 ♀, 1 ♂, same data as for holotype; 1 ♀, Valmeyer, Monroe County, Illinois, July 19, 1948 (Smith and Stannard) sweeping in woods; 1 ♀, Marshall, Clark County, Illinois, May 13, 1949 (Ross, Gloyd, Stannard) sweeping woods.

This thrips has been collected in Illinois and Tennessee several times over the past few years. Always it has been taken from woodlands in miscellaneous net sweepings without knowledge of its specific host plant or plants.

From previously described eastern species of *Thrips*, *T. sylvanus* may be distinguished at once by the presence of a series of scalelike projections along the posterior margin of the tergum of abdominal segment VIII. All other species of *Thrips* found within the range of *T. syl-*

vanus possess, on the posterior margin of abdominal segment VIII, either a series of setae that form a comb, or a series of scalelike projections which are tipped by fine filaments resembling setae, or setae only at the sides, or the margin is entirely bare.

New Records for the State of Illinois

Chaetanaphothrips orchidii (Moulton).—This species has been taken in woodlands in four localities as enumerated later. Neither the food plant nor the exact habitat preferred was observed because in every instance they were taken unknowingly while sweeping all sorts of vegetation in the forest undergrowth.

I restrict *C. orchidii* to those individuals which have no setae immediately next to the fore ocellus, which lack sternal abdominal glandular areas in the female, and which have the outer epimeral pair of setae proportionately longer than the same setae in *C. signipennis*. In my opinion, these characteristics are of specific significance and not merely "form" differences as Hood claimed in 1954.

That *C. orchidii* and *C. signipennis* are most likely different species, and not diploid and haploid forms of a single species (Hood, 1954), is based on the following: 1) Hood offered no evidence (cytological or otherwise) for his statement that one was haploid and the other diploid. Rather, Hood's contention, as presented in its entirety, was a baseless guess. Furthermore, to my knowledge, female insects are not haploid; 2) *C. orchidii* (as defined here) apparently occurs wild in many places in North America and possibly in South America but not wild in other areas of the world; and 3) *C. signipennis* apparently is host specific to (or prefers) bananas. Since bananas are "native to tropical Asia, Africa, Australia and adjacent islands" (Bailey, 1943), it could be presumed logically that the banana's thrips, *C. signipennis*, also is native to the Old World.

Seemingly, *C. orchidii* and *C. signipennis* were allopatric entities at some time before widespread human commerce. Because in many regions the two species now occur side by side is no reason to assume that they interbreed. Even if they do interbreed, there is no reason to suspect that one is haploid and the other diploid.

The discovery of *C. orchidii* in the wild in Illinois indicates that this species has a wider temperature tolerance than previously thought. Watson (1927) considered this thrips to be native to the warm regions of America, being distributed as far north as Florida. On the other hand, Pelikan (1954) surmised that it was native solely to the tropical northern coast of South America. The discovery that a supposed tropical species does extend into the midwest is not unusual. Many thrips have been found to have extensive ranges stretching from deep in the tropics north to Illinois and even Michigan.

Illinois specimens.—3 ♀, Oquawka, Henderson County, September 8, 1947 (Ross and Stannard) sweeping herbs in woodland; 1 ♀, Valmeyer, Monroe County, July 19, 1948 (Smith and Stannard) sweeping herbs in woodland; 1 ♀, Eldred, Greene County, June 7, 1949 (Sanderson and Stannard) sweeping

herbs in woodland; and 1 ♀, Carlyle, Clinton County, August 15, 1951 (Ross and Stannard) on dead branch.

Preeriella minuta Hood. — This species, as its name suggests, is one of the smallest thrips of our fauna. To date it has been found at seven widely-scattered localities within the state. All of these areas are outside the region of Wisconsin glaciation. It would seem, therefore, that the flat, poorly drained country that once was covered by the Wisconsin ice lobe acts as a barrier to the northward or eastward extension of the range of this thrips.

Originally *P. minuta* was described from Florida. It was considered to be a rare thrips, hardly known to most thysanopterists except by its description. Until recently its presence in Illinois was not suspected; in fact, several years ago, it would not have been listed as a possible inhabitant of states even farther south.

On July 18, 1949, Dr. M. W. Sanderson and I visited Eureka Springs in the Ozarks of Arkansas and collected a sample of leaves from the forest floor. In those leaves one specimen of *Preeriella minuta* was discovered, much to our surprise and delight. Thereafter in Illinois, we began an intensive search for this thrips, especially in the hills near or in the Ozarks. A year later a specimen was turned up at Herod, an area in the Shawnee Hill region of Illinois, and again this thrips was found in leaf mold. Since then we have collected more than a dozen individuals, always in leaf mold and always by seep areas or in very damp, decaying leaves. Besides the Illinois and Arkansas material, we have taken specimens in Mexico and in Texas.

Illinois specimens.—1 ♀, Herod, Pope County, May 5, 1950 (Sanderson and Stannard) forest debris; 1 ♀, 1 ♂, Florence, Pike County, October 1, 1953 (Smith and Stannard) leaf mold by spring; 2 ♀, Olive Branch, Alexander County, February 3, 1954 (Smith and Moore) forest debris; 6 ♀, 3 ♂, Pana, Christian County, April 7, 1954 (Smith and Stannard) forest debris; 2 ♀, Carthage, Hancock County, April 18, 1954 (T. E. Moore) forest debris; and 2 ♀, Pyatts, Perry County, April 11, 1956 (L. J. Stannard) fallen leaves in bottomland forest.

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