

A NEW SPECIES OF *TAENIAPTERA* FROM THE UNITED STATES (DIPTERA: MICROPEZIDAE)

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Abstract.—*Taeniaaptera feei*, new species, is described from the southernmost part of Texas, and is compared with related Mexican species. A previously wholly unknown and highly specialized development of the male copulatory apparatus of this fly is also described.

While collecting insects along pathways in the Los Palamos Management Area at Brownsville, Texas in 1976, Frank D. Fee, of University Park, Pennsylvania, collected 11 specimens of a micropezid that proved to be undescribed. The species belongs to the Taeniapterinae, a subfamily of largely tropical distribution. Only six species have been found within the borders of the continental United States, although southward therefrom more than 200 species have been listed (Steyskal, 1965, 1968). The most recently named and still valid species of this subfamily known to occur within the United States is *Grallipeza nebulosa* (Loew), described in 1866.

Little is known about the biology of the Micropezidae. Some have been reared from decaying vegetable matter and dung, but one species is known to attack ginger roots in the Orient and another has been found in Europe feeding on the contents of leguminous root nodules (Müller, 1957; Steyskal, 1964, 1968). No biological or ecological data are associated with the new species beyond the fact that it was collected close to the ground. Additional collecting by Mr. Fee at the same time of the year in 1984 did not yield further specimens, probably because much further growth of vegetation along the pathways did not permit sweeping with the net close to the ground.

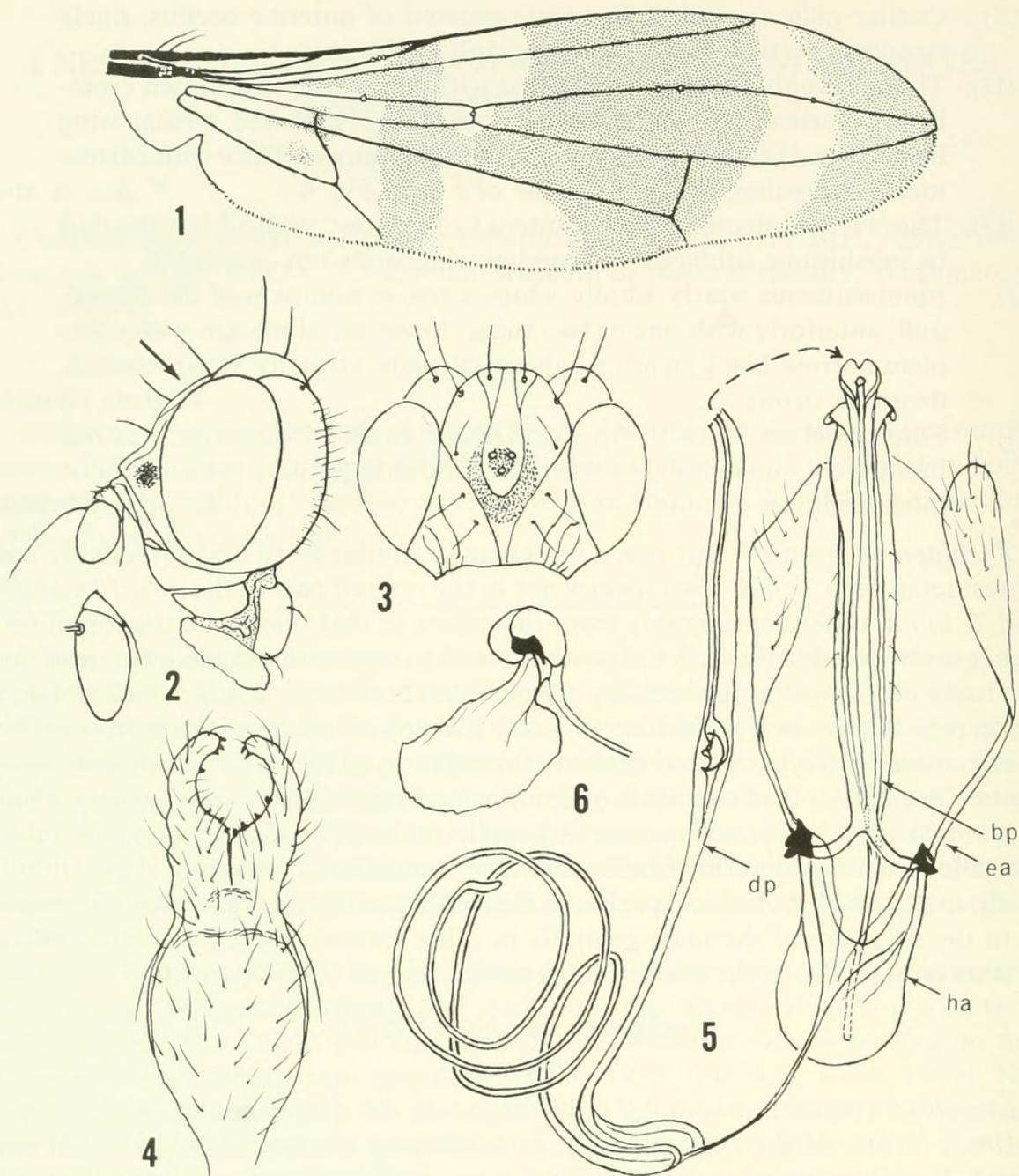
The species runs best in available keys (Hennig, 1934-1936; Steyskal, in press) to *Taeniaaptera*, although the wing vein closing the basal cubital cell (anal cell) is slightly shorter than the free part of that vein ($Cu_2 + Al$). Hennig (1934) stated in his key to the genera of the Taeniapterinae that all such intermediate cases were to be considered to belong in the part of the key led to by the character of long closing vein. The species is, on that basis, definitely a member of the *munda* group, one I treated after examination of types in the British Museum (Steyskal, 1967), describing three new species and presenting a key to the group as an extension to Hennig's (1934-1936) key to *Taeniaaptera*. The *munda* group is distinguished by the open cell R_5 of the wing, the reddish thorax, and the presence of only one pair of dorsocentral setae. *Taeniaaptera feei*, new species, may be recognized with the following revision of my 1967 key:

- F (E). Ocellar plate extending but little anterad of anterior ocellus, finely rugulose; vertical humps various, dull to shining.
- G (H). Thorax evenly reddish, without or with more traces of brown cross-bands; vertical humps polished, shining; subbasal and medial wing bands (Fig. 1) connected in discal cell; lower margin of face with narrow mesal darkening; subgenital plate of ♂ as in Fig. 4 *T. feei*, n. sp.
- H (G). Thorax with distinct brown anterad of furrow; vertical humps dull to subshining; subbasal and medial wingbands not connected.
- I (J). Forebasitarsus nearly wholly white; vertical humps well developed, dull, anteriorly with one or two rugae; lower facial margin with complete narrow black band; ♂ subgenital plate virtually straight-sided, denticles strong *T. grata* (Wulp)
- J (I). Forebasitarsus black at tip for distance equal to diameter; vertical humps low, subshining; ♂ subgenital plate strongly narrowed medially, inner denticles minute *T. wulpi* Steyskal

Taeniaptera grata (Wulp) bears the greatest similarity to and is perhaps the closest relative to *T. feei*. Two species not in the revised part of the key, *T. munda* and *T. lauta*, differ considerably from the others in that they have the top of the head evenly rounded (lacking the posterodorsal humps) and wingvein Cu₂ (closing the basal cubital cell) considerably elongated. This leaves a rather well defined group which may be typified by *T. grata* (Wulp), of which *Mitromyia conifer* Cresson is a synonym. Should further investigation of the large and multifarious genus *Taeniaptera* lead to means of defining and delimiting distinct genera, then *Mitromyia* may be found to deserve generic rank. The very apomorphic male genitalic structures described below are also found, with relatively slight differences, in *T. grata*, but lack of specimens for dissection does not permit a statement as to the structure of the male genitalia in other related species, nor what other structures may also occur within the present limits of *Taeniaptera*.

Taeniaptera feei, NEW SPECIES
Figs. 1–6

Length of wing in mm: ♂ 6.2–7.1 (average 6.3), ♀ 6.37–6.92 (average 6.55).
Entire body reddish brown to brown, with following black markings: Head (Figs. 2 and 3) with roundish orbito-antennal spot, ocellar triangle, and small mesal spot on lower edge of face; thorax with narrow lower anepimeral (pteropleural) edge; abdomen with blotch (sometimes brown) on membrane below suture between 4th and 5th tergites and lesser blotch below tergite 3; eversible tip of ovipositor; of legs, foretibia, narrow tip of forebasitarsus, and all other tarsal segments (tip of hindtibia dark brown). Scutum with faint brownish crossband sometimes perceptible a little anterad of transverse furrow. Outer rim of thoracic calypter blackish. Legs with creamy whitish parts as follows: bands a little shorter than wide starting about 3.5 × femoral diameter from tip of mid- and hindfemora; base (about 1.5 × as long as wide) of midfemur; all basitarsi except tips (apical 1/6 of fore-, apical 1/4 of mid- and hindbasitarsi, delimitation rather indistinct). Parts of femora adjacent to whitish parts a little darker than remainder and base of midfemur a little paler. Halter with cream-colored stem and blackish knob. Nearly all bristles and hairs black; a few on fringe of alar calypter, all on basal abdominal syntergite, and row along inner edge of propleuron yellowish. Following areas



Figs. 1-6. *Taeniaptera feei* Steyskal, n. sp. 1, Wing. 2, Head of male in profile, antenna in position of greatest expanse. 3, Same, dorsal view in direction of arrow in Fig. 2. 4, Fifth abdominal segment (copulatory fork), ventral view. 6, Andrium, ventral view of microslide preparation. bp—basiphallus, dp—distiphallus, ea—epandrium, ha—hypandrium.

conspicuously white microtomentose: face below interantennal ridge and above clypeus; orbit below orbito-antennal black spot along eye and upwards posteriorly to upper $\frac{1}{4}$ of postocular orbit, lower border of propleuron, mesal part of scutum from transverse furrow back to scutellum between dorsocentral setae; and most of lower part and posterior face of thorax below scutellum.

Head (Figs. 2 and 3): Upper, elevated, strongly convex parts and clypeus shining and smooth; interfrontal stripe tapering forwardly, narrow at foremargin; antennal bases separated by 0.24–0.37 (average 0.30) of distance between eyes at antennal level; distinct ridge extending between eyes; front above ridge slightly concave

and approximately at 90° angle to lower face; 3rd antennal segment in direct profile oval to elliptical, about twice as long as wide; arista bare at 80× magnification; small groups of short setulae at lower end of facial depression and similar hairs continued in row along lower margin to lowest point of gena; other setae as figured.

Thorax gently and evenly convex in profile; scutellum not upturned. Chaetotaxy: 2 ntpl, 1 pa, 1 pair apical sc; also with row of 10–12 stpl (sometimes much finer and shorter also close anterad of it and row of 5–6 smaller hairs just above hindcoxa and diverging forward from larger row. Wing as in Fig. 1, dark pattern consisting mostly of dark hairs, membrane only slightly darker. Sensilla on veins as marked with small circles on Fig. 1: 2 on Sc opposite basal end of cell bm, 6 on stem vein close basad of septum, 2 near tip of R₁, 1 in middle of basal section of R₅, 1 on crossvein ta, 2 near middle of large dark area on R₅, and 1 on same vein in preapical hyaline area. Cell bcu (formerly termed anal) with distinct central dark spot; pale area about ta only slightly extending into discal cell. Legs: Length of foretarsal segments, starting with basitarsus, as 100:38:22:12:16; hindtibia with complete series of irregularly alternating antero- and dosterodorsal proclinate setae little longer than half diameter of tibia, about 10 distinct among general setal vestiture.

Abdomen: Male (Figs. 4–6) with 5th sternite (copulatory fork) as in Fig. 4; andrium (Fig. 5) remarkably specialized; hypandrium (ha) U-shaped with broad anterior flange and extremely long, apically coiled filamentous extension from base of sinus entering abdominal cavity with extension from tip of aedeagus enveloping it; basiphallus (bp) with two curved branches at base joining antero-ventral corners of epandrium (ea) and extending backward to point where distiphallus (remainder of aedeagus, dp) is turned forward and finally envelops extension of hypandrium within body cavity; complex formation at considerable distance from base of distiphallus may include orifice of seminal duct; sperm pump (Fig. 6) with trilobate vesicle, broad asymmetrically expanded apodeme, and short efferent duct to base of basiphallus. Abdomen of female in preserved specimens with ovipositor sheath approximately 2.75 mm long; when totally everted, entire ovipositor 5 mm long, inversible portion black, composed of numerous close rows of minute, closely spaced spicules, no sharp distinction evident between sheath and inversible apical part; sheath at rest folded forward beneath abdomen, cuneate, gradually tapering to very slender tip.

Holotype ♂, allotype, and 1 ♂ and 1 ♀ paratypes, Texas, Cameron County, Brownsville, Los Palamos Management Area, 26.X.1976 (Frank D. Fee), in National Museum of Natural History, Washington, D.C.; 2 ♂ and 2 ♀ paratypes, same data, in Florida State Collection of Arthropods, Gainesville; 1 ♂ and 2 ♀ paratypes, same data, returned to Frank D. Fee.

Etymology.—The species name is a Latin genitive construction of the collector's name.

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