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NEW NEARCTIC SPECIES OF THE GENUS *ERIOPTERA*
MEIGEN (TIPULIDÆ, DIPTERA).

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During the past few years, several new species of the genus *Erioptera* Meigen have come to hand. Some of these have been characterized in other papers, but a few still remain undescribed. Most of these belong to the group of *E. chlorophylla* O. S., a small assemblage of species whose limits of distribution are still not well understood. I am greatly indebted to Mr. Nathan Banks for data on the types of *E. chlorophylla*, in the collection of the Museum of Comparative Zoölogy, and to Mr. Johnson and Mr. McAtee for specimens of the *chlorophylla* group. Unless stated otherwise the types of the new species are contained in the author's collection.

Erioptera margarita new species.

Male.—Length, 3.8–4 mm.; wing, 5.3–5.6 mm.

Female.—Length, 4 mm.; wing, 4.8 mm.

Antennæ with the basal segments light yellow, the flagellum brown; flagellar segments cylindrical, rather elongate, with coarse verticils. Head yellowish.

Mesonotum reddish brown, the lateral margins and the humeral region yellow. Wings pale yellowish, the costal region more suffused; stigma indistinct, pale brown; veins brown. Venation almost as in *E. microcellula* Alex., cell first M_2 closed, very small; second anal vein straight, diverging from the first anal vein; basal deflection of Cu_1 immediately before the fork of M .

Male hypopygium with the pleurites short and stout, the dorsal angle produced caudad into a pale fleshy lobe that is sparsely provided with coarse setæ. Pleural appendages two in number, the large one complex, bifid, the outer arm produced into a long, slightly curved, chitinized point whose surface is covered with very minute appressed teeth; the inner arm a broad, flattened chitinized blade with the apex truncated, in its angle at the base with a single conspicuous blackened conical point; the smaller pleural appendage is a slender arm whose acute chitinized apex is curved slightly caudad. The gonapophyses consist of six blackened chitinized hooks, a lateral pair that are very widely separated, the tips chitinized and covered with microscopic teeth. The four intermediate hooks consist of a pair of median slender, acutely pointed rods that are smooth, almost straight, with the tips contiguous or slightly decussate. Besides the above

there is a transverse flattened plate whose lateral angles are produced into stout, curved chitinized hooks that are directed proximad; the posterior median portion of this plate is still further produced into a small, flattened bifid blade.

The female is similar to the male but the abdominal tergites are darker; the ovipositor is very long, especially the tergal valves which are slightly upcurved at their tips.

Habitat.—Colorado.

Holotype, ♂, Platte Cañon, altitude 10,000 feet, August 29, 1915 (E. J. Osler).

Allotopotype, ♀.

Paratopotype, ♂, August 21, 1915; *paratypes*, 2 ♂'s, Colorado Springs, June 8, 1915 (M. C. Van Duzee).

A paratype is in the collection of Mr. Van Duzee.

Erioptera margarita is close to *E. microcellula* Alex. (Proc. Acad. Nat. Sci. Phila., for 1914, p. 585), but the structure of the male hypopygium is different. In *microcellula* the outer arm of the appendage is blunt and sparsely hairy at the apex, the inner flattened blade with a group of small teeth in its angle instead of a single powerful conical tooth. The gonapophyses of *E. microcellula* have numerous appressed teeth along their margins. *E. lucia* Alex., a third member of this group, is a very different fly and needs no comparison with this new species. It is probable that these three species belong to the group of *Erioptera trivialis* Meigen, of Europe, deviating from the general characters of the subgenus *Erioptera* in the often closed cell 1st M_2 , the straight second anal vein and a more or less tumid second antennal segment.

THE *CHLOROPHYLLA* GROUP.

As stated in the introduction to this article, several species were found to be confused under the name of *Erioptera chlorophylla* O. S. It will be necessary to review the specimens in the different museums to get a clear idea of the distribution of the species.

The species known to the writer may be separated in accordance with the following key:

1. Eyes of the male very large, broadly contiguous beneath, narrowly separated by the vertex above; male hypopygium with the two pleural appendages generally similar to one another, slender, tapering to the acute and slightly curved tips; female ovipositor short, strongly curved, the tergal valves blackened and minutely serrate along the ventral margin *E. chlorophylloides* n. sp.
Eyes of the male smaller, widely separated by the vertex; male hypopygium with the two pleural appendages dissimilar in appearance, the dorsal one more or less flattened, the ventral appendage slender with a perpendicular spine at or near the tip; female ovipositor, of the species as known, long, but slightly curved, the tergal valves pale and with the ventral margin smooth..... 2
2. The ventral pleural appendage of the male hypopygium with a very long spine some distance before the tip to form a fork with nearly equal arms or the spine slightly exceeding the actual tip... *E. furcifer* n. sp.
The ventral pleural appendage of the male hypopygium with the spine smaller, located at the extreme tip or small and situated slightly back from the apex, the forked appearance not so evident..... 3
3. Spine of the ventral pleural appendage of the male hypopygium small, shorter than the width of the blade at this point, located some distance before the tip of the appendage and shorter than the enlarged tip beyond it; gonapophyses of either side produced into a blackened divergent horn *E. chlorophylla* O. S.
Spine of the ventral pleural appendage of the male hypopygium longer, located at the tip of the appendage; gonapophyses in the form of flattened paddle-like blades whose outer margins are minutely serrate *E. subchlorophylla* n. sp.

Erioptera chlorophylloides new species.

Male.—Length, 4.5 mm.; wing, 5.8–6 mm.

Female.—Length, 5 mm.; wing, 6.8–6.9 mm.

Rostrum and palpi green. Antennæ green, the terminal flagellar segments a little darker. Eyes of the male very large, broadly contiguous on the ventral side of the head, separated by the narrow vertex above.

The thorax and abdomen, including the halteres, wings and their veins light green as in *E. chlorophylla*. Legs yellowish, the segments tipped with green. Male hypopygium with the pleurites more slender than in *chlorophylla*, the two pleural appendages generally similar to one another in size and form but the dorsal one a little shorter than the ventral or inner one. The appendages taper gradually to the acute blackened tips which are curved, the outer or dorsal appendage a little less curved than the other and with an indistinct appressed tooth before the tip. Gonapophyses with a powerful curved blackened hook on either side of the penis-guard.

The female is similar to the male but somewhat larger, the ovipositor small, with the tergal valves comparatively short, strongly upcurved and

with the ventral margin minutely serrate; they are dark in color, contrasting with the small green, sharply pointed sternal valves.

Habitat.—Northern North America.

Holotype, ♂, Clear Creek, Colorado, May 25, 1915 (E. J. Osler).

Allotopotype, ♀, July 1, 1915.

Paratopotypes, 18 ♂ ♀, May 25–July 27, 1915; *paratypes*, 2 ♂ ♀, Parry Sound, Ontario (H. S. Parish).

Erioptera chlorophylla Osten Sacken.

1859, *Erioptera chlorophylla* Osten Sacken, Proc. Acad. Nat. Sci. Phila. for 1859, p. 226.

In the type series as now represented in the Museum of Comparative Zoölogy are three specimens, a male from Bethel, Maine, which is chosen as the lectotype, a female and a broken specimen. I am indebted to Mr. Banks for the above data.

The male hypopygium has the pleurites much stouter than in *chlorophylloides*; the dorsal pleural appendage is a little longer than the ventral, of nearly equal width for the entire length or the apex a very little expanded, obliquely truncated, with the extreme outer angle blackened. The shorter and more slender ventral appendage is suddenly flattened and expanded at the tip, on the caudal or outer margin before the apex with a small, usually slender, blackened spine which is shorter than the width of the blade at this point. The tip beyond this spine is sometimes blackened and, in the type, one of the appendages appears claw-like. Gonapophyses small, each side consisting of a flattened plate whose inner posterior angle is produced strongly laterad into a short blackened horn whose tip is thus strongly divergent from its mate of the opposite side; the penis-guard has a slender arm on either side which form a collar-like structure passing beneath the hooks of the gonapophyses.

Lectotype, Bethel, Maine (Miss Edmands); Blue Hills, Massachusetts, July 16 (C. W. Johnson); Sacandaga Park, New York, June 18, 1914 (C. P. Alexander); near Philadelphia, Pennsylvania (C. W. Johnson).

Erioptera subchlorophylla new species.

Generally similar to *E. chlorophylla*. Male hypopygium with the pleural appendages very dissimilar in shape, the dorsal one expanded into a flattened blade at its apex; ventral appendage shorter and more slender, at the extreme tip with a long, stout blackened spine, directed caudad and placed at right angles to the appendage. Gonapophyses complex, the lateral chitinized arms slender, at the tips expanded into flattened paddle-like blades whose outer margin bears several minute acute teeth; horns of the penis-guard curved, projecting slightly beyond the level of the gonapophyses.

Holotype, ♂, Riverton, New Jersey, June 3, 1910 (C. W. Johnson).

Associated with this male type were several females which have an ovipositor of the type of *E. chlorophylloides* and it is possible that the female of *E. subchlorophylla* is similar to that species. Specimens in copula should be pinned together when captured.

Erioptera furcifer new species.

Generally similar to *E. chlorophylla*. Male hypopygium with the pleural appendages very dissimilar in shape; dorsal appendage slender, broadest and flattened at the base, narrowed to the blunt rounded apex which is heavily chitinized. Ventral pleural appendage slender, on the outer (posterior) margin far before the tip a very long, slender, blacked spine which is almost straight, the proximal face with subappressed hairs, the tip blackened. The slender tip of the appendage beyond this spine is a little shorter than the spine itself, the two appearing as a forked apex to the appendage, diverging at an angle of about 125°. Penis-guard as in the group, at the apex on either side with a long recurved chitinized hook; gonapophyses in caustic potash mounts, pale, flattened, the distal portion only a little wider than the base, the outer margin with minute teeth which extend down to about midlength of the gonapophyse.

Holotype, ♂, Plummer's Island, Maryland, June 24, 1908 (H. S. Barber).

Of the above species, *E. chlorophylla* and *E. chlorophylloides* form one group of species, *E. subchlorophylla* and *E. furcifer* a second group, separated by the form of the gonapophyses.

Mr. Edmund H. Gibson has resigned from the U. S. Bureau of Entomology to enter upon a new field of endeavor. He believes that entomology can be put on a dignified professional business basis just as law, medicine or engineering. He is breaking away from custom believing that after the pioneer work is in hand the field will welcome other entomologists. Mr. Gibson's headquarters, for the time being, will be Alexandria, Virginia.

Gerris argenticollis Parshley originally described from Massachusetts was taken in White Plains, N. Y., April 29, 1917.

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