

Head much broader than long, with straight sides, rounded posterior corners and straight posterior border. Clypeus broadly rounded in front. Mandibles slender, curved; the tip thick. Eyes large and flat, located in front near sides at about half their length from base of clypeus. Ocelli absent. Antennæ 12-jointed, short and thick, the first joint swollen, as long as the second and third together; second joint shorter than third, joints 3-11 subequal, cylindrical, longer than broad; apical joint about twice as long as penultimate. Head and antennæ shining, minutely punctate, the vertex with four distinct fovæ arranged trapezoidally. Prothorax transverse, narrowed in front to form a short, thick neck, sides slightly rounded; posterior border concave. Mesothorax transverse, flat above; the pleuræ extended into broad, vertical lamellæ, which incline slightly backward toward the base. Metanotum narrower than mesonotum, longer than broad, widest behind; depressed at middle, the posterior border acutely carinate; posterior surface flat. Abdomen with a short thick petiole; a little longer than head and thorax, sub-cylindrical. Legs stout, the femora enlarged, flattened, middle tibiæ with five strong spines on outer edge. The entire body with very sparse scattered erect, black hairs, tarsal joints spinose at apex.

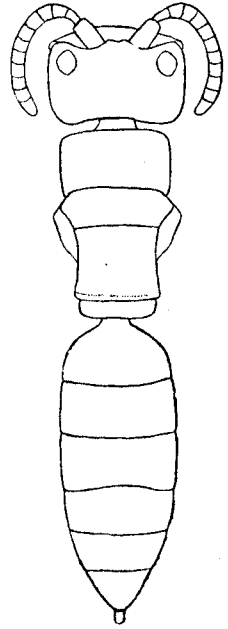


Fig. 4.

Brusiella formicaria
gen. & sp. nov. ♀

Described from a single specimen taken with *Formica microgyna rasilis* var. *nahua* Wheeler at Guerrero Mill.

Family PTEROMALIDÆ.

Pheidolo xenus wheeleri Ashmead.

A single specimen of this wingless parasite was found with *Pheidole ceres* Wheeler var. *tepaneca* Wheeler at Guerrero Mill. Wheeler, who discovered the species in nests of *Pheidole instabilis* in Texas, considered that it is entoparasitic, either on the ants or their brood.

Family EUCHARIDÆ.

Orasema tolteca sp. nov.

Female: Length 4 mm. Head triangular, slightly longer than broad, with convex occipital border and nearly straight sides. Mandibles bidentate, the teeth long and acuminate; front flat; clypeus and frontal area separated from the remainder of front by a deep impression. Eyes oval, large, very convex; ocelli large and

convex, arranged in a broad triangle. Antennæ short and stout, the funiculus extending barely to occipital border; pedicel slightly longer than thick; funicular joints subequal, cylindrical, one and one-third times as long as broad; apical joint conical, one and one-half times the length of penultimate. Thorax trilobed, lobes convex. Scutellum rounded behind, with a strong transverse impression before the posterior border. Metanotum abruptly sloping, with strong lateral sulci. Petiole from side more than twice as long as thick.

Head shining, finely densely punctate, the temples finely shagreened; flagellum coarsely punctate and opaque. Thorax and petiole coarsely, densely, rugosely punctate; parapsides finely, transversely aciculate; gaster smooth and shining. Scape brown at base, flagellum black, tips of femora, the tibiæ and tarsi ferruginous; rest of body metallic green. Wings slightly infuscated, veins and the distinct stigma brown.

Male: Similar to the female. The thorax is bronze in color, and the petiole proportionally thicker.

One male and two females, together with numerous pupæ were found at San Miguel in nests of *Pheidole vasleti* var. *acohlna*. The pupæ were lying among the brood of the ants, and were always quickly removed by the worker ants when the nest was uncovered.

This species is much larger than *O. occidentalis* Ashmead, from Southern California, but is otherwise very similar. *O. stramineipes* Cameron, from Panama differs in the form of the metanotum which has: "a central area bordered by keels which sharply converge at the top." This is entirely different to the structure of the metanotum in *tolteca*.

THE BACTERIAL DISEASES OF CATERPILLARS.¹

By R. W. GLASER.

There seems to be a considerable amount of collateral evidence that caterpillars are subject to bacterial diseases, but I am not familiar with a single case where this has been conclusively proved. Such a state of affairs can be explained in part by the fact that much of the work on caterpillar diseases was done before the introduction of Koch's technical methods in 1880 or shortly after, before these methods had been fully perfected. Within compara-

¹Contribution from the Bureau of Entomology in coöperation with the Bussey Institution of Harvard University. (Bussey Institution, No. 83.)