

Revision of the Nearctic species of the genus *Tachyempis* Melander, 1928 (Diptera: Hybotidae)

Ревизия Неарктических видов рода *Tachyempis* Melander, 1928 (Diptera: Hybotidae)

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КЛЮЧЕВЫЕ СЛОВА. Diptera, Hybotidae, Tachydromiinae, *Tachyempis*, Северная Америка.

ABSTRACT. The Nearctic species of the genus *Tachyempis* Melander, 1928 (Diptera: Hybotidae, Tachydromiinae) are revised. The following four species are recognised: *T. agens* (Melander) (type species of the genus), *T. calva* (Melander), *T. cinerea* Melander and *T. universalis* (Melander). The following two new synonyms are proposed: *T. longipennis* Melander, 1958 = *T. cinerea* Melander, 1928; *T. nervosa* Melander, 1928 = *T. universalis* (Melander, 1910). Redescriptions, illustrations of male terminalia, known distributions and a key to species are included. In addition, *Tachyempis* is re-defined and a revised key to the Nearctic genera of the tribe Tachydromiini is provided.

РЕЗЮМЕ. Представлена ревизия Неарктических видов рода *Tachyempis* Melander, 1928 (Diptera: Hybotidae, Tachydromiinae). Род представлен в регионе следующими четырьмя описанными видами: *T. agens* (Melander) (типовой вид рода), *T. calva* (Melander), *T. cinerea* Melander и *T. universalis* (Melander). Установлены два следующих новых синонима: *T. longipennis* Melander, 1958 = *T. cinerea* Melander, 1928; *T. nervosa* Melander, 1928 = *T. universalis* (Melander, 1910). Включены переописания, иллюстрации терминалий самцов, известные распространения и определительная таблица видов. Кроме того, уточнены диагностические признаки *Tachyempis* и составлена определительная таблица Неарктических родов трибы Tachydromiini.

Introduction

The Tachydromiinae is a very diverse subfamily in the family Hybotidae comprising quite small (1.0 to 5.0 mm) predatory flies that are generally seen running

on leaves of vegetation but also occur under many other conditions including tree-trunks, stones, sandy biotopes, etc. [Chvála, 1975; Grootaert, Shamshev, 2012]. The subfamily is divided into three tribes, namely Symballophthalmini, Tachydromiini and Drapetidini [= Drapetini] [Sinclair, Cumming, 2006]. Currently, the tribe Tachydromiini includes the following five genera: *Dysaletria* Loew, 1864, *Platypalpus* Macquart, 1827, *Tachydromia* Meigen, 1803, *Tachyempis* Melander, 1928 and *Tachypeza* Meigen, 1830 [Shamshev, Grootaert, 2018].

The genus *Tachyempis* (with *T. agens* (Melander, 1928) as the type species) was erected by Melander [1928] to include five species described by him earlier in *Tachydromia* from North America and the West Indies [Wheeler, Melander, 1901; Melander, 1910]. In addition, Melander [1928] added to *Tachyempis* two new species from the USA (California, New Mexico), one species from Cuba and Jamaica, eight species from Costa Rica and one species from Chile, as well as he transferred to this genus two species of *Tachydromia* described by Bezzi [1908] from the South Africa. The following number of species was described later: one species from Chile [Collin, 1933]; one species from Indiana of the USA [Melander, 1958], two species from Brazil [Smith, 1962] and one species from Bolivia [Raffone, 2012a]. In addition, Raffone [2012b] published new records of two species known earlier from Chile, Costa Rica and Brazil. Totally, 24 species were assigned to *Tachyempis* [Yang *et al.*, 2007; Raffone, 2012a]. Although, the systematic position of two South African species is disputable [Sinclair, Cumming, 2017]. The genus has never been revised and the original definition of *Tachyempis* is indistinct and somewhat confusing. Prior to our study, six species of this group were known from the Nearctic, including the type species.

Our paper includes redescrptions, illustrations of male terminalia, known distributions and a key to Nearctic species of *Tachyempis*. In addition, a more precise definition of *Tachyempis* is provided.

Material and methods

This study is based on material loaned from or deposited in United States National Museum of Natural History, Washington D.C., USA (USNM) and the Canadian National Collection of Insects, Ottawa, Canada (CNC). The photographs were taken using a Canon EOS 11 40D camera using a Canon MP-E 65 mm objective, with multiple layers combined using the Helicon Focus 5.3.14 software. To facilitate observations, the terminalia were macerated in cold 10% KOH, then immersed for a short period in 85% lactic acid and viewed in glycerine. Drawings of morphological features were made with a camera lucida attached to a compound microscope. In descriptions, the right and left side of the male terminalia are based on the unrotated position viewed posteriorly, such that in the illustrations the right surstylus appears on the reader's left side and vice versa. Male terminalia are figured in their unrotated position. Label data for primary types are cited in full with original spelling, punctuation, and date. Label lines are delimited by a slash (/) and the data from each label are separated by two slashes (//). Additional information to label data is included in square [] brackets. Secondary type data are abridged. The repository of specimens is given in parentheses. Male body length was measured from antennal base to the tip of genitalia and female body length from base of antennae to the tip of cerci. Thoracic setae are counted on one side of the body (except scutellars). Data on the distributions, besides labels, are based on Melander [1965].

Taxonomic account

Class Insecta Linnaeus, 1758
 Order Diptera Linnaeus, 1758
 Superfamily Empidoidea Latreille, 1804
 Family Hybotidae Meigen, 1820
 Subfamily Tachydromiinae Meigen, 1822
 Tribe Tachydromiini Meigen, 1822

Genus *Tachyempis* Melander, 1928

Tachyempis Melander, 1928: 288. Type species: *Tachydromia agens* Melander, 1910 (by original designation).

DIAGNOSIS. *Tachyempis* is distinguished from other Nearctic genera of Tachydromiini by a combination of the following characters: face entirely obliterated by eyes; eyes with enlarged ommatidia below antennae; frons with more or less divergent margins above, near anterior ocellus at least 1.5 times broader than near antennae; occiput with scattered, fine setae on lower part; vertical setae latero-clinate; thorax with mesopleuron tomentose; wing membrane hyaline to more or less infuscate, cell br shorter than cell bm at apex, cell cua and vein CuA absent.

DESCRIPTION. Very small (about 1.5 mm) to small (2–2.5 mm) brown to brownish black and densely greyish pruinose flies. Frons near anterior ocellus at least 1.5 times broader than near antennae (broadly to narrowly V-shaped or sometimes nearly Y-shaped), with sides gently bowed outwardly to straight. Eyes without ommatrichia, convex and with enlarged ommatidia below antennae. Face entirely obliterated by eyes. Vertical setae prominent, 1 pair, latero-clinate, short to very long, broadly to narrowly spaced. Ocellar triangle usually with 2 pairs of setae;

anterior pair (when present) always minute, slightly inclinate; posterior pair distinct, latero-clinate; usually 2 minute, slightly latero-clinate postocellars. Antenna with postpedicel short, nearly as long as broad, usually slightly asymmetrical, drop-like or nearly so (sometimes onion-shaped); stylus arising dorsoapically, moderately long to long, usually distinctly pubescent. Gena not prominent. Proboscis moderately long, straight. Palpus subrectangular to elongate oval (moderately broad to narrow, lanceolate); clothed in dense pubescence giving to palpus silvery or purple glisten in some view; subapical seta present or absent, sometimes 3–4 short submarginal setae present.

Thorax with mesoscutum tomentose or shiny; mesopleuron tomentose. Precoxal bridge somewhat narrower than in other genera of Tachydromiini. Proepisternum large, subtriangular, separated by suture from katepisternum of mesopleuron, bare. Postpronotal lobe distinct, not separated by suture from proepisternum, separated by suture from mesoscutum, subglobular to slightly elongate oval; postpronotal seta present or absent. Mesoscutum gently, slightly convex; slightly longer than broad (usually 1.2–1.3 times, rarely about 1.5 times); acrostichal setae present or absent, biserial when present, minute; dorsocentral setae uniserial, similar to acrostichals, prescutellar pair short to very long; usually 1 notopleural (sometimes 2), 1 postalar and 4 scutellars (sometimes 2; when 4 setae, then lateral pair fine and very short); mesopleuron bare (although, Collin [1933: 26] notes “microscopic hairs below notopleural suture” in his *T. adunca* from Chile).

Legs short; fore femur slightly swollen, broader than mid and hind femora; mid femur slender, sometimes with complete rows of spine-like setae ventrally; mid leg lacking secondary sexual characters in male.

Wing normally developed, usually broad and blunt-tipped (sometimes narrow) [an undescribed species of *Tachyempis* with reduced wings noted in illustrated key of Sinclair *et al.* [2023] actually belongs to *Tachydromia*]; membrane nearly hyaline to more or less infuscate, very rarely banded. Very short basal costal seta usually present. Rs moderately long, nearly as long as or slightly longer than basal portion of vein R₄₊₅, originating proximal to middle of cell bm or near middle of R₁. R₁ meeting costa before or near middle of wing. R₂₊₃ long, meeting costa beyond mid-point of wing, evenly arched towards costa. Vein R₄₊₅ running parallel with vein M₁₊₂. Vein CuA+CuP (= anal vein by authors) absent. Crossvein CuA (= CuA₁) absent; crossvein bm-m (= bm-cu) transverse or slightly oblique. Cell br shorter than cell bm at apex; cell bm nearly as broad as or broader than cell br.

Abdomen with tergites 1–7 unmodified; segment 8 asymmetrical, tergite 8 broadly, deeply concave posteriorly, fused with sternite 8 on left side, bearing large anteromarginal apodeme closer to left side. Male hypopygium rotated 90°, moderately large, more or less elongate oval. Epandrium rhomboid viewed dorsally, not divided (epandrial bridge present); fused (or articulated) with hypandrium at a narrow point. Right epandrial lamella elongate oval, somewhat produced mid-ventrally, bearing scattered, simple setae. Right surstylus differentiated, single, nearly digitiform, long, overlapping terminalia posteriorly, with or without spine-like setae. Left epandrial lamella more or less shifted anteriorly relative to right epandrial lamella (dorsal view); with large basal apodeme. Left surstylus barely differentiated from epandrial lamella, single, with or without internal projection; no rod-shaped process beneath left surstylus. Hypandrium narrow, bare. Cerci separated; left cercus shifted anteriorly relative to right cercus; shape and setation specifically variable. Hypoproct unmodified, membranous to weakly sclerotised. Subepandrial sclerite bare or setose. Two rod-shaped apodemes of subequal lengths. Phallus short, membranous.



Figs 1–3. *Tachyempis* Melander, habitus: 1 — *T. agens* (Melander), ♀, paratype, antero-lateral view; 2 — *T. calva* (Melander), ♂, lateral view; 3 — *T. universalis* (Melander), ♂, lateral view.

Рис. 1–3. *Tachyempis* Melander, габитус: 1 — *T. agens* (Melander), ♀, паратип, вид спереди и сбоку; 2 — *T. calva* (Melander), ♂, вид сбоку; 3 — *T. universalis* (Melander), ♂, вид сбоку.

Female similar to male. Secondary sexual characters are rarely present in male (e.g., hind basitarsus with 1 strong, long, black, dorsal subapical seta in species of the *T. longispina* complex).

REMARKS. *Tachyempis* is represented in the Nearctic by very small, relatively uniform species (Figs 1–3). However, in the Neotropical region the genus shows curious morphological diversity. The above-given diagnosis was somewhat expanded to cover some undescribed Neotropical species [Shamshev, Grootaert, unpublished data], based on our redefinition of the genus herein. However, the Neotropical species assigned to *Tachyempis* needs a separate revision. Some of the species described by Melander [1928] may be not congeneric.

Melander [1928: 269–270], and subsequent authors (e.g., recently Cumming & Sinclair [2009]; Sinclair *et al.* [2023]), distinguished *Tachyempis* from *Tachydromia* primarily by shape of the frons (i.e., frons V-shaped in *Tachyempis* [Sinclair *et al.*, 2023: 13, Couplet 7, fig. A] versus frons with nearly parallel margins in *Tachydromia*). However, this character somewhat varies in the both genera (especially in *Tachyempis*) and undistinguishable or hardly distinguishable cases are present (e.g., when Melander indicated that the frons is “narrowly V-shaped”). The length of the mesoscutum is variable in *Tachydromia* and in many cases *Tachyempis* and *Tachydromia* are not distinguishable by this character or differences are uncertain to be readily recognisable. *Tachydromia* is well known by banded wings. In the species assigned to *Tachyempis* the wing membrane is usually hyaline to more or less infuscate and very rarely banded (one undescribed species from Bolivia). However, it should be noted that there are many members of *Tachydromia* with not banded wings, e.g., about 20% of the Nearctic species (Shamshev, Grootaert, unpublished data). In the Neotropical region, all known to us species of *Tachydromia* have banded wings but the genus is relatively poorly represented [Shamshev, unpublished data]. Though none of these characters are conclusive, sometimes, they are useful for practical purposes. Based on our survey of the World fauna of *Tachydromia*, *Tachyempis* could be distinguished from *Tachydromia* primarily by entirely tomentose mesopleuron (versus extensively shiny) and by lateroconate vertical setae (versus inclinate), as keyed below. There are two curious Palearctic species of *Tachydromia* with extensively tomentose mesonotum (*T. catalonica* (Strobl, 1906) and *T. sabulosa* Meigen, 1830). However, they possess shiny anepisternum and katapisternum of the mesopleuron.

We did not include in *Tachyempis* two species described by Bezzi [1908] from South Africa, as Smith [1969] did. Our

conclusion is based on an examination of Bezzi’s type material and additional material noted by Smith. The discussion of systematic position of these species would be beyond the scope of our paper.

DISTRIBUTION. Currently, *Tachyempis* comprises 20 species described from the New World only. The genus is poorly represented in the Nearctic (four described and one undescribed species) and relatively diverse in the Neotropical region (17 species). Most of the Neotropical species were described from Costa Rica. However, there are many undescribed species from other areas of the region. In addition, one undescribed species of *Tachyempis* is present in South Africa and one species in Japan.

KEY TO THE NEARCTIC GENERA OF THE TRIBE TACHYDROMIINI

1. Eyes with tiny ommatrichia. Postpronotal lobe usually indistinct (except *Austrodromia* Collin and *Chaetodromia* Chillcott) Drapetidini
- Eyes bare. Postpronotal lobe distinctly differentiated (*Tachydromiini*) 2
2. Wing cell cua (= anal cell) more or less formed, with vein CuA distinct and vein CuA+CuP present, although sometimes faint. Mid leg usually raptorial, with femur thickened and armed with rows of spine-like setae ventrally, tibia slightly arched and often ending in sharp spur *Platypalpus* Macquart
- Wing cell cua absent (vein CuA+CuP absent); vein CuA present or absent. Mid leg simple, at most with some modifications in the male (subbasal clusters of spine-like setae, excavations, tubercles, etc.) 3
3. Ocellar triangle placed some distance in front of upper (vertical) angle of eyes. Eyes more or less approximated behind ocellar triangle, where they usually are closer together than immediately in front of ocellar triangle. Occiput with numerous, whitish, slightly flattened setae on lower part. Vein CuA usually present (sometimes absent) *Tachypeza* Meigen
- Ocellar triangle level with upper angle of eyes. Eye margins more or less divergent on vertex. Occiput with scattered, fine setae on lower part. Vein CuA always absent 4
4. Thorax with mesopleuron extensively shiny. Vertical setae inclinate (sometimes also slightly proclinate). Frons usually with nearly parallel sides. Wing membrane often with crossbands or maculae *Tachydromia* Meigen
- Thorax with mesopleuron tomentose. Vertical setae lateroconate. Frons often with sides broadly divergent above, V-shaped to

nearly Y-shaped. Wing membrane hyaline to more or less infuscate, very rarely banded *Tachyempis* Melander

Tachyempis agens (Melander, 1910)

Figs 1, 4–6.

Tachyempis agens Melander, 1910: 59 (♂ and ♀), figs 2 (head and thorax), 19 (wing). Type locality: USA, Washington, Pullman.

NOTES ON TYPE SERIES. Melander [1910] reported the following material: "Type male collected on a windowpane July 3, 1906, in my house at Pullman, Washington. Type female taken in a wheat field nine miles west of Baird, Washington, June 23, 1908. I have also five mounted paratypes which I collected at Lynden, Baird, and Pullman, all in Washington State".

TYPE MATERIAL EXAMINED. **Holotype**, ♂, labelled: Pullman Wash. / 3 July 06 // TYPE / *Tachyempis agens* ♂ / Mel. [red label, hand-written] // AL Melander / Collection / 1961 (USNM). **Paratypes**. Baird, 6.23.08, Wash. // Type, *Tachyempis agens* ♀ Mel. [red label, hand-written] // AL Melander Collection 1961 (1 ♀, USNM); Pullman, Wash., 10 July 1908 // Paratype *Tachyempis agens* Mel. // AL Melander Collection 1961 (1 ♀, USNM); Linden, Wash., Jul. 29.08 // Paratype *Tachyempis agens* Mel. // AL Melander Collection 1961 (1 ♀, USNM); Pullman, Wash., 16 June 1912 // Paratype *Tachyempis agens* Mel. // AL Melander Collection 1961 (1 ♀, USNM); Linder, Wash., Jul. 22.08 // Paratype *Tachyempis agens* Mel. // AL Melander Collection 1961 (1 ♂, dissected, USNM).

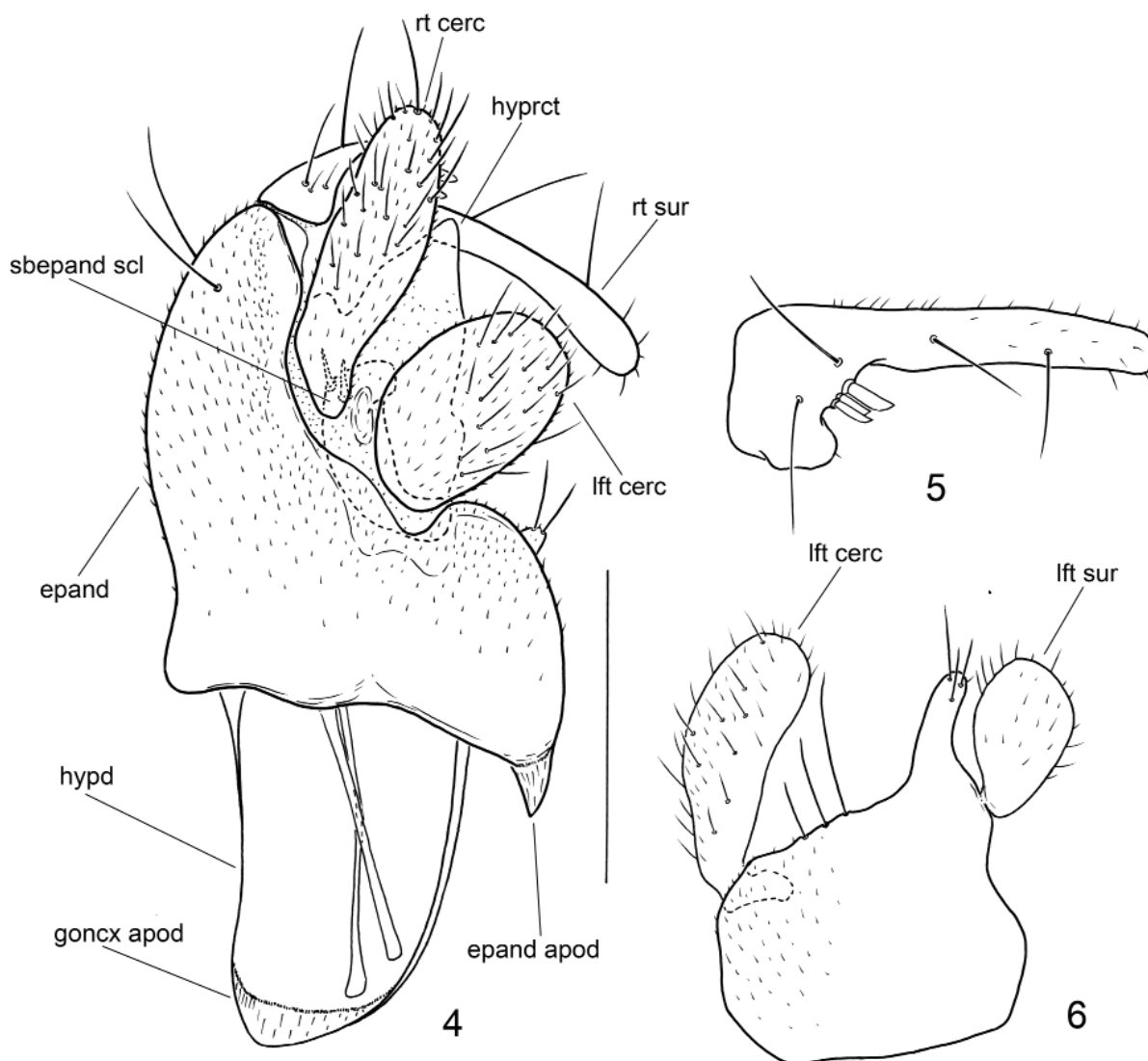


Fig. 4–6. *Tachyempis agens* (Melander), ♂: 4 — hypopygium, dorsal view; 5 — right surstylus, lateral view; 6 — left epandrial lamella, lateral view. Abbreviations: epand — epandrium; epand apod — epandrial apodeme; goncx apod — gonocoxal apodeme; hypd — hypandrium; hyprct — hypoproct; lft cerc — left cercus; lft sur — left surstylus; rt cerc — right cercus; rt sur — right surstylus; sbepand scl — subepandrial sclerite. Scale bar is 0.1 mm.

Рис. 4–6. *Tachyempis agens* (Melander), ♂: 4 — гипопигий, вид сверху; 5 — правый сурстиль, вид сбоку; 6 — левая лопасть эпандрия, вид сбоку. Сокращения: epand — эпандрий; epand apod — эпандриальная аподема; goncx apod — гоноксальная аподема; hypd — гипандрий; hyprct — гипопрокт; lft cerc — левый церк; lft sur — левый сурстиль; rt cerc — правый церк; rt sur — правый сурстиль; sbepand scl — субэпандриальный склерит. Масштаб: 0,1 мм.

ADDITIONAL MATERIAL EXAMINED. USA, Idaho: Lewiston, ID, 26.vi.1926, AL Melander / AL Melander Collection 1961 (1 ♀, USNM); Moscow Mt., Idaho, 4.vii.1916 / AL Melander Collection 1961 (1 ♀, USNM). **Washington:** Union Flat, Wash., 16.vi.16 / AL Melander Collection 1961 (1 ♂, USNM).

DIAGNOSIS. Small species with entirely greyish pruinose occiput, vertex, frons and thorax; head and thorax with pale setae; palpus subrectangular, clothed in whitish pubescence giving to palpus silvery glisten in some view; pale yellow in male, dusky yellow in female; legs mostly tawny, fore coxa and fore femur paler ventrally.

REDESCRIPTION. Male. Length: body 1.3–1.5 mm, wing 1.4–1.5 mm. Head black, with pale setation. Occiput and vertex entirely greyish pruinose; 2 moderately long, wide apart, lateroconate verticals; some scattered, short, fine setae on lower part of occiput, row of minute postoculars, some longer setae near mouth-opening. Ocellar triangle greyish pruinose; 2 moderately long lateroconate ocellars. Frons entirely greyish pruinose; near anterior ocellus nearly 2 times broader than near antennae; margins slightly bowed outwardly opposite ocellar triangle and nearly parallel above antennae; above antennae 2.5–3.0 times as broad as anterior ocellus. Antenna with scape and pedicel reddish brown, postpedicel and stylus brown; postpedicel very small, slightly broader than high; stylus subapical, rather long, 4.0–5.0 times as long as pedicel and postpedicel combined, microscopically pubescent. Proboscis brown, short. Palpus unmodified, broad, subrectangular, pale yellow (usually slightly darkened apically), clothed in whitish pubescence giving to palpus silvery glisten in some view, with 3–4 yellow submarginal setae of different lengths.

Thorax entirely blackish brown, uniformly faintly greyish tomentose, with pale setation. Postpronotal lobe rather subglobular, with 1 moderately long inclinate seta and several minute setulae. Mesonotum usually with 1 long notopleural (sometimes 2, then anterior seta short), 2–3 minute setulae on postsutural supra-alar face, 1 short postalar and 4 scutellars (setae of apical pair long inclinate, lateral pair short); some minute setulae present behind postpronotal lobe and on notopleural depression anteriorly; acrostichals minute, arranged in 1–2 rows, lacking on prescutellar depression; dorsocentrals mostly uniserial and minute, 1–2 prescutellar pairs longer.

Legs colour: fore coxa yellow, mid and hind coxae brown; otherwise legs tawny, fore femur ventrally and knees of fore leg usually somewhat paler. Legs with pale setation. Fore coxa faintly whitish pruinose anteriorly. Trochanters with unmodified setation. Fore femur thickened; faintly whitish pubescent ventrally; bearing short anteroventral and posteroventral setae becoming longer closer to base. Fore tibia slightly thickened, with unmodified setation. Mid femur unmodified, slender; with anteroventral and longer posteroventral setae becoming longer closer to base, bearing several moderately long setae near base anteriorly. Mid tibia unmodified, with more or less distinct ventral spinule-like setulae, lacking apical projection. Hind femur and tibia unmodified, lacking prominent setae. Tarsomeres of all legs unmodified, lacking prominent setae.

Wing normally developed, rounded at apex, with unmodified venation; membrane lacking prominent pattern, uniformly faintly infuscate. One short basal costal seta present. Second section of costa nearly 1.5 times longer than third section. Rs about 2 times longer than basal portion of R_{4+5} . Vein R_{2+3} evenly arched towards costa. Veins R_{4+5} and M_{1+2} parallel near wing-apex. Apical portion of vein M_4

(= Cu_1 by authors) slightly longer than its basal portion. Crossveins r-m and bm-m broadly separated; r-m closer to apex of cell bm than to its middle; bm-m slightly oblique (sometimes nearly transverse). Cell bm broad, nearly 1.5 times broader than cell br. Cell r_1 nearly 2.5 times narrower than cell r_{2+3} . Calypter brownish, with pale cilia. Halter with pale knob and brownish stem.

Abdomen black brown, subshiny, faintly greyish pruinose; covered with scattered minute pale setulae; pregenital segments with rather short posteromarginal setae.

Hypopygium (Figs 4–6) moderately large, brown, elongate oval. Right epandrial lamella elongate oval, somewhat produced mid-ventrally, bearing scattered, simple setae. Right surstylus (Figs 4, 5) differentiated, digitiform, mostly narrow, broad near base, very long, overlapping hypopygium posteriorly; bearing 3 blunt-tipped spines on upper margin near base, 1 spine-like seta near base on internal face, 4 moderately long strong setae dorsally, scattered marginal setulae. Left epandrial lamella (Figs 4, 6) slightly shifted anteriorly relative to right epandrial lamella (dorsal view); basal apodeme inconspicuous; with short, digitiform apical projection bearing scattered setulae apically; 3 moderately long marginal setae closer to base of left cercus. Left surstylus (Fig. 6) barely differentiated from epandrial lamella, elongate oval, moderately large, with moderately long setae along dorsal margin and at apex; without internal projection. Cerci (Fig. 4) broadly separated; right cercus moderately large, digitiform (dorsal view), bearing moderately long simple setae somewhat stronger apically; left cercus shifted anteriorly relative to right cercus, elongate oval, broad, bearing short to moderately long simple setae. Subepandrial sclerite semicircular, with 2 spine-like setae.

Female (Fig. 1). Palpus dusky yellow, darker anteriorly. Antenna often entirely brown. Otherwise as in male. Abdominal segments 7–8 densely pruinose. Cercus moderately long, slender, with scattered setulae.

REMARKS. The holotype is in good condition but left antenna missing. Melander [1910] noted this species actively running about the ground and stalks in wheat fields.

An undescribed species mentioned above (collected from Arizona (USA)) resembles *T. agens* sharing pale setose thorax and a postpronotal seta. However, it can be readily distinguished from *T. agens* primarily by narrow, elongate oval palpus, narrower frons and clearly yellow scape and pedicel of the antenna.

DISTRIBUTION. USA (Idaho, Washington).

Tachyempis calva (Melander, 1910)

Figs 2, 7–10.

Tachydromia calva Melander, 1910: 58 (♀), fig. 18 (wing). Type locality: USA, Georgia, Tifton.

NOTES ON TYPE SERIES. Melander [1910] provided the following data: “Described from a single female, presumably collected by Mr. G. R. Pilate as it bears the label, Tifton, Georgia, Sept. 25, 1896”.

TYPE MATERIAL EXAMINED. Holotype, ♀, labelled: Tifton, Ga. / Sept. 25 '96 // TYPE / *T. calva* / Mel. [red label, hand-written] // AL Melander / Collection / 1961 (USNM).

ADDITIONAL MATERIAL EXAMINED. USA, North Carolina: Southport NC, 10.x.1948, SW Sabrosky / ♂; *Tachyempis* (? *calva* Mel.), det. Sabrosky (2 ♂♂, USNM).

DIAGNOSIS. Small species with shiny frons and vertex (including ocellar triangle); head and thorax with black setae; palpus elongate oval, pale, silvery white pubescent, with 1 short, dark, subapical seta; postpronotal lobe and mesoscutum subshiny; legs extensively yellow, hind femur mostly brownish (except base).

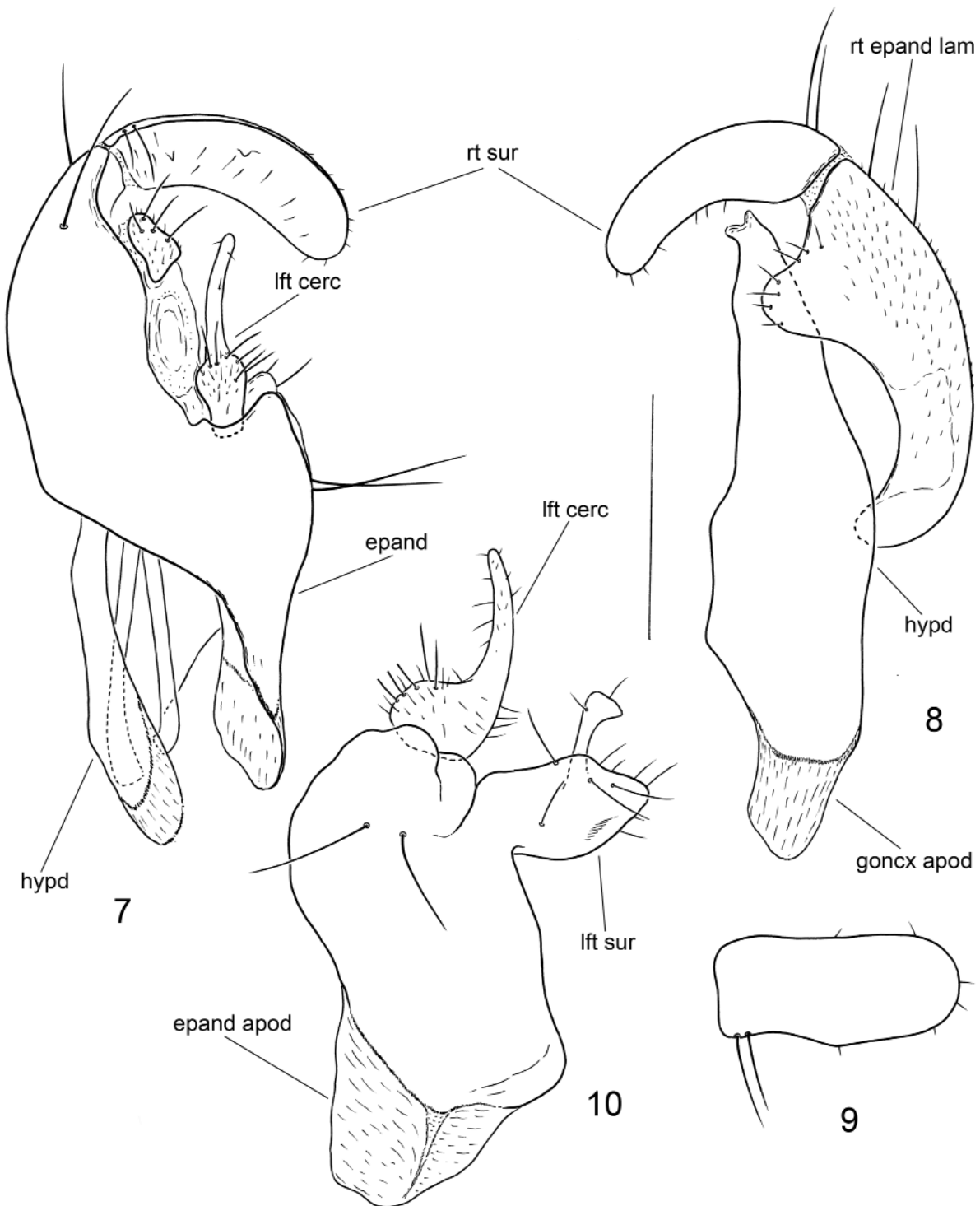


Fig. 7–10. *Tachyempis calva* (Melander), ♂: 7 — hypopygium, dorsal view; 8 — right epandrial lamella and hypandrium, ventral view; 9 — right surstylus, lateral view; 10 — left epandrial lamella, lateral view. Abbreviations: epand — epandrium; epand apod — epandrial apodeme; goncx apod — gonocoxal apodeme; hypd — hypandrium; lft cerc — left cercus; lft sur — left surstylus; rt epand lam — right epandrial lamella; rt sur — right surstylus. Scale bar is 0.1 mm.

Рис. 7–10. *Tachyempis calva* (Melander), ♂: 7 — гипопигий, вид сверху; 8 — правая лопасть эпандрия и гипандрий, вид снизу; 9 — правый сурстиль, вид сбоку; 10 — левая лопасть эпандрия, вид сбоку. Сокращения: epand — эпандрий; epand apod — эпандриальная аподема; goncx apod — гоноксальная аподема; hypd — гипандрий; lft cerc — левый церк; lft sur — левый сурстиль; rt epand lam — правая лопасть эпандрия; rt sur — правый сурстиль. Масштаб: 0,1 мм.

REDESCRIPTION. Male (Fig. 2, described for the first time). Length: body 1.5–1.6 mm, wing 1.6 mm. Head black. Occiput (except narrow postocular space) greyish pruinose; 2 rather moderately long, black, wide apart, laterocline verticals; some scattered, short, fine brownish to brownish yellow setae on lower part, row of minute postoculars, some longer pale setae near mouth-opening. Vertex shiny, including ocellar tubercle; 2 moderately long, black, laterocline ocellars. Frons shiny, broadly V-shaped, near anterior ocellus about 2 times broader than near antennae, with straight margins, above antennae about 2.5–3.0 times as broad as anterior ocellus. Antenna brown; postpedicel small, rather drop-like, nearly as long as wide; stylus arising somewhat dorsoapically, long, about 4.0 times as long as pedicel and postpedicel combined; short pubescent. Proboscis brown, short. Palpus unmodified, elongate ovate, short, pale, clothed in numerous minute silvery white setulae giving to palpus silvery glisten in some view; with some scattered, short, pale setae, bearing 1 dark, slightly stronger subapical seta.

Thorax entirely brown to black; with postpronotal lobe and mesoscutum almost shiny, scarcely pale grey tomentose (more distinct in anterior view); prosternum, proepisternum, scutellum and entire mesopleuron somewhat denser tomentose. Postpronotal lobe elongate oval, lacking prominent setae, with scattered minute setulae. Mesonotum with 1 black, long, strong notopleural, 3 minute setulae on postsutural supra-alar face, 1 minute postalar and 4 scutellars (apical pair long, strong, inclinate, lateral pair minute); some minute setulae present behind postpronotal lobe and on notopleural depression anteriorly; acrostichals minute, arranged in 1–2 rows, lacking on prescutellar depression; dorsocentrals arranged in 1–2 rows, minute throughout.

Legs colour: largely yellow; fore and mid femora somewhat brownish yellow on subapical part dorsally (mid femur darker), hind femur brownish on about apical 2/3–3/4 [in holotype 2/3 but not 1/2 as Melander indicates]; fore and mid tibiae brownish yellow near base; tarsomere 5 of all legs brown. Coxae clothed in pale setae of different lengths, fore coxa faintly whitish pruinose anteriorly. Trochanters with unmodified setation. Fore femur thickened, faintly whitish pubescent ventrally, bearing short anteroventral and posteroventral pale setae becoming longer near base. Fore tibia spindle-shaped, with row of stronger ventral setulae. Mid femur unmodified, slender, with anteroventral and longer posteroventral pale setulae becoming longer near base. Mid tibia unmodified, with quite prominent ventral spinule-like setulae, lacking prominent apical projection. Hind femur and tibia unmodified, lacking prominent setae. Tarsomeres of all legs unmodified, lacking prominent setae.

Wing normally developed, rounded at apex, with unmodified venation; lacking prominent pattern, uniformly faintly infusate. One very short costal seta present. Second section of costa slightly longer than third section (nearly 1.4 times). Vein R_{2+3} arched towards costa on basal portion. Rs nearly as long as basal portion of R_{4+5} . Veins R_{4+5} and M_{1+2} parallel near wing-apex. Apical portion of M_4 slightly longer than its basal portion. Crossveins r-m and bm-m broadly separated; bm-m transverse. Cells br and bm of subequal width. Cell r_1 nearly 2.5 times narrower than cell r_{2+3} . Calypter brownish, with pale cilia. Halter with pale knob and brownish stem.

Abdomen black brown, subshiny, faintly greyish pruinose; covered with scattered minute setulae; pregenital segments with long posteromarginal setae.

Hypopygium (Figs 7–10) moderately large, brown, elongate oval. Right epandrial lamella elongate oval, somewhat produced mid-ventrally (Fig. 8), bearing scattered, simple setae. Right surstylus (Figs 7–9)

differentiated, nearly digitiform, rather broad, long, overlapping terminalia posteriorly; bearing 2 long closely set setae near base dorsally, with some scattered marginal setulae. Left epandrial lamella (Fig. 10) strongly shifted anteriorly relative to right epandrial lamella (dorsal view); rounded apically, with large basal apodeme; 2 long setae on subapical part. Left surstylus (Fig. 10) barely differentiated from epandrial lamella, nearly elongate oval, rather small, with moderately long setae along dorsal margin and at apex; with slender internal projection bearing scattered setulae at apex. Cerci (Fig. 7) separated; left cercus shifted anteriorly relative to right cercus, basal portion slightly produced inside epandrium; right cercus small, rather subtriangular (dorsal view), bearing moderately long simple setae; left cercus digitiform, broadened at base and very slender apically, gently arched (left lateral view), in left lateral view longer than left surstylus, bearing cluster of several moderately long setae on broadened basal portion. Subepandrial sclerite semicircular, bare.

FEMALE. Abdomen paler, rather yellowish brown (it is difficult to conclude whether this condition refers to sexual dimorphic characters but most probably that the holotype was described after paler specimen). Otherwise as in male. Apical abdominal segments missing.

REMARKS. The holotype is in poor condition: head, left fore leg and tarsomere 5 of right fore leg, tarsomeres 2–5 of right mid leg, right hind leg and apical part of abdomen (from segment 5) are lost.

DISTRIBUTION. USA (Georgia, North Caroline).

Tachyempis cinerea Melander, 1928
Figs 11–13.

Tachyempis cinerea Melander, 1928: 290 (♀). Type locality: USA, New Mexico, Alamogordo.

Tachyempis longipennis Melander, 1958: 296 (♂). Type locality: USA, Indiana, Ripley County; **syn.n.**

NOTES ON TYPE SERIES. *Tachyempis cinerea*: Melander [1928] described this species from the female sex only. He provided the following data: “Two specimens; Alamogordo, New Mexico, type in the Academy of Natural Science, Philadelphia”.

Tachyempis longipennis: Melander [1958] noted the following material: “Holotype and two paratypes: Ripley County, Ind., 14 July, 1955; Dr. Leland Chandler, collector. The type is deposited in the National Museum collection (No. 63,497). The two paratypes are placed in the collections of Purdue University and myself”.

TYPE MATERIAL EXAMINED. *Tachyempis cinerea*: **Syntype**, ♀, labelled: Alamogordo IV.30 [hand-written] 02 NM // Type *T. cinerea* Mel. [red label] // AL Melander Collection 1961 (USNM).

Tachyempis longipennis: **Holotype**, ♂, labelled: Ripley Co. Ind. / 14–VII–1955 // *L. zephyrum* / colony [hand-written] // *L. Chandler* / Collr. // 5 [circled, hand-written] // Type No / 63497 / USNM [red label] // Holotype ♂ / *Tachyempis longipennis* 1957 / det. Melander [hand-written] (USNM). **Paratype**. Four upper labels with same data and style as holotype // Paratype *Tachyempis longipennis* Melander [hand-written] // AL Melander Collection 1961 (♂, USNM).

ADDITIONAL MATERIAL EXAMINED. CANADA, Ontario: Ottawa, nr. Uplands Airport, Malaise, 2–11.vi.1992, J.M. Cumming (1 ♂, CNC). **USA, Illinois:** Cobden, Ill., May 7–9, 1918, Coll. J.R.M. (1 ♀, USNM); Centerville, Ill., Aug. 16, 1914, Sangamon R. (1 ♂, USNM); Urbana, Ill., Aug. 10, 1916 (1 ♀, USNM); Urbana, Ill., Jul. 5, 1915, on tree (1 ♀, USNM); Urbana, Ill., Jul. 28, 1915, Sandy

(1 ♂, USNM); Easten, Ill., May 1, 1914, Central ditch (2 ♂♂, USNM); White Heath, Ill., May 16, 1915 (1 ♂, USNM). **Kansas:** Manhattan, Ks., VI-8-1932, C.W. Sabrosky; ♂ — spine on metatar. 3; *Tachyempis* sp., (nr. *longispina* Mel. / spine on hind metatar.), det. Sabrosky (1 ♂, 1 ♀, USNM). **Michigan:** Wayne Co., Mich., Crosse Ile, July 25 1951, Geo. Steyskal (1 ♂, USNM).

DIAGNOSIS. Small greyish species; occiput narrowly shiny along eye margin, vertex shiny between eye margin and ocellar triangle; antenna with scape and pedicel yellowish; legs extensively yellow. Male: hind basitarsus with 1 strong, long, black, dorsal subapical seta.

REDESCRIPTION. Male (habitus photo in Sinclair *et al.* [2023: 149, fig. C]). Length: body 1.5–1.8 mm, wing 1.5–1.6 mm.

Head black. Occiput (except narrow shiny postocular space) faintly greyish pruinose; 2 short, black, wide apart, lateroocline verticals; some scattered, short, pale setae on lower part, row of minute pale postoculars. Vertex shiny between eye margin and ocellar tubercle. Ocellar tubercle faintly pruinose; 2 short dark lateroocline ocellars. Frons broadly V-shaped, near anterior ocellus nearly 2.5 times broader than above antennae, above antennae about 2.5 times as broad as anterior ocellus; with nearly straight margins; densely greyish pruinose on lower part, faintly pruinose closer to ocellar triangle. Antenna with scape and pedicel yellow to brownish yellow, postpedicel and stylus brown; postpedicel small, rather drop-like, more convex ventrally; stylus apical, rather short, 3.0–3.5 times as long as pedicel and postpedicel combined, short pubescent.

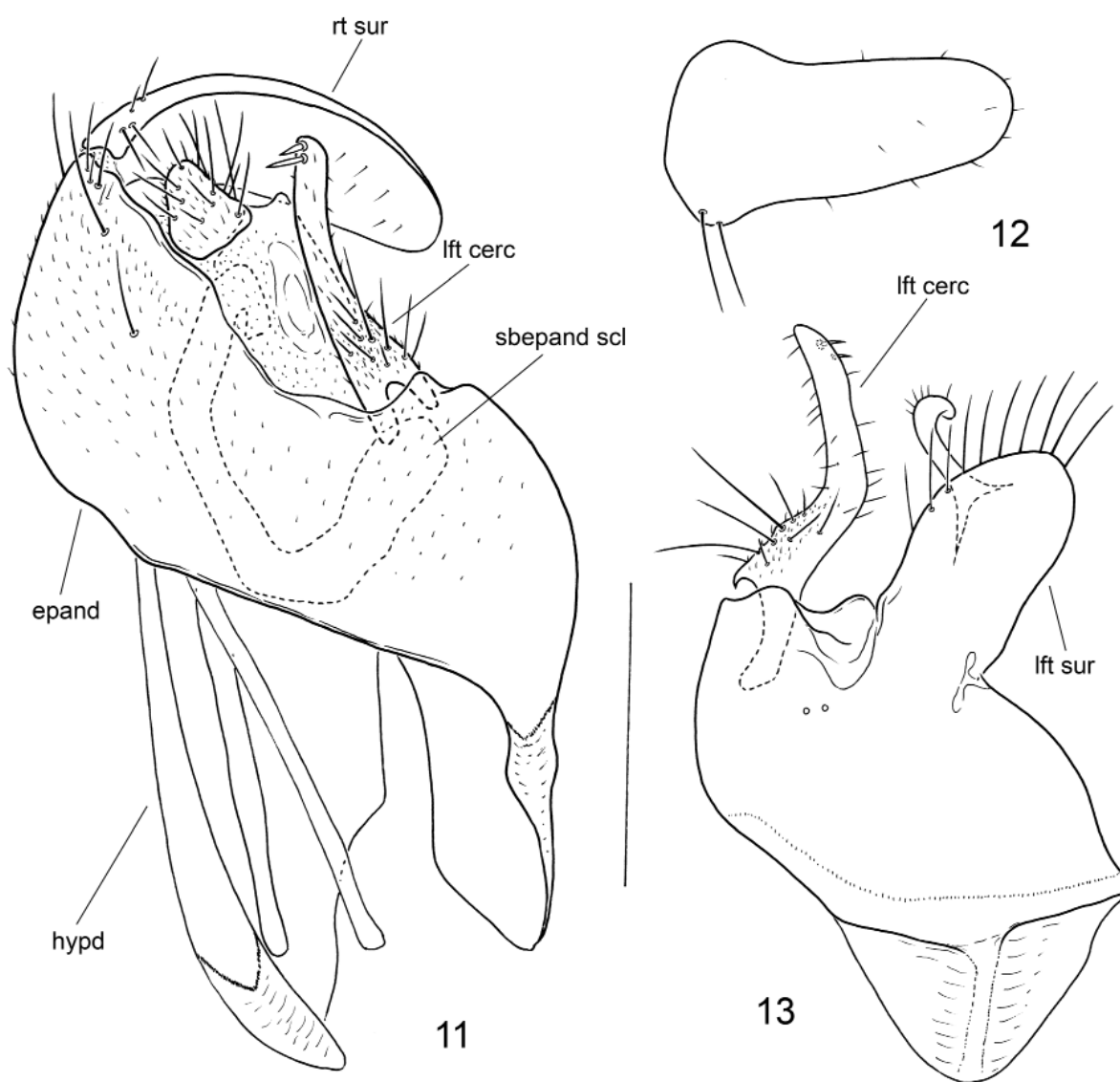


Fig. 11–13. *Tachyempis cinerea* Melander, ♂: 11 — hypopygium, dorsal view; 12 — right surstylus, lateral view; 13 — left epandrial lamella, lateral view. Abbreviations: epand — epandrium; hypd — hypandrium; lft cerc — left cercus; lft sur — left surstylus; rt sur — right surstylus; sbepand scl — subepandrial sclerite. Scale bar is 0.1 mm.

Рис. 11–13. *Tachyempis cinerea* Melander, ♂: 11 — гипопигий, вид сверху; 12 — правый сурстиль, вид сбоку; 13 — левая лопасть эпандрия, вид сбоку. Сокращения: epand — эпандрий; hypd — гипандрий; lft cerc — левый церк; lft sur — левый сурстиль; rt sur — правый сурстиль; sbepand scl — субэпандриальный склерит. Масштаб: 0,1 мм.

Proboscis brown. Palpus unmodified, elongate ovate, nearly as long as proboscis; pale yellow, clothed in dense minute silvery white setulae giving to palpus silvery glisten in some view, with some scattered short yellowish setae along lower margin.

Thorax entirely black, with black setae; postpronotal lobe and scutum almost shiny (dorsal view), very faintly light grey tomentose (more distinct in anterior view); prosternum, proepisternum and entire mesopleuron rather densely whitish grey tomentose (in some view prosternum and proepisternum appearing denser tomentose), scutellum and postnotum densely greyish tomentose. Postpronotal lobe elongate oval, lacking prominent setae, with scattered minute setulae. Mesonotum with 1 moderately long, strong notopleural, 3 minute setulae on postsutural supra-alar face, 1 very short postalar and 4 scutellars (apical pair moderately long, strong, inclinate, lateral pair minute); some minute setulae present behind postpronotal lobe and on notopleural depression anteriorly; acrostichals minute, arranged in 1–2 rows, lacking on prescutellar depression; dorsocentrals uniserial, minute (1 prescutellar pair longer).

Legs colour: largely yellow; mid and hind coxae sometimes brownish at base; fore and mid femora brownish on apical part dorsally, hind femur brownish on about apical 1/3–1/2; fore tibia brownish to brownish yellow (except extreme base), hind tibia brownish yellow at apex; tarsomeres 2–4 of all legs slightly darkened at apex, tarsomere 5 brown (in darker specimens fore tarsus slightly darker). Coxae clothed in pale setae of different lengths, fore coxa anteriorly, mid and hind coxae laterally densely whitish pollinose. Trochanters with unmodified setation. Fore femur thickened, whitish pubescent ventrally, bearing minute anteroventral and posteroventral pale setulae becoming somewhat longer near base. Fore tibia spindle-shaped, with unmodified setation. Mid femur unmodified, slender, with anteroventral and longer posteroventral yellow spinule-like setulae becoming longer near base. Mid tibia unmodified, with ventral spinule-like setulae towards apex; lacking prominent apical projection. Hind femur and tibia unmodified, lacking prominent setae. Hind basitarsus with 1 long, black, dorsal, appressed seta (2/3 to 3/4 of tarsomere 2 length).

Wing normally developed, rounded at apex, with unmodified venation; lacking prominent pattern, almost uniformly faintly infusate (somewhat darker along veins). One very short basal costal seta present. Second section of costa nearly 1.5 times longer than third section. Rs nearly as long as basal section of vein R_{4+5} . Vein R_{2+3} arched towards costa basally; meeting costa very appreciably beyond end of M_4 . Veins R_{4+5} and M_{1+2} parallel near wing-apex. Apical portion of M_4 nearly as long as its basal portion. Crossveins r-m and bm-m broadly separated; bm-m transverse. Cell br and bm of subequal width. Cell r_1 nearly 2.5 times narrower than cell r_{2+3} . Calypter brownish yellow, with yellow cilia. Halter with pale knob and brown stem.

Abdomen black brown, subshiny, faintly greyish pruinose (except slightly denser pruinose tergite 1 and shiny sternite 1); covered with scattered minute setulae; pregenital segments with long posteromarginal setae.

Hypopygium (Figs 11–13) moderately large, elongate oval, concolorous with abdomen. Right epandrial lamella elongate oval, somewhat produced mid-ventrally, bearing scattered, simple setae. Right surstylus (Figs 11, 12) differentiated, nearly digitiform, rather broad, long, overlapping terminalia posteriorly; bearing 2 moderately long closely set setae near base dorsally, with some scattered marginal setulae, no spine-like setae. Left epandrial lamella (Fig. 13) strongly shifted anteriorly relative to right epandrial lamella (dorsal

view); rounded apically, with large basal apodeme; 2 long setae on subapical part. Left surstylus barely differentiated from epandrial lamella, elongate oval, moderately large, with moderately long setae along dorsal margin and at apex; with slender internal projection bearing scattered setulae at apex. Cerci (Fig. 11) separated; left cercus shifted anteriorly relative to right cercus, basal portion produced inside epandrium; right cercus small, rather subtriangular (dorsal view), bearing moderately long simple setae; left cercus digitiform, very slender, strongly curved (left lateral view), in left lateral view longer than left surstylus, bearing cluster of several moderately long to rather long setae on about middle, 2 spinule-like setae at apex. Subepandrial sclerite semicircular, bare.

Female. Legs sometimes slightly darker. Hind basitarsus lacking dorsal seta. Otherwise as in male. Abdominal segments 6–8 pruinose. Cercus moderately long, slender, with scattered setulae.

REMARKS. *Tachyempis cinerea* can be readily distinguished from other Nearctic species of the genus by a curious, spine-like seta at the apex of hind basitarsus of the male. However, *T. longispina* Melander, 1928 known from Cuba and Jamaica as well as an undescribed species from Dominicana have this character as well.

Melander [1958] provided a description of interesting behaviour of *T. cinerea* (as *T. longipennis*): “This little fly was taken from a nesting site of the bee *Lasioglossum zephyrum* (Smith), where it would station itself near the nest entrance of the bee and make rapid passes at incoming pollen-laden bees.”

The photo of the male habitus of this species was published by Sinclair *et al.* [2023: 149, fig. C], as *Tachyempis* sp.

DISTRIBUTION. Canada (Ontario); USA (Kansas, Illinois, Indiana, Michigan, New Mexico).

Tachyempis universalis (Melander, 1910)

Figs 3, 14–16.

Tachydromia universalis Melander, 1910: 60 (♂ and ♀), fig. 16 (wing). Type locality: USA, Chester County, Pennsylvania (by lectotype designation).

Tachyempis nervosa Melander, 1928: 290 (♀). Type locality: USA, California, Stanford; **syn.n.**

NOTES ON TYPE SERIES. *Tachydromia universalis*: Melander [1910] noted the following material: “Described from five specimens collected in the following widely separated localities: Chester County, Pennsylvania, June, 1902 (J. C. Bradley), Algonquin, Illinois, July 17, 1896 (Dr. Wm. Nason), and Austin, Texas.”

Tachyempis nervosa: Melander [1928] described this species from a single female: “Holotype, Stanford University, California, July, 1915 (Melander)”.

TYPE MATERIAL EXAMINED. *Tachydromia universalis*: **Syntypes**: Penn. Chester Co. 6 [hand-written] // TYPE *Tachydromia universalis* Mel. [red label] // AL Melander Collection 1961 (♂, USNM); same data except red label “Paratype” (2 ♀♀ [on one pin], USNM); sex? [abdomen missing], Austin Tex // Paratype *Tachydromia universalis* Mel. [red label] // AL Melander Collection 1961 (USNM); Algonquin, Ill. 7.17.94–134 [data hand-written] // 5206 [hand-written] // Paratype *Tachydromia universalis* Mel. [red label] // AL Melander Collection 1961 (1 ♀, USNM).

Tachyempis nervosa: **Holotype**, ♀, labelled: Stanford / Jul'15, Cal. / AL Melander // TYPE / *Tachyempis* / *nervosa* Mel. [led label] // AL Melander / Collection / 1961 (USNM).

ADDITIONAL MATERIAL EXAMINED. **USA, Virginia**: Great Falls, 14.ix.1913 // Fredk Knab Collection // *Tachyempis universalis* Mel. not type (1 ♀, USNM). **Washington**: Almota, 25.v.1913 // AL Melander,

Collection, 1961 (3 ♂♂, USNM); Goldendale, 23.vii.1921, A.L. Melander // AL Melander, Collection, 1961 (1 ♀, USNM); Lake Chelan, Lucerne, 29.vii.1919, A.L. Melander // AL Melander, Collection, 1961 (1 ♀, USNM); 6 mi. S. Wawawai, on Snake R., Whitman Co., 700 ft., 22.vi.1977, W. Turner, dripping spring // N.E. Woodly Collection, Donated 2002 // ♂ *Tachyempis universalis* Melander, det. W. Turner (1 ♂, 1 ♀, USNM).

DIAGNOSIS. Small greyish species; occiput almost entirely greyish pruinose, only with small shiny spot near margin of mouth-opening laterally; frons and vertex entirely greyish pruinose (including ocellar triangle). Male: palpus whitish; female: palpus mostly brownish.

REDESCRIPTION. Male (Fig. 3). Length: body 1.6–1.8 mm, wing 1.6–1.7 mm. Head black. Occiput almost

entirely greyish pruinose (including vertex), only with small shiny spot near margin of mouth-opening laterally; 2 very short black wide apart latero-clinate verticals; scattered short pale setae on lower part, row of similar postoculars. Ocellar triangle pruinose; 2 short, black, latero-clinate ocellars. Frons rather broadly V-shaped, near anterior ocellus nearly 2 times as broad as above antennae, with slightly bowed margins opposite ocellar triangle, above antennae about 2.5 times as broad as anterior ocellus; entirely greyish pruinose. Antenna with scape and pedicel yellow to brownish yellow, postpedicel and stylus brown; postpedicel small, rather drop-like; stylus apical, nearly 3.0 times as long as pedicel and postpedicel combined, faintly pubescent. Proboscis brown. Palpus unmodified, ovate, moderately large, slightly longer than proboscis, whitish; clothed in dense minute silvery white

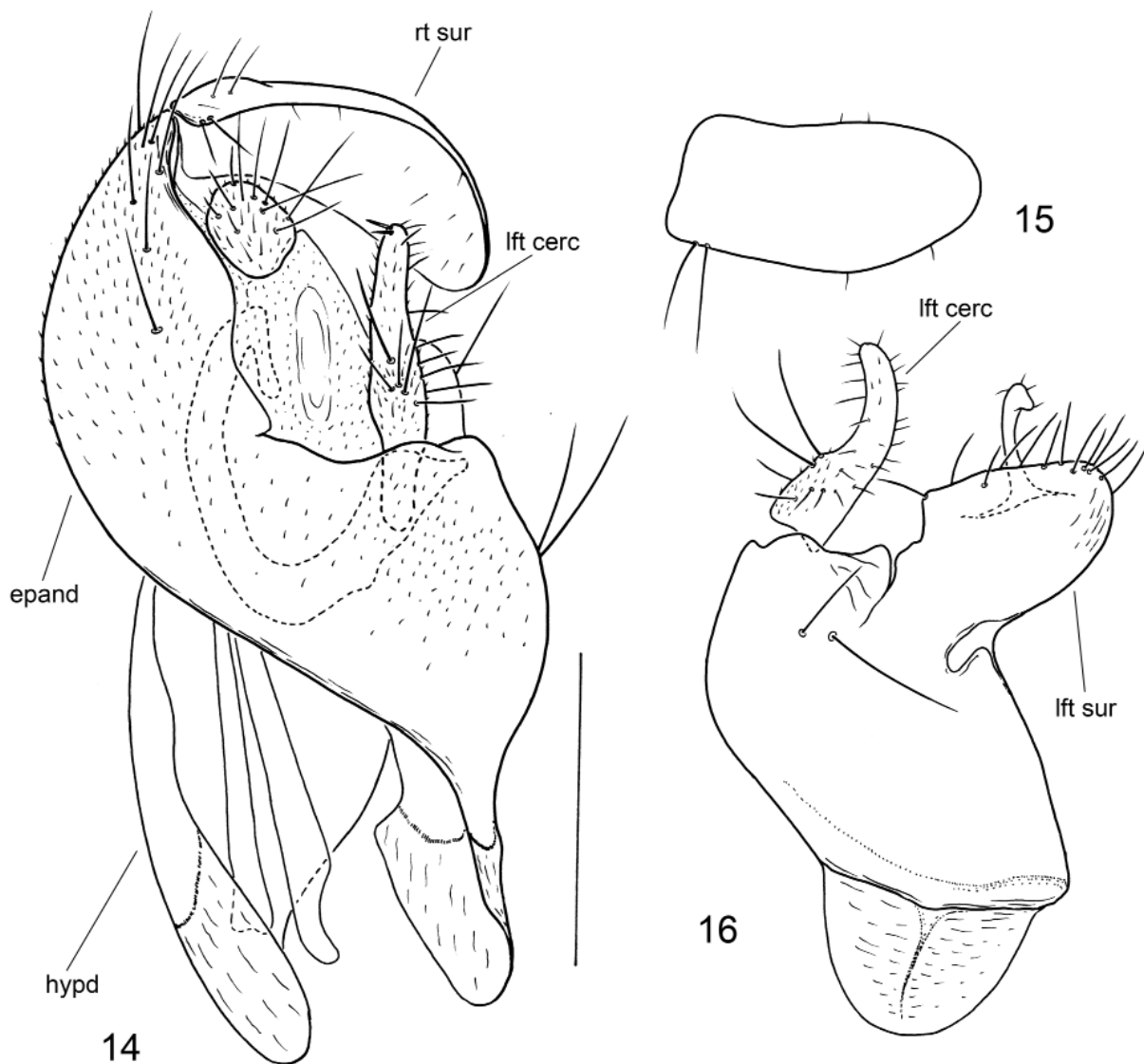


Fig. 14–16. *Tachyempis universalis* (Melander), ♂: 14 — hypopygium, dorsal view; 15 — right surstylus, lateral view; 16 — left epandrial lamella, lateral view. Abbreviations: epand — epandrium; hypd — hypandrium; lft cerc — left cercus; lft sur — left surstylus; rt sur — right surstylus. Scale bar is 0.1 mm.

Рис. 14–16. *Tachyempis universalis* (Melander), ♂: 14 — гипопигий, вид сверху; 15 — правый сурстиль, вид сбоку; 16 — левая лопасть эпандрия, вид сбоку. Сокращения: epand — эпандрий; hypd — гипандрий; lft cerc — левый церк; lft sur — левый сурстиль; rt sur — правый сурстиль. Масштаб: 0,1 мм.

setulae giving to palpus silvery glisten, bearing scattered, short, pale, fine setae.

Thorax entirely black, with black setae; postpronotal lobe and mesoscutum subshiny, faintly pale grey tomentose (dorsal view); prosternum, proepisternum, scutellum, postnotum and entire mesopleuron densely whitish grey tomentose. Postpronotal lobe elongate oval, lacking prominent setae, with scattered minute setulae. Mesonotum with 1 moderately long, strong notopleural (usually with additional short seta anteriorly), 1 postalar and 4 scutellars (apical pair moderately long, strong, inclinate, lateral pair minute); some minute setulae present behind postpronotal lobe and on notopleural depression anteriorly; acrostichals minute, biserial, lacking on prescutellar depression; dorsocentrals uniserial, minute (1 prescutellar pair longer).

Legs extensively yellow to brownish yellow; mid and hind coxae rather brownish yellow; fore femur brownish yellow near apex dorsally, mid and hind femora brownish on about apical 1/3 dorsally (usually somewhat broader on hind femur); tibiae somewhat darkened at apex; tarsomeres 2–4 rather brownish yellow, tarsomere 5 brown. Coxae clothed in pale setae of different lengths; fore coxa densely whitish pruinose anteriorly. Trochanters with unmodified setation. Fore femur thickened, whitish pubescent ventrally, bearing minute anteroventral and posteroventral pale setulae becoming somewhat longer near base. Fore tibia spindle-shaped, with unmodified setation. Mid femur unmodified, slender, with anteroventral and longer posteroventral yellow spinule-like setulae becoming longer near base. Mid tibia unmodified, with hardly prominent ventral spinule-like setulae, lacking prominent apical projection. Hind femur and tibia unmodified, lacking prominent setae. Hind basitarsus with simple setulae.

Wing normally developed, rounded at apex, with unmodified venation; membrane lacking prominent pattern, almost uniformly faintly infuscate (somewhat darker along veins). One very short basal costal seta usually present. Second section of costa nearly 1.5 times longer than third section. Rs slightly longer than basal portion of vein R_{4+5} . Vein R_{2+3} arched towards costa on basal part. Veins R_{4+5} and M_{1+2} parallel near wing-apex. Apical portion of M_4 as long as to slightly longer than its basal portion. Crossveins r-m and bm-m broadly separated; cross-vein bm-m transverse. Cell br and bm of subequal width. Cell r_1 nearly 2.5 times narrower than cell r_{2+3} . Calypter brown, with yellowish cilia. Halter with pale knob and brownish yellow stem.

Abdomen black brown, faintly greyish pruinose, tergites subshiny in dorsal view; covered with scattered minute setulae; pregenital segments with long, dark posteromarginal setae.

Hypopygium (Figs 14–16) moderately large, elongate oval, concolorous with abdomen. Right epandrial lamella elongate oval, somewhat produced mid-ventrally, bearing scattered, simple setae. Right surstylus (Figs 14, 15) differentiated, nearly digitiform, rather broad, long, overlapping terminalia posteriorly; bearing 2 moderately long closely set setae near base dorsally, with some scattered marginal setulae, no spine-like setae. Left epandrial lamella (Fig. 16) strongly shifted anteriorly relative to right epandrial lamella (dorsal view); rounded apically, with large basal apodeme; 2 long setae on subapical part. Left surstylus barely differentiated from epandrial lamella, elongate oval, moderately large, with moderately long setae along dorsal margin and at apex; with slender internal projection bearing scattered setulae at apex. Cerci (Fig. 14) separated; left cercus shifted anteriorly relative to right cercus, basal portion produced inside epandrium; right cercus small, subglobular, bearing moderately long simple setae; left cercus digitiform, very slender, slightly curved (left

lateral view), in lateral view nearly as long as left surstylus, bearing cluster of several moderately long to rather long setae on about middle, 2 short, somewhat stronger setae at apex. Subepandrial sclerite semicircular, bare.

Female. Palpus largely brownish, paler closer to base. Otherwise as in male. Abdominal segments 6–8 densely pruinose. Cercus moderately long, slender, with scattered setulae.

DISTRIBUTION. USA (California, Illinois, Pennsylvania, Texas, Virginia, Washington).

KEY TO NEARCTIC SPECIES OF *TACHYEMPIS*

1. Thorax with pale setae; 1 moderately long, postpronotal seta present. Palpus subrectangular. [Additional characters: palpus pale yellow in male and dusky yellow in female (usually slightly darkened apically in both sexes)] *T. agens* (Melander)
- Thorax with black setae; postpronotal seta absent. Palpus oval 2
2. Frons and vertex entirely greyish pruinose (including ocellar triangle) *T. universalis* (Melander)
- At least vertex shiny between eye margin and ocellar triangle 3
3. Frons and vertex entirely shiny (including ocellar triangle). Palpus with dark subapical seta. Male: hind basitarsus with simple setulae *T. calva* (Melander)
- Only vertex shiny between eye margin and ocellar triangle. Palpus with pale setulae. Male: hind basitarsus with 1 strong, long, black, dorsal subapical seta *T. cinerea* Melander

Discussion

Tachyempis is the only primarily tropical and subtropical group of Tachydromiini. Although, some species occurs in the regions with temperate climate. The Nearctic species of *Tachyempis* are known mostly from the southern states of the USA and Mexico, penetrating to the north only as far as Ontario of Canada (*T. cinerea*) and Washington of the USA (*T. agens*, *T. universalis*). A robust cladistic analysis is beyond the scope of our paper, however, the Nearctic species of *Tachyempis* probably belong to two phylogenetic lineages. The first lineage includes only *T. agens* differing from other species by the shape of the palpus, presence of postpronotal seta, pale main setae of the thorax, presence of spines at the base of the right surstylus and unmodified left cercus. Remaining four species belong to a separate lineage based primarily on a similarity of the male terminalia (e.g., similar modification of the left cercus). The close relationships of the Nearctic and Neotropical species of *Tachyempis* are quite evident. For example, *T. cinerea* constitutes a separate complex with *T. longispina* (Cuba, Jamaica) and an undescribed species from Dominicana sharing a spine-like apical seta on the hind basitarsus of the male. Nothing is known about biology of the Nearctic species of *Tachyempis*. The presence of the extensively tomentose thorax may suggest that these species prefer sunny, open habitats, like many species of *Platypalpus* (but the mesoscutum is shiny in some Neotropical and in a single Afrotropical

species). Melander [1910] just notes that he observed *T. agens* actively running about the ground and stalks in wheat fields. According to label data, some Neotropical species occur high in mountains (up to 2200 m). To conclude, we hope that this paper will form a starting point for further studies of this group.

Competing interests. The authors declare no competing interests.

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