

## DROSOPHILIDÆ WITH PARASITIC LARVÆ

(Diptera)

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The two species of Drosophilidæ herein described have been reared from larvæ feeding upon other insects. One of them, *Gitonides perspicax*, has been reared no less than four times, independently, from larvæ found feeding upon mealy bugs (*Pseudococcus*). The second form, *Titanochæta ichneumon*, was reared from larvæ feeding upon spider's eggs. The form preying upon *Pseudococcus* proves to be closely related to the genera *Gitona* and *Acletoxenus*, which, it appears, have larvæ with similar habits. The European *Acletoxenus formosus* has been reared by Walker from larvæ preying upon *Aleurodes phillyræ* Hal. on *Cratægus* and later by von Frauenfeld from the same host as well as from *Aleurodes jelineki* Frf. on *Viburnum*.<sup>1</sup> *Gitona distigma* of Europe, according to Kaltenbach, has been reared by Loew, and also by Scholz, from flower-heads of *Sonchus arvensis*.<sup>2</sup> As plant lice are known to occur in large numbers on the upper part of this plant (vide Kaltenbach, p. 397), there is every reason to believe that the larvæ of *Gitona* prey upon these. In *Gitona*, *Gitonides*, and *Acletoxenus* we have, then, three closely related genera with similar larval habits. The second new form, *Titanochæta*, is remarkable for the strong development of its macrochætæ and shows no close relationship with the three genera above discussed.

### **Gitonides**, new genus.

Frons about one-third the width of head. Postvertical bristles convergent; three pairs of orbital bristles, inserted close to eyes, the anterior pair proclinate; ocellar bristles very stout, equaling orbital bristles in size, proclinate; inner vertical bristles strongly convergent, outer verticals divergent. Face not distinctly keeled, the oral margin not produced; cheeks rather broad, with a row of small bristles; vibrissæ well developed, strongly differentiated. Eyes large, naked. Antennæ rather stout, the third joint broadly leaf-like; arista long, microscopically ciliate. Thorax moderately convex; prescutellar bristles present; one pair of strong dorsocentrals, a second weak pair sometimes present; notopleural bristles at

<sup>1</sup> Walker. List Homopt. Ins. Brit. Mus., iv (1852), p. 1093, and *Insecta Britannica*, Diptera, vol. 2 (1853), p. 243 (as *Agromyza ornata*); v. Frauenfeld. Verh. zool.-bot. Ges. Wien, vol. 18, p. 150 (1868).

<sup>2</sup> Pflanzenzeide, 1874, p. 396.

equal height; mesosternum with two strong bristles nearly at the same level. Abdomen depressed, broad basally, tapered toward apex. Wing rather broad, the tip rounded; costal vein evanescent beyond the end of the third vein, very finely and closely spinulate; subcostal vein basally distinct, distally indistinct and convergent with first vein; last section of fourth vein nearly parallel with third; posterior cross-vein slightly longer than last section of fifth vein, more than its own length beyond anterior cross-vein; anal cell closed. Legs slender; middle tibiæ with short and stout apical spur.

Type of genus, *Gitonides perspicax*, new species.

*Gitonides* is closely related to *Gitona* Meigen and *Acletoxenus* Frauentfeld. *Gitona* has much broader cheeks, the face distinctly keeled and the clypeus large and strongly projecting. *Acletoxenus* differs by the much narrower frons, the absence of ocellar bristles, the cheeks not visible in lateral view, and the costal vein distinctly developed to apex of fourth vein.

### ***Gitonides perspicax*, new species.**

Head and thorax gray pruinose with a slight brownish tinge. Abdomen banded black and whitish. Bristles and hairs black. Legs yellowish. Wings hyaline.

Female: Frons broad, very nearly one-third the width of the head, its sides straight and nearly parallel, brown, subpruinose; orbits narrow, pale gray pruinose; ocellar triangle small, terminating shortly beyond anterior ocellus, pale gray pruinose; orbital bristles coarse and long, inserted close to eye-margin within dark brown spots; ocellar bristles very large and long, proclinate and divergent; anterior half of frons with scattered small black hairs; on orbits, between orbital bristles, one or two setulæ; a double row of about nine black setulæ on frontal triangle, from vertex to anterior ocellus. Eyes large, somewhat higher than broad. Face short and broad, white pruinose, faintly keeled above, the oral margin not produced. Antennæ rather short, the first and second joints ochraceous, pruinose, with many black setulæ, the second with a single dorsal bristle; third joint light brown, compressed, rounded at tip; arista slender, long, microscopically ciliate, pale at base, black beyond. Mesonotum gray pruinose, with a few irregularly disposed, diffuse brown blotches, clothed with numerous black setulæ inserted in dark punctures, rather evenly disposed but not forming distinct rows, sparser on extreme margins. Scutel-

lum gray, irregularly mottled with brown, two pairs of strong marginal bristles, the apical pair cruciate. Pleuræ pruinose pale gray, with two incomplete, transverse, brownish black stripes, one beginning just below the humeri, the other crossing the middle of the mesopleuræ. Abdomen dorsally with the second segment gray pruinose, a blackish spot medianly and large ones basally toward sides; third, fourth, and fifth segments dull blackish, with broad pale gray pruinose apical and lateral margins, sixth and seventh segments mostly pale gray; surface of segments with coarse and rather sparse, evenly distributed black hairs, a submarginal row on fourth segment and a marginal row on fifth distinctly coarser and longer; venter pale. Legs pale ochraceous; middle and hind pairs with a dark spot on the femora ventrally close to apex, the tibiæ with a dark ring near base. Wings hyaline tinged with gray, the veins brown; anterior cross-vein well beyond tip of first vein; posterior cross-vein weakly sinuate, placed well outwardly, the last section of the fourth vein about one-third longer than the penultimate; third vein gently arcuate beyond the cross-vein. Halteres dark ochraceous.

Length: Body, about 3.5 mm.; wing, 3 mm.

Honolulu, Hawaii, July, 1907, reared from mealy bugs (*Pseudococcus*) on sugar cane (Otto H. Swezey) and from *Pseudococcus* common on shrubs and trees, sent by Wm. Weinrich, Jr., in 1902 (adults issued August 28, 1902, Bureau of Entomology); Manila, Philippine Islands, reared from larvæ feeding upon *Pseudococcus* (G. Compere); Philippine Islands, reared from *Pseudococcus* (California State Insectary).

Type, Cat. No. 19070, U. S. Nat. Mus.

This species strongly suggests in its general appearance *Drosophila repleta*. It appears to be widely distributed in the Orient. A series of poorly preserved specimens, collected by Prof. H. Maxwell-Lefroy at Pusa, India, is before me. In this species the male has a coarse serrate comb on the first three joints of the hind tarsi. It would also seem that the absence of the second weak pair of dorsocentral bristles is a peculiarity of the male, but more material is needed to determine this point.

### **Titanochæta**, new genus.

Frons over one-third the width of head. Postvertical bristles long, cruciate; three pairs of orbital bristles, inserted near eye-margins, the anterior pair stout and proclinate, the median pair small and reclinate, the posterior pair very large, reclinate and situated about at middle of frons, behind it two small bristles; ocellar bristles very long and stout, procli-

nate; inner verticals very long and stout, erect, somewhat convergent; outer verticals stout, divergent; vibrissæ long and distinct. Eyes hairy. Antennæ short and stout; arista rather coarse, with five or six short dorsal rays, none ventrally. Notopleural bristles at equal height; prescutellar bristles absent; two pairs of very large dorsocentrals; mesosternum with two bristles, the one behind the middle long and stout, the other small and situated near upper margin. Wings broad and rounded; costal vein reaching to end of fourth vein; subcostal vein distinct basally, indistinct distally and convergent with the first vein; third and fourth veins subparallel, very slightly converging toward wing-tip; posterior cross-vein remote from wing-margin, shorter than last section of fifth vein; anal cell closed, the anal vein present. Legs with preapical bristle on front and hind tibiæ; middle tibiæ with apical and preapical bristle.

Type of genus, *Titanochæta ichneumon*, new species.

### **Titanochæta ichneumon**, new species.

Thorax and head light gray pruinose; frons above antennæ, face, basal portion of abdomen, coxæ, and legs pale yellow; bristles and hairs black.

Male: Frons over one-third the width of head, converging somewhat toward antennæ; ocellar triangle and orbits rather weakly differentiated, the former moderately large, not reaching halfway to antennæ, detached nearly to posterior margin; anteriorly the entire frons is pale yellow, posteriorly the frontal stripe becomes more grayish, while the orbits and ocellar triangle are gray pruinose; some scattered fine hairs on anterior third of frontal stripe. Eyes bright brown, with irregularly scattered, minute black dots and with stiff white hairs. Face yellowish, white-pruinose at margins, flattened, very weakly carinate, epistome shallowly emarginate; vibrissæ very large and stout, followed by a few bristles on the cheeks and a differentiated buccal bristle; cheeks rather narrow. Proboscis very short, fleshy. Antennæ short and stout, reaching slightly over halfway to oral margin, pale yellow, the third joint darker and dorsally infuscated; second joint with black hairs and a long black bristle; third joint thick, bluntly conical, with black arista bearing five well separated dorsal rays. Thorax convex, not as wide as the head and narrowed posteriorly, entirely pale gray pruinose; mesonotum with rather coarse and sparse, evenly distributed black hairs not forming regular series. Scutellum large, rather elongate, with rounded margin; two pairs of large

marginal bristles, the apical pair cruciate. Abdomen subcylindrical, the first two segments yellow, darkened centrally; third segment blackish above, with diffuse yellowish spot at apical angles, the following segments entirely black; vestiture of sparse, evenly distributed, fine black hairs; venter yellow. Wings hyaline, rather broad, rounded at apex; veins brown; costal margin finely and densely spinulate. Legs slender, pale yellow; anterior tibiae with moderate preapical bristle; middle tibiae with long apical and preapical bristles; hind tibiae broadened, with long delicate bristle well removed from apex.

Length: Body, about 2 mm.; wing, 1.8 mm.

Mountain View, Hawaii, reared from spider's eggs, in egg-sacks on sugar cane, August 22, 1912 (Otto H. Swezey).

Type, Cat. No. 19071, U. S. Nat. Mus.

This insect, by its pale blue-gray pruinose coloration, reminds one of the agromyzid genus *Leucopis*. The extraordinary development of the macrochætæ of the head and thorax gives this form a very anomalous appearance.