

BULLETIN

OF THE

ILLINOIS STATE LABORATORY

OF

NATURAL HISTORY

URBANA, ILLINOIS, U. S. A.

VOL. VIII.

AUGUST, 1908

ARTICLE II.

NEW GENERA AND SPECIES OF ILLINOIS THYSANOPTERA

BY

J. DOUGLAS HOOD

ERRATA AND ADDENDA.

Page 58, line 7, for *ovalis* read *ovata*.

Page 85, line 8, for *longicaudus* read *longicauda*, and just above *Phacus pleuro-nectes* read the following paragraph:—

Phacus longicauda var. *torta*, n. var.—This variety, for which I propose the name *torta* because of the twisted body, is figured by Stein ('78, Taf. 20, Fig. 3). It occurred sparingly in midsummer from July to September, rarely in October, in 1896 and 1897.

Page 91, line 18, after *T. caudata* Ehrb. read *T. lagenella* Stein.

Pages 153, line 3 from bottom, 168, line 16, and 178, line 14, for '98 read '98a.

Pages 156, line 11, 159, line 16, and 161, line 5 from bottom, for '93 read '98a.

Pages 175, line 5, 186, line 3, and 208, line 17, for *Bimærium* read *Dimærium*.

Page 288, line, 3 for *Lampsilus* read *Lampsilis*.

Page 292, line 13, for *gracilis* read *gracile*.

Page 471, line 3 under heading beetles, for *pennsylvanicus* read *pennsylvanica*

ARTICLE II.—*New Genera and Species of Illinois Thysanoptera.*
BY J. DOUGLAS HOOD.

In the present paper, descriptions are given of five new genera and fifteen new species of Illinois Thysanoptera. For much of the material upon which these descriptions are based, I am indebted to several of my friends and associates, among whom may be mentioned Charles A. Hart, Robert D. and Hugh Glasgow, John J. Davis, Lindley M. Smith, Henry E. Ewing, James Zetek, Frank C. Gates, and George H. Coons.

In the measurements, non-chitinous portions have been excluded. For example, the length of the prothorax is taken to be its length along the median dorsal line, exclusive of the membrane connecting it with the head.

Type specimens are in the writer's collection, and in the collection of the Illinois State Laboratory of Natural History.

SUBORDER **TEREBRANTIA** HALIDAY

FAMILY THRIPIDÆ Uzel.

HETEROTHRIPS gen. nov. (Fig. 1.)

(ἕτερος, other than usual; θρίψ, thrips.)

Head wider than long. Ocelli present. Antennæ clearly nine-segmented; segments 3 and 4 conical, large, their combined lengths about equal to that of segments 5–9, each with an apical band enclosing small circular sensoria (?), disposed in two nearly regular transverse rows; segments 5–9 much narrower than 3 and 4, successively diminishing in diameter; segments 5–8 provided each with either one or two slender sense cones. Maxillary palpi three-segmented. Prothorax twice as long as head, sides decidedly arcuate; not armed with long spines. Second fore tarsal segment armed with a claw-like appendage. Fore wings long, narrow, pointed, with two longitudinal veins, separate for their entire length, and set with from 20 to 24 stout spines; costa similarly armed with stout spines which

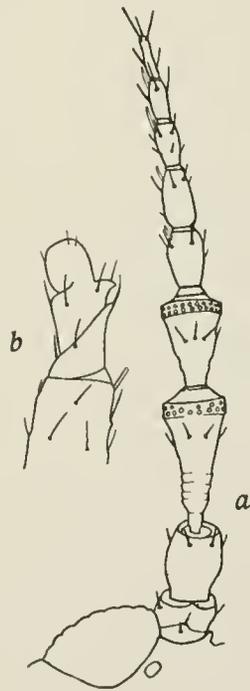


FIG. 1
Heterothrips arisema, female. *a*, left antenna, dorsal view; *b*, right fore tarsus, outer side. (J. D. H., del.)

gradually increase in length toward apex of wing. Sides of abdomen reticulate, sparsely spinose; posterior margins of abdominal segments 2-8 prolonged into small equidistant flattened spines (excepting under the wings), which may be united at their bases into plates; tip of abdomen (in female) conical, tenth segment weakly chitinized in its apical median half; ovipositor well developed, curved downwards.

This genus, although seemingly a specialized one and suggesting *Sericothrips* Haliday, has retained certain primitive characters (the nine-segmented antennæ, the character of the sensoria, and the tarsal appendage) which indicate affinities with the *Æolothripidæ*. In view of the fact that in all the species of the order, a change in the number of antennal segments always consists in a reduction and never in an increase in the number of these segments, it might be assumed that the Thripidæ early divided into two branches, one of which, continuing more nearly along the original line, gave rise to the present genus, while the other produced the ordinary type of Thripidæ. *Heterothrips* is, indeed, so sharply separated from all other members of its family, that a new sub-family might easily be erected for it; but it seems best to defer this until the Thripidæ are better known.

Heterothrips arisæmæ sp. nov. (Fig. 1.)

Female.—Length about 1.25 mm. Color nearly uniform dark blackish brown; tarsi, anterior tibiæ, and third antennal segment pale yellowish.

Head rather coarsely transversely striate, faintly but sharply constricted at posterior margin of eyes; frons acutely emarginate. Antennal segments 1 and 2 slightly lighter than body, shaded laterally with black, the former provided with a sub-transverse carina; segment 3 pale yellowish, with a narrow sub-basal white band, and apical third clouded with brown; segments 4-9 uniform light blackish brown, excepting the yellowish sub-apical band of sensoria on segment 4.

Prothorax about twice as long as head and two-thirds as long as wide; sides and angles rounded; surface sparsely spinose, and faintly reticulate. Pterothorax about 1.3 times as wide as prothorax, and about as long as wide; mesoscutum transversely striate, and with four pairs of short spines; metascutum concentrically striate. Wings just attaining tip of abdomen; basal third widened, the sub-basal width slightly more than twice the sub-apical, and contained in the total length about 7.6 times; color blackish brown, excepting a broad sub-basal white band. Legs reticulate; femora nearly concolorous with body, the anterior pair shading to yellow at apex; fore tibiæ yellow, shaded later-

ally with brown; middle and hind tibiæ blackish brown, extremities paler; all tarsi clear yellow.

Abdomen lanceolate, widest at segment 4; spines short, inconspicuous.

Measurements:—Total length 1.24 mm.; head, length .10 mm., width .18 mm.; prothorax, length .16 mm., width .24 mm.; pterothorax, width .32 mm.; abdomen, width .34 mm. Antennæ: 1, 28 μ ; 2, 42 μ ; 3, 84 μ ; 4, 56 μ ; 5, 34 μ ; 6, 34 μ ; 7, 25 μ ; 8, 22 μ ; 9, 25 μ ; total, .37 mm.

Male.—Length .72–.80 mm.; prothorax, length .14 mm., width .22 mm.; mesothorax, width .22 mm.; abdomen, width .19 mm.

Brachypterous. Last ventral segment of abdomen with a broad, semicircular emargination, each side of which is an acute tooth.

Described from twelve females and two males, taken at Urbana, Illinois, in flowers of Jack-in-the-pulpit (*Arisæma triphyllum*), by Mr. Frank C. Gates.

Genus SERICOTHRIPS Haliday, 1836.

Sericothrips pulchellus sp. nov.

Female.—Length about 1 mm. Color dark blackish brown to black, with bright red hypodermal pigmentation.

Similar to *S. variabilis* (Beach), differing from it as follows:

Head uniform gray-black. Antennal segments 1 and 2 dark blackish brown, the latter grayish yellow at middle; segments 3, 4, and 5 grayish yellow, 5 slightly clouded apically; segments 6–8 gray, the basal third of 6 grayish yellow.

Prothorax concolorous with head, with conspicuous black reticulation, and thickly dotted with black spots, the latter visible only under high power. Pterothorax nearly concolorous with prothorax, the red pigmentation usually quite conspicuous. Fore wings black, tipped with white, and with two broad white cross bands, one near base, other near apex. Femora nearly concolorous with body, pale basally; ground color of tibiæ pale yellow, the fore pair clouded basally and laterally with brown; middle and hind pairs pale at extreme base, beyond which they are concolorous with the femora to, or slightly beyond, middle; tarsi pale yellow.

Abdomen often pale at middle, and with segments 7–10 darker.

Measurements:—Total length 1.0 mm.; head, width .17 mm.; prothorax, length .14 mm., width .21 mm.; mesothorax, width .28 mm.; abdomen, width .31 mm. Antennæ: 1, 22 μ ; 2, 39 μ ; 3, 62 μ ; 4, 59 μ ; 5, 48 μ ; 6, 53 μ ; 7, 11 μ ; 8, 14 μ ; total, .31 mm.

Male.—Length about .7 mm. Coloration similar to that of female.

This species is very close to *S. variabilis* (Beach), but the coloration is distinctive. In living specimens, examined under a hand lens,

the head and prothorax are velvety-black and without luster, due no doubt to the microscopic reticulation.

At Muncie, Illinois (the only locality from which I have seen specimens) this species was very abundant upon the hop tree (*Ptelea trifoliata*). As many as fifty individuals were frequently observed on the under surface of a single leaf, where their peculiar coloration rendered them very conspicuous.

SUBORDER **TUBULIFERA** HALIDAY.*

FAMILY **PHLÆOTHIRIPIDÆ** Uzel.

Genus **ZYGOTHRIPS** Uzel, 1895.

Zygothrips longiceps sp. nov. (Fig. 2).

Female.—Similar to *Z. minutus* Uzel, from which it differs as follows:

- a. Length about 1.1 mm. head about 1.1 times as long as wide, half as long as antennæ, and about 1.4 times as long as tube. Anterior marginal spines on prothorax large, subequal in length to the others. Posterior margins of abdominal segments 3-7 provided each with two pairs of straight spines, the inner pair short. Tarsi light yellow, tibiæ yellowish, the first and third pairs clouded at base, and the second pair at middle, with brown or black

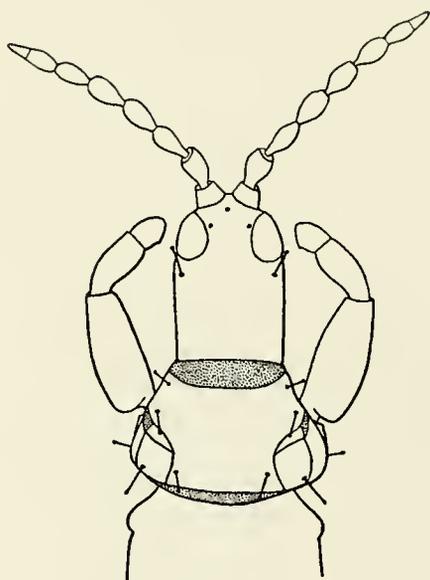


FIG. 2

Zygothrips longiceps, female, head and prothorax. (J. D. H., del.)

- Z. minutus* Uzel.
aa. Length about 1.47 mm. Head about 1.4 times as long as wide, three-fifths as long as antennæ, and almost twice as long as tube. Anterior marginal spines on prothorax wanting. Posterior margins of abdominal segments 3-6 provided each with two pairs of long spines, the inner pair sigmoid. Tibiæ and tarsi uniform bright yellow

Z. longiceps sp. nov.

The measurements of the female of this species are as follows: Total length 1.47 mm.; head, length .192 mm., width .134 mm.; prothorax, length .123 mm., width (including coxæ) .232 mm.; pterothorax, width .234 mm.; abdomen, width .272 mm.; tube, length .102

*The division of the Tubulifera into the two families *Phlæothripidæ* and *Idolothripidæ*, proposed by R. S. Bagnall (Ann. and Mag. of Nat. Hist., Eighth Series, Vol. I., No. 4, p. 356; Apr., 1908), seems to be an unnatural one, apparently separating from each other species which are more closely related than the extremes of the respective families into which they fall.

mm., width at base .057 mm., at apex .032 mm. Antennæ: 1, 24 μ ; 2, 44 μ ; 3, 44 μ ; 4, 46 μ ; 5, 45 μ ; 6, 41 μ ; 7, 38 μ ; 8, 24 μ ; total, .30 mm.

Described from a single brachypterous female taken by the writer in a gall on *Solidago*, at Carbondale, Illinois, June 20, 1907.

LISSOTHRIPS gen. nov.

(*λίσσός*, smooth; *θρίψ*, thrips.)

Head slightly wider than long, sub-globose, narrowed posteriorly; eyes directed forwards; cheeks full, sparsely spinose. Antennæ about twice as long as head, eight-segmented; segments 1 and 2 broadest; 3 very small, shorter and narrower than any of the following segments, excepting the distal one; 7 longest. Mouth cone broad, pointed, surpassing base of prosternum. Prothorax shorter than head, with five pairs of very long bristles. Fore tarsi unarmed.

This genus is closely related to *Cephalothrips* Uzel, but the longer, pointed mouth cone and the structure of the antennæ are sufficiently distinctive to warrant the erection of a new genus.

Lissothrips muscorum sp. nov.

Female.—Length about 1.17 mm. Color blackish brown to black, legs and antennal segments 1 and 2 paler.

Eyes moderate in size, coarsely faceted, situated on anterior surface of head. Ocelli lacking. Postocular spines long, blunt, expanded distally.

Prothorax three-fourths as long as head; spines slightly expanded at tips; mid-lateral spines and the pair at the posterior angles almost as long as prothorax. Pterothorax about as long as, and slightly narrower than prothorax; mesonotum with one long spine at each posterior angle.

Abdomen one and one-third times as wide as prothorax; posterior borders of abdominal segments 2–9 each with two pairs of very long, subequal, pointed bristles, some twice the length of the abdominal segments.

Measurements:—Total length about 1.17 mm.; head, length .16 mm., width .17 mm.; prothorax, length .12 mm., width (including coxæ) .28 mm.; pterothorax, width .26 mm.; abdomen, width .36 mm.; tube, length .12 mm., width at base .070 mm., at apex .034 mm. Antennæ: 1, 25 μ ; 2, 43 μ ; 3, 32 μ ; 4, 42 μ ; 5, 42 μ ; 6, 46 μ ; 7, 48 μ ; 8, 36 μ ; total, .31 mm.

Described from several apterous females, from Arcola, Dubois, Mahomet,^{*} Marion, Muncie, Pulaski, and Urbana, Illinois, taken in moss.

Genus TRICHOTHRIPS Uzel, 1895.

Trichothrips americanus sp. nov. (Fig. 3).

Female.—Forma brachyptera.—Length about 1.7 mm. General color clear brownish yellow with more or less dark hypodermal pigmentation; prothorax and basal abdominal segments slightly darkened with brownish black; tube tipped with gray.

Head slightly longer than wide; vertex elevated, rugose, sloping abruptly to bases of antennæ; cheeks rounded, faintly reticulate, sparsely spinose; postocular bristles slender, pointed. Eyes reduced. Ocelli wanting. Antennæ slightly more than twice as long as head; segments 1 and 2 concolorous with body, shaded laterally with black; 3–8 uniform dark blackish brown, excepting extreme base of 3, which is yellow; 3 subconical; 4–7 oblong, pedicellate, subequal in length, but becoming gradually narrower; 8 lanceolate, pedicellate; segments 3 and 4 each with two outer sense cones and one inner one; 5 and 6 each with one sense cone on either side of apex, the outer one on segment 6 very small. Mouth cone just attaining base of prosternum; labium broadly rounded; labrum pointed, surpassing labium by the length of the maxillary palpus.

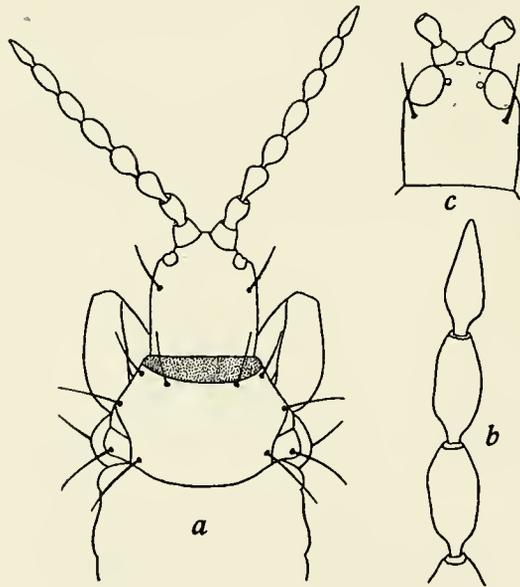


FIG. 3

Trichothrips americanus, female. *a*, head and prothorax, brachypterous form; *b*, tip of right antenna, dorsal view, brachypterous form; *c*, head, macropterous form. (J. D. H. et J. Z., del.)

Prothorax slightly shorter than head, and (including coxæ) about twice as wide as long; all spines present, long, pointed. Pterothorax about as long as, and usually somewhat narrower than, prothorax. Wings short, attaining base of abdomen. Legs about concolorous with body, all femora shaded laterally with brown or black; tarsal cups black; fore tarsi armed with a small, acute tooth.

Abdomen large, heavy, about one and one-third times as wide as prothorax. Tube slightly shorter than head, twice as wide at base as at apex.

Measurements:—Total length 1.68 mm.; head, length .21 mm., width .19 mm.; prothorax, length .18 mm., width (including coxæ) .38 mm.; pterothorax, width .36 mm.; abdomen, width .50 mm.; tube, length .18 mm., width at base .098 mm., at apex .045 mm. Antennæ: 1, 36 μ ; 2, 56 μ ; 3, 62 μ ; 4, 59 μ ; 5, 62 μ ; 6, 59 μ ; 7, 57 μ ; 8, 57 μ ; total, .45 mm.

Forma macroptera.—Similar to *forma brachyptera* in size; general color darker, the entire body shaded with grayish brown.

Head broadly rounded in front. Ocelli present. Eyes large, finely faceted. Pterothorax wider than prothorax. Wings large, reaching base of tube; color light gray-brown, spotted with darker.

Male (Forma brachyptera).—Similar to female, but smaller (length about 1.4 mm.). Prothorax about as long as head. Fore tarsi armed with a slightly larger tooth. Abdomen slender, tapering more gradually to apex.

Described from several specimens from Carbondale, Homer, and Urbana, Illinois, taken under bark on rotten stumps.

Trichothrips angusticeps sp. nov. (Fig. 4).

Female.—Length about 1.4 mm. General color brownish yellow with considerable maroon-colored hypodermal pigmentation; head, prothorax, sides of abdomen, and tip of tube slightly darkened with brownish black.

Similar to *T. americanus* sp. nov., differing from it as follows:

Head fully 1.4 times as long as wide; cheeks parallel; postocular bristles knobbed. Antennæ 1.7 times as long as head, nearly concolorous with darker parts of body, excepting segments 1 and 2, and basal half of 3, which are paler. Mouth cone considerably surpassing base of prosternum; labrum surpassing labium by twice the length of the maxillary palpus.

Prothorax about .7 as long as head; all spines present, long, knobbed. Legs yellow, all femora shaded slightly with brownish.

Abdomen rather slender; tube .6 as long as head.

Measurements:—Total length 1.44 mm.; head, length .22 mm., width .16 mm.; prothorax, length .16 mm., width (including coxæ) .34 mm.; pterothorax, width .30 mm.; abdomen, width .42 mm.; tube, length .14 mm., width at base .081 mm., at apex .038 mm. Antennæ: 1, 31 μ ; 2, 49 μ ; 3, 53 μ ; 4, 50 μ ; 5, 53 μ ; 6, 50 μ ; 7, 48 μ ; 8, 50 μ ; total, .38 mm.

Male.—Similar to female, but smaller (length about 1.25 mm.). Prothorax five-sevenths as long as head.

Described from eight brachypterous specimens, one of which is a male, taken under bark on rotten stumps, at St. Joseph and Urbana, Illinois, by Mr. C. A. Hart and the writer.

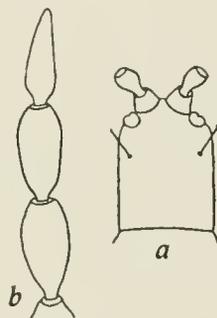


FIG. 4

Trichothrips angusticeps, female, brachypterous form. a, head; b, tip of right antenna, dorsal view. (J. D. H., del.)

Trichothrips longitubus sp. nov.

Female.—Length about 1.8 mm. General color dark blackish brown to black, pterothorax and basal abdominal segments usually paler; tibiæ, tarsi, and intermediate antennal segments bright lemon-yellow, the tibiæ clouded basally.

Head about as wide as long; cheeks slightly converging posteriorly; vertex elevated, slightly produced, and bearing the anterior ocellus at its extremity; lateral and dorsal surfaces noticeably transversely striate, sparsely and briefly spinose; postocular bristles blunt, almost half as long as head. Eyes slightly more than one-fourth as long as head, finely faceted. Ocelli anterior; anterior ocellus overhanging. Antennæ slightly less than twice as long as head; segments 1 and 2 nearly concolorous with body, 2 brownish yellow apically; 3–6 uniform bright lemon-yellow; 7 blackish yellow at base, shading to blackish brown at apex; 8 blackish brown; sense cones long, slender; segment 3 with one on outer apical surface; 4–6 each with one on either side of apex, and a small rudimentary one on dorsum. Mouth cone nearly reaching base of prosternum.

Prothorax two-thirds as long as head, and (including coxæ) about two and one-half times as wide as long; all spines present, blunt, excepting the pair at the posterior angles, which are pointed, and longer than the prothorax. Pterothorax broader than long, slightly wider than prothorax; sides arcuate, slightly converging posteriorly. Wings reaching base of tube; fore wings clouded at base, not narrowed at middle, and with the apical fringe on posterior margin double for about eight hairs. Legs slender; femora nearly concolorous with body, the middle and hind pairs paler basally; tibiæ lemon-yellow, clouded basally; tarsi lemon-yellow, unarmed.

Abdomen large, heavy; bristles long. Tube fully as long as head, tapering evenly from base to apex.

Measurements:—Length 1.84 mm.; head, length .25 mm., width .24 mm.; prothorax, length .16 mm., width (including coxæ) .40 mm.; pterothorax, width .44 mm.; abdomen, width .46 mm.; tube, length .26 mm., width at base .105 mm., at apex .050 mm. Antennæ: 1, 30 μ ; 2, 57 μ ; 3, 73 μ ; 4, 68 μ ; 5, 68 μ ; 6, 65 μ ; 7, 68 μ ; 8, 46 μ ; total, .48 mm.

Male.—Similar to female. Prothorax and fore femora not enlarged; fore tarsi unarmed.

Described from ten macropterous specimens (nine females and one male) taken in sweepings at Carbondale, Illinois, by Mr. C. A. Hart.

This species is easily distinguished from all other members of its genus by the peculiar antennal coloration and the long tube.

Trichothrips buffæ sp. nov. (Fig. 5).

Female.—Length about 1.9 mm. General color black; antennal segments 1–3, tarsi, and articulations of legs, usually yellowish brown.

Head nearly as wide as long, broadly rounded in front; cheeks slightly converging posteriorly; lateral and dorsal surfaces noticeably transversely striate, sparsely, briefly, and scarcely visibly spinose; postocular bristles blunt, slightly longer than eyes. Eyes almost one-third as long as head. Ocelli anterior; anterior ocellus scarcely overhanging. Antennæ slightly more than twice as long as head, faintly reticulate; segments 4–8 concolorous with body; 1 and 3 usually slightly paler, darkened laterally, the latter pale yellow at extreme base; 2 brownish yellow, darkened laterally and basally; sense cones long, slender; segment 3 with one on outer apical surface; 4–6 each with one on either side of apex and 5 and 6 each with a rudimentary additional one on dorsum; 7 with a long, sub-apical one on dorsum. Mouth cone long, attaining base of prosternum.

Prothorax about as long as head, and (including coxæ) slightly more than twice as wide as long; all spines present, blunt, the pair at the posterior angles longest. Pterothorax rectangular, slightly wider than prothorax, and about one and one-third times as wide as long. Wings short, attaining base of abdomen. Fore femora not enlarged; fore tarsi unarmed.

Abdomen large, heavy, 1.3 times as wide as prothorax, narrowing roundly from segment 6 to base of tube. Tube slightly shorter than head, tapering evenly from base to apex.

Measurements:—Total length 1.87 mm.; head, length .21 mm., width .20 mm.; prothorax, length .19 mm., width (including coxæ) .42 mm.; pterothorax, width .43 mm.; abdomen, width .54 mm.; tube, length .20 mm., width at base .094 mm., at apex .042 mm. Antennæ: 1, 30 μ ; 2, 56 μ ; 3, 64 μ ; 4, 63 μ ; 5, 62 μ ; 6, 63 μ ; 7, 62 μ ; 8, 42 μ ; total, .44 mm.

Male.—Similar to female, but smaller (length 1.5 mm.). Prothorax and fore femora not enlarged; fore tarsi unarmed.

Described from several brachypterous specimens of both sexes taken under bark on soft maple trees at Decatur, Homer, and Urbana, Illinois.

I name this species for Dr. Pietro Buffa, of the Royal University of Pisa, Italy.

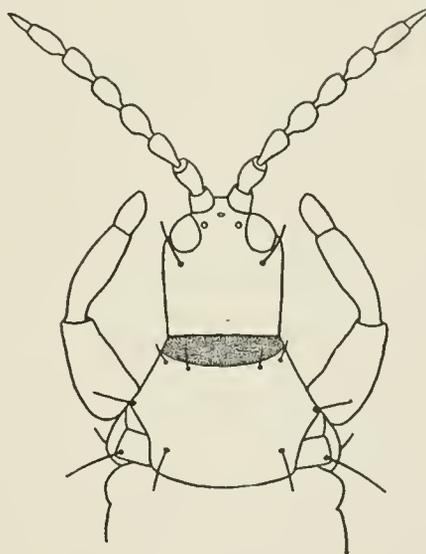


FIG. 5
Trichothrips buffæ, female, head and prothorax. (J. D. H., del.)

PLECTROTHRIPS, gen. nov.

(πληκτρον, spur; θριψ, thrips.)

Head slightly longer than wide; cheeks full, without spine-bearing warts; vertex elevated, transverse. Eyes moderately large. Ocelli present, anterior. Antennæ inserted beneath vertex, twice as long as head, eight-segmented; segments 3-6 provided each with two or three short, stout, roughened sense cones; segment 8 noticeably longer than segment 7, very slender, compressed, provided with a single terminal bristle. Mouth cone very small, only about one-fourth as long as prothorax, slightly wider than long, broadly rounded at apex; labrum blunt. Prothorax large, heavy, one and one-third times as long as head, with a prominent median groove; notum not attaining lateral margins; all spines wanting, excepting the pair at the posterior angles. Pterothorax large, lateral outline convex. Legs short, stout; fore tibiæ with a stout, obtuse tooth on inner margin of apex; middle and hind tibiæ with respectively one and two long, very stout, tibial spurs on inner lower margin of apex; anterior femora very large; fore tarsi with a very large, slightly curved, acute tooth. Wings present, not narrowed at middle. Male without scale at base of tube.

This genus resembles *Trichothrips* Uzel in general structure, and should probably follow it in a linear arrangement of the genera.

Plectrothrips antennatus sp. nov.

Female.—Length about 1.8 mm. General color blackish brown, fading to brownish yellow on abdomen; tube bright brownish orange.

Head six-sevenths as wide as long, truncate in front, widest behind eyes, and narrowed posteriorly; lateral and dorsal surfaces very faintly reticulate, sparsely spinose; postocular bristles slender, pointed, their bases situated near the lateral margins of head, and equidistant from posterior margins of eyes and anterior border of prothorax. Eyes finely faceted, moderately large. Ocelli placed well forward; anterior ocellus slightly overhanging; posterior ocelli opposite anterior third of eyes and contiguous to them. Antennæ eight-segmented; segments 2-8 subequal in length; 8 compressed, fusiform-pedicellate as seen from above, and with a single terminal bristle; 3, 5, and 6 provided each with two short, very stout, roughened sense cones, one on each side of apex; 4 with an additional similar cone on the outer apical surface; circular sense-area on segment 2 situated nearer base than usual; antennæ concolorous with body, excepting segment 3, which is orange at base.

Prothorax large, one and one-third times as long as head, and (including coxæ) two-thirds as long as wide; all the usual spines lacking, save a single long pointed one at each posterior angle. Pterothorax slightly broader than long, and a little wider than prothorax; sides rather prominently arcuate. Wings reaching about to base of tube,

veinless; fore wings with an apical double fringe of eight hairs, and with the basal scale black. Femora concolorous with head and thorax; tibiæ and tarsi yellowish brown.

Abdomen large; sides sub-parallel as far as segment 6, thence curving roundly to base of tube. Tube about three-fifths as long as head, abruptly narrowed at apex, and slightly narrowed at middle.

Measurements:—Total length 1.8 mm. (1.71–1.89 mm.); head, length .32 mm., width .19 mm.; prothorax, length .27 mm., width (including coxæ) .40 mm.; pterothorax, width .41 mm.; abdomen, width .45 mm.; tube, length .13 mm., width at base .082 mm., at apex .041 mm. Antennæ: 1, 41 μ ; 2, 52 μ ; 3, 57 μ ; 4, 55 μ ; 5, 54 μ ; 6, 54 μ ; 7, 49 μ ; 8, 54 μ ; total, .42 mm.

Male.—Slightly smaller than female (total length about 1.4 mm.). Abdomen more slender, tapering more gradually toward apex.

Described from two females and five males, taken by the writer in June on a window of a wood-shed, Urbana, Illinois.

This species could not possibly be confused with any other described one, distinguished as it is by characters of generic significance.

NEOTHRIPS gen. nov. (Fig. 6).

(*νέος*, new; *θρῖψ*, thrips.)

Head almost one and one-half times as long as wide; cheeks parallel, sparsely spinose; vertex elevated, narrowed anteriorly, not overhanging. Antennæ stout, eight-segmented, about one and three-fourths times as long as head, inserted beneath vertex; segments 7 and 8 distinct, but united into a heavy, compact club, and with a straight, comb-like, ventral row of either nine or ten bristles; segments 2 and 7 slightly longer than the intermediate ones, which are almost exactly equal in length. Mouth cone long, slender, acute, surpassing base of prosternum; labrum pointed. Prothorax large, trapezoidal, armed with five pairs of bristles. Legs short, stout; fore tarsi armed with an acute tooth which in the male is larger and slightly curved. Male without scale at base of tube.

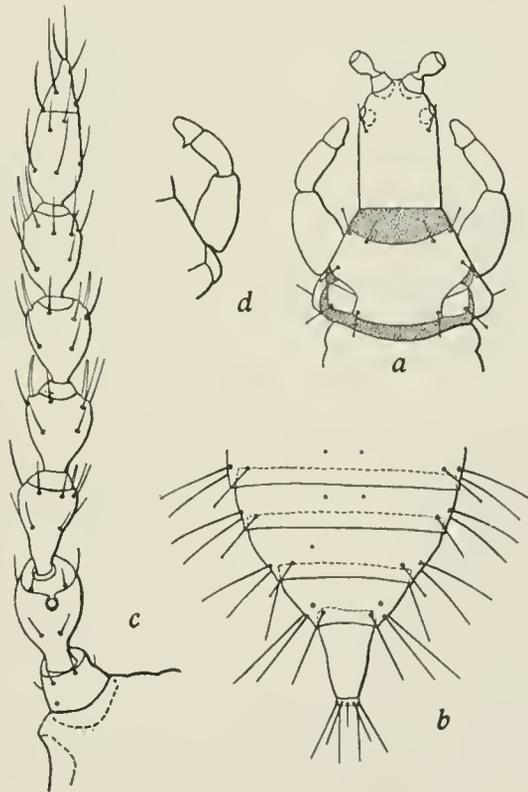


FIG. 6
Neothrips corticis. a, head and prothorax, female; b, tip of abdomen, female; c, right antenna, dorsal view, female; d, right fore leg, male. (J. D. H., del.)

This genus is perhaps more closely related to *Allothrips* gen. nov. than to any other, standing between it and *Plectrothrips* gen. nov.

Neothrips corticis sp. nov. (Fig. 6).

Female.—Length about 1.34 mm. Color nearly uniform light yellowish brown, with considerable irregular reddish brown hypodermal pigmentation; tube bright orange-brown, darker at middle.

Eyes very small, consisting of a few large, lateral facets; ocelli wanting. Antennæ nearly concolorous with body, segments 1 and 2 often slightly darkened laterally; sense-cones long, slender, segments 3 and 6 each with one and segments 4 and 5 each with two; three bristles on ventral surface of segment 7.

Pterothorax about as wide as prothorax, its dorsum two-thirds as long as wide. Wings rudimentary. Tarsi and apices of tibiæ yellow; femora and basal three-fourths of tibiæ nearly concolorous with body, lighter along inner surface.

Abdomen large, heavy, about one and one-half times as wide as prothorax; sides sub-parallel as far as segment 6, and then converging abruptly to base of tube. Tube .7 as long as head, and about 1.4 times as long as its basal width; abruptly narrowed at apex and slightly narrowed at middle, where it is more heavily chitinized.

Measurements:—Total length about 1.34 mm.; head, length .20 mm., width .14 mm.; prothorax, length (excluding non-chitinous portions) .15 mm., width (including coxæ) .29 mm.; pterothorax, width .28 mm.; abdomen, width .42 mm.; tube, length .14 mm., width at base, .095 mm., at apex, .036 mm. Antennæ: 1, 31 μ ; 2, 54 μ ; 3, 46 μ ; 4, 44 μ ; 5, 44 μ ; 6, 45 μ ; 7, 50 μ ; 8, 29 μ ; total, .34 mm.

Male.—Slightly smaller than female (length about 1.2 mm.). Four bristles on ventral surface of segment 7. Abdomen more slender (about one and one-fifth times as wide as prothorax), tapering evenly from segment 7 to base of tube.

Described from several specimens of both sexes taken under bark at Urbana and Hillery, Illinois, in winter.

ALLOTHRIPS gen. nov. (Fig. 7).

(ἄλλος, of another kind; θρίψ, thrips.)

Head large, about as wide as long; cheeks full, sparsely spinose; vertex elevated between eyes, and sloping abruptly to insertion of antennæ. Antennæ stout, seven-segmented, less than 1.6 times as long as head, inserted beneath vertex; segments 3–6 subequal in length, very slightly longer than wide; 2 and 7 longer, the latter with a slightly arcuate row of four bristles on its ventral surface.

Mouth cone large, broadly rounded, reaching base of prosternum; labrum blunt. Prothorax short, about two-thirds as long as head, and armed with six pairs of knobbed bristles. Legs short, stout; fore tarsi unarmed.

This genus is the only one of its family (excepting *Kladothrips* Froggatt) which has seven-segmented antennæ. The reduction in the number of antennal segments is a result of the union of the two apical ones, and the whole antenna is an exaggeration of the type indicated by *Neothrips* gen. nov., in which a separating suture is still distinctly visible.

Allothrips megacephalus
sp. nov. (Fig. 7).

Female.—Length about 1.3 mm.

Color dark blackish brown, with maroon-colored hypodermal pigmentation; tarsi, tube, and antennal segments 1 and 2 slightly lighter. Abdomen broad, about one and one-half times as wide as prothorax.

Forma aptera.—Eyes very small, consisting of a few large lateral facets. Ocelli lacking. Pterothorax about as long as prothorax; mesonotum transverse, sub-rectangular, with six equidistant knobbed bristles along its posterior border, and with an additional similar pair near the posterior angles.

Measurements:—Total length 1.31 mm.; head, length .21 mm., width .20 mm.; prothorax, length .14 mm., width (including coxæ) .30 mm.; pterothorax, width .30 mm.; abdomen, width .45 mm.; tube, length .12 mm., width at base .082 mm., at apex .044 mm. Antennæ: 1, 38 μ ; 2, 57 μ ; 3, 51 μ ; 4, 41 μ ; 5, 44 μ ; 6, 44 μ ; 7, 67 μ ; total, .34 mm.

Forma brachyptera.—Eyes moderately large, coarsely faceted. Ocelli present; a pair of long knobbed bristles behind the posterior ones. Pterothorax about twice as long as prothorax; mesonotum sub-pentagonal, with two pairs of knobbed bristles along its posterior border. Wings attaining base of abdomen.

Described from several females, one of them brachypterous, taken under bark on various trees at Urbana and Springfield, Illinois, in winter.

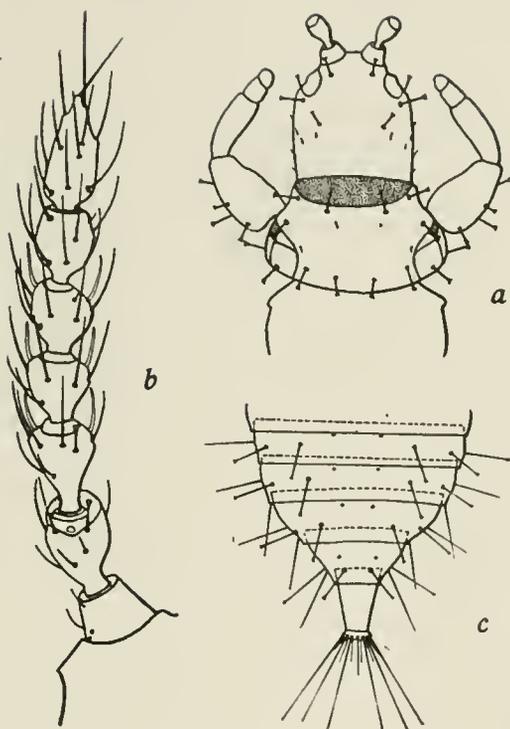


FIG. 7

Allothrips megacephalus, female, apterous form.
a, head and prothorax; b, right antenna, dorsal view; c, tip of abdomen. (J. D. H., del.)

Genus ACANTHOTHrips Uzel, 1895.

This genus is represented in Illinois by two species, which may readily be distinguished from each other and from their previously described congeners by means of the following key.

- I. Inner-surface of fore femora with a single sub-apical tooth.
 - a. Cheeks with prominent spine-bearing warts. No latero-dorsal white stripe.
 - b. Wings of both pairs with a very prominent blackish longitudinal vein reaching nearly to tip
A. magnafemoralis Hinds.*
 - bb. Wings without conspicuous longitudinal vein
A. doaneii Moulton, *A. nodicornis* (Reuter).
 - aa. Cheeks without spine-bearing warts. A latero-dorsal white stripe.....*A. albivittatus* sp. nov.
- II. Inner surface of fore femora with a "long, sharp, and slightly curved" tooth near base.....*A. sanguineus* Bagnall.

Acanthothrips albivittatus sp. nov.

Female.—Length about 2.1 mm. Dorsal surface roughened with numerous microscopic tubercles; ventral surface smooth. General color (reflected light) dull mahogany brown, with a narrow latero-dorsal white stripe which originates at the posterior margin of the eye and terminates in a small spot at base of segment 8 of abdomen; on the head the stripe is slightly narrower than the basal antennal segment; on the prothorax it broadens posteriorly and includes an irregular reddish spot; at the anterior mesothoracic margin it is broken up into two subequal triangular areas, from which it continues as a much narrower line to the base of the abdomen; it is lacking on the first abdominal segment, and extends uninterruptedly from the second to the eighth. General color (transmitted light) yellowish brown, with maroon-colored hypodermal pigmentation; legs blackish brown, non-pigmented, shaded laterally with black; tarsi and inner surface of fore tibiæ paler; antennæ uniform black.

Head 1.4 times as long as wide; cheeks converging abruptly to eyes and to base of head; dorsal and lateral surfaces faintly reticulate, scarcely visibly spinose and not roughened by spine-bearing tubercles; postocular bristles long, pointed†. Eyes large, contained in length of head two and two-thirds times, and wider than the interval between them. Ocelli sub-approximate, opposite center of eyes. Antennæ about one and one-fourth times as long as head; segments 3–6 urn-shaped; 7 and 8 closely united, the latter conical; sense cones long, slender; segments 3, 5, and 6 each with one on either side of apex; 4 with an additional

*I have specimens of this species taken at Muncie and Urbana, Illinois.

†These bristles are wanting in *A. magnafemoralis* Hinds.

outer one; 7 with a sub-apical dorsal one. Mouth cone pointed, attaining base of prosternum.

Prothorax two-thirds as long as head, and (including coxæ) slightly less than twice as wide as long; all usual spines present, blunt. Pterothorax scarcely wider than prothorax; sides sub-parallel, slightly concave. Wings long, without prominent longitudinal vein. Fore femora five-eighths as wide as length of prothorax, and with a sub-apical acute tooth; fore tarsi armed with a stout tooth.

Abdomen about as wide as prothorax. Tube about .7 as long as head; bristles at tip shorter than head.

Measurements:—Total length 2.1 mm.; head, length .36 mm., width .25 mm.; prothorax, length .24 mm., width (including coxæ) .46 mm.; pterothorax, width .46 mm.; abdomen, width .47 mm.; tube, length .25 mm., width at base .092 mm., at apex .059 mm. Antennæ: 1, 45 μ ; 2, 70 μ ; 3, 118 μ ; 4, 112 μ ; 5, 100 μ ; 6, 73 μ ; 7, 67 μ ; 8, 38 μ ; total, .62 mm.

Described from one female taken on the trunk of a Carolina poplar at Bloomington, Illinois, July 10, by Hugh Glasgow.

Genus LIOTHRIPS Uzel, 1895.

Liothrips (?) *ocellatus* sp. nov.

Female.—Length about 2.2 mm. General color black, excepting tarsi and articulations of legs, which are slightly paler, and antennal segments 3–5, which are at least partly yellow.

Head 1.15 times as long as wide, widest just behind eyes, narrowing evenly to base, where it is .84 of the postocular width; vertex elevated between eyes, slightly overreaching insertion of antennæ, and bearing the anterior ocellus at its extremity; lateral and dorsal surfaces transversely striate, sparsely, briefly, and scarcely visibly spinose; postocular bristles blunt, three-fifths as long as eyes. Eyes large, one-third as long as head. Ocelli anterior; posterior ocelli opposite anterior third of eyes: anterior ocellus overhanging. Antennæ eight-segmented, twice as long as head; segments 1 and 2 concolorous with body, excepting apex of 2, which is paler apically; 3 uniform bright lemon-yellow; 4 yellow, dusky at base and apex; 5 blackish brown, its second and third fifths brownish yellow; segments 6–8 concolorous with body.*

Prothorax two-thirds as long as head, and (including coxæ) 2.4 times as wide as long; all spines present, moderately long, blunt, the two pairs near the posterior angles longest. Pterothorax slightly wider than prothorax, about as long as broad, slightly narrower posteriorly; sides convex, gently arcuate. Wings present, reaching about to base of tube; fore wings brownish at base, not narrowed at middle, with three sub-

*I have not described the position of the sense-cones, as several of these are apparently lacking.

basal brownish spines on anterior margin, and with the apical fringe on the posterior margin double for fourteen hairs; posterior wings with a weak median vein reaching about to middle. Legs stout, not long; fore tarsi unarmed.

Abdomen large, slightly wider than pterothorax, tapering roundly from segment 6 to base of tube. Tube about .8 as long as head, tapering evenly from base to apex.

Measurements:—Total length 2.21 mm.; head, length .24 mm., width .21 mm.; prothorax, length .16 mm., width (including coxæ) .38 mm.; pterothorax, width .42 mm.; abdomen, width .46 mm.; tube length .20 mm., width at base .092 mm., at apex .042 mm. Antennæ 1, 36 μ ; 2, 62 μ ; 3, 81 μ ; 4, 81 μ ; 5, 73 μ ; 6, 67 μ ; 7, 62 μ ; 8, 35 μ ; total .50 mm.

Described from a single female taken at Hillery, Illinois, in moss, by C. A. Hart and James Zetek.

Genus CRYPTOTHRIPS Uzel, 1895.

Cryptothrips carbonarius sp. nov. (Fig. 8).

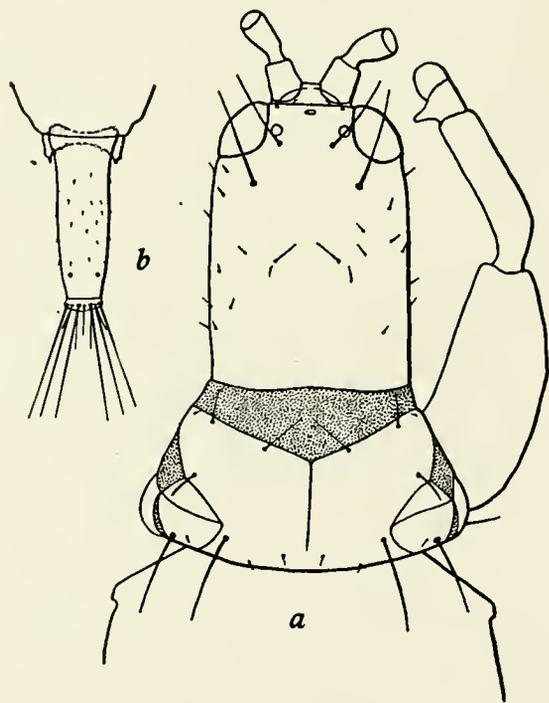


FIG. 8

Cryptothrips carbonarius, male. a, head and prothorax; b, tube. (J. D. H., del.)

Male.—Length about 2.22 mm. (abdominal segments somewhat telescoped). Color uniform coal-black, excepting tarsi and articulations of legs, which are dark blackish brown.

Head rectangular, about one and one-half times as long as wide, sides parallel; lateral and dorsal surfaces faintly reticulate, set with a number of short spines and a longer pair at middle of dorsum; vertex transverse; postocular spines long, slender, pointed; spines just behind ocelli about equal in length to the postocular. Eyes moderately large, not protruding, occupying the anterior angles of head. Ocelli moderately large, their diameter about three times that of facets of eyes; anterior ocellus not overhanging; posterior ocelli opposite centers of eyes and almost touching their inner margins. Antennæ eight-segmented, 1.4 times as long as head, uniform black in color; segments 3–6 sub-clavate; 7 fusiform,

pedicellate; 8 fusiform. Mouth cone somewhat wider than long, apex broadly rounded; tip of labrum just attaining tip of labium.

Prothorax about three-fifths as long as width of head, and (including coxæ) about three times as wide as long; usual spines all present, the two pairs near the posterior angles much the longest; anterior marginals moderately long. Pterothorax about 1.4 times as wide as long, somewhat broader than prothorax; sides nearly straight, slightly converging posteriorly; anterior corners scarcely projecting beyond the general outline. Wings present.* Legs nearly concolorous with the body; anterior tarsi armed with a stout tooth. Abdomen moderately stout, about as broad as pterothorax, widest at about segment 3, from which it tapers evenly to segment 6, and then rather abruptly to base of tube. Tube four-sevenths as long as head, widest at base, constricted just before apex; intermediate portion parallel-sided, exactly three-fourths the diameter of base; surface not spinose.

Measurements:—Total length 2.22 mm.; head, length .46 mm., width .30 mm.; prothorax, length .17 mm., width (including coxæ) .49 mm.; pterothorax, width .52 mm.; abdomen, width .62 mm.; tube, length .27 mm., width at base .104 mm., at apex .054 mm. Antennæ: 1, 61 μ ; 2, 78 μ ; 3, 123 μ ; 4, 106 μ ; 5, 97 μ ; 6, 81 μ ; 7, 57 μ ; 8, 47 μ ; total .65 mm.

Described from a single macropterous male, taken at Pulaski, Ill., May 21, 1907, in sweepings from grass and weeds, by Mr. C. A. Hart.

Genus IDOLOTHRIPS Haliday, 1852.

Idolothrips flavipes sp. nov. (Fig. 9).

Female.—Length about 3.1 mm. Color of body coal black; all tibiæ and tarsi, and at least the basal portion of antennal segments 3 to 6, bright yellow.

Head very slightly more than twice as long as wide, narrower just behind eyes and at base, widest across eyes; finely striated and set with several stout spines; vertex conical, produced, apex overhanging insertion of antennæ; anterior portion of head provided with a pair of prominent bristles in addition to the postocular, situated on either side of the prolonged vertex. Eyes large, finely faceted, prominent, bulging. Ocelli small, their diameter about equal to that of facets of eyes; anterior ocellus occupying extreme vertex; posterior ocelli slightly in front of centers of eyes, and slightly removed from their inner margins. Antennæ eight-segmented, slender, about 1.4 times as long as head; seg-

*The only specimen which I have of this species has been cleared in potassium hydroxide, and the wings, as a consequence, are unfit for study.

ments 3–5 clavate; 6–8 fusiform; segments 1, 2, 7, 8, apical half of 6, and apical fourth of 5, dark blackish brown; remainder of antenna lemon-yellow, excepting apex of 4, which is clouded with brown. Mouth cone about as long as its width at base, broadly rounded; tip of labrum just attaining tip of labium.

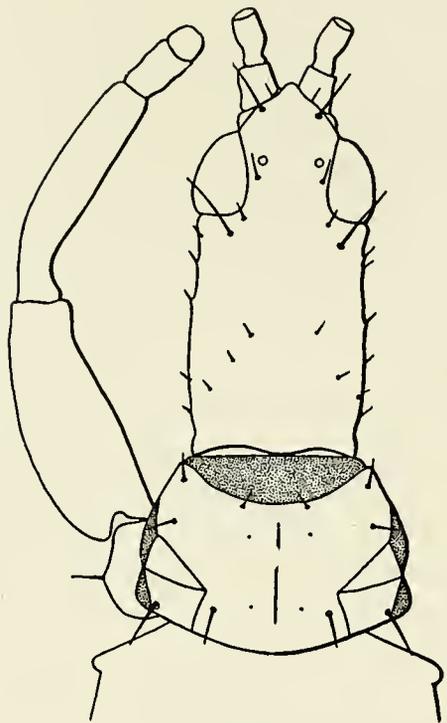


FIG. 9
Idolothrips flavipes, female, head and prothorax. (J. D. H., del.)

Prothorax almost as long as width of head, and (including coxæ) slightly more than twice as wide as long; surface finely reticulate; usual spines all present, the two pairs near the posterior angles somewhat longer than the others. Pterothorax sub-rectangular, about two-thirds as long as wide, and slightly broader than prothorax; anterior corners projecting slightly beyond the lateral margins. Wings represented by small pads, which are about equal in length to the head, and four times as long as broad. All tibiae and tarsi bright yellow, the former often clouded with brown at base; remainder of legs concolorous with body; anterior tarsi unarmed.

Abdomen broad, about one and one half times as wide as pterothorax, widest at segment 4, from which it tapers evenly to tube, giving the abdomen a lanceolate form. Tube almost as long as head, tapering evenly to middle, and then some what more abruptly to apex; surface not spinose.

Measurements:—Total length 2.82–3.34 mm.; head, length .53 mm., width .25 mm.; prothorax, length .21 mm., width (including coxæ) .46 mm.; pterothorax, width .48 mm.; abdomen, width .74 mm.; tube, length .47 mm., width at base .114 mm., at apex .052 mm. Antennæ: 1, 48 μ ; 2, 70 μ ; 3, 140 μ ; 4, 120 μ ; 5, 112 μ ; 6, 92 μ ; 7, 67 μ ; 8, 70 μ ; total, .72 mm.

Male.—Smaller than female (total length 2.58–2.97 mm.). Anterior femora no stouter than in female; fore tibiae provided with a stout tooth. Abdomen slender, tapering evenly from almost the very base.

Described from several males and females, all from Illinois, as follows: Dubois, Apr. 28 (C. A. Hart and L. M. Smith); Homer, Mar. 30, Apr. 17 (C. A. Hart, J. D. H.); "N. Ill." (A. Bolter). All specimens were taken among fallen oak leaves.

SYSTEMATIC LIST OF SPECIES.

| | | |
|-----|--|-----|
| 1. | <i>Heterothrips arisæmæ</i> gen. et sp. nov..... | 362 |
| 2. | <i>Sericothrips pulchellus</i> sp. nov..... | 363 |
| 3. | <i>Zygothrips longiceps</i> sp. nov..... | 364 |
| 4. | <i>Lissothrips muscorum</i> gen. et sp. nov..... | 365 |
| 5. | <i>Trichothrips americanus</i> sp. nov..... | 366 |
| 6. | “ <i>angusticeps</i> sp. nov..... | 367 |
| 7. | “ <i>longitubus</i> sp. nov..... | 368 |
| 8. | “ <i>buffæ</i> sp. nov..... | 369 |
| 9. | <i>Plectrothrips antennatus</i> gen. et sp. nov..... | 370 |
| 10. | <i>Neothrips corticis</i> gen. et sp. nov..... | 372 |
| 11. | <i>Allothrips megacephalus</i> gen. et sp. nov..... | 373 |
| 12. | <i>Acanthothrips albivittatus</i> sp. nov..... | 374 |
| 13. | <i>Liothrips</i> (?) <i>ocellatus</i> sp. nov..... | 375 |
| 14. | <i>Cryptothrips carbonarius</i> sp. nov..... | 376 |
| 15. | <i>Idolothrips flavipes</i> sp. nov..... | 377 |

Issued August 22, 1908.