

A New Genus and Species of the Picture-Winged Flies (Diptera: Ulidiidae: Otitinae) from Mexico

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A New Genus and Species of the Picture-Winged Flies (Diptera: Ulidiidae: Otitinae) from Mexico. Hernández-Ortiz V., Kameneva E. P. & Korneyev V. A. *Proteseia* Korneyev & Hernández, gen. n. (type species: *Proteseia steyskali* Hernández & Kameneva, sp. n.) is described from Mexico (Veracruz: Los Tuxtlas). The new species superficially resembles species of the genus *Pseudoseioptera* Stackelberg in the wing pattern, completely setulose vein R_1 , and in the head and body coloration, differing from them by having 2 supraalar, 2 anepisternal and 1 katépisternal setae, long spinulose phallus in a male and 3 subsphaerical spermathecae in a female.

Новый род и вид мух-лентокрылок (Diptera: Ulidiidae: Otitinae) из Мексики. Эрнандес-Орtiz В., Каменева Е. П. и Корнеев В. А. *Proteseia* Korneyev & Hernández, gen. n. (типовой вид: *Proteseia steyskali* Hernández & Kameneva, sp. n.) описывается из Мексики (типовая местность: Веракрус: Тукстлас). Новый вид внешне напоминает виды рода *Pseudoseioptera* Stackelberg рисунком крыла, жилкой R_1 по всей длине покрытой волосками, а также окраской тела, отличаясь от них наличием 2 супралалярных, 2 анэпистернальных и 1 катэпистернальной щетинки, покрытого длинными шипами фаллуса у самца и 3 полусферических сперматек у самки.

The picture-winged flies Ulidiidae (= Otitidae) (see papers of Kameneva & Korneyev (1994) for the explanations on this synonymy) are rather small family of some 700 species with saprophagous and phytophagous larvae, distributed predominantly in the New World and, in less degree, in Palaearctics, with few species widespread into tropical Africa, Asia, and into Oceania and Australia.

Faunas of Palaearctic and Nearctic Regions are comparatively well examined (for further references see: Kameneva, 1992; Kameneva & Korneyev, 1994; Steyskal, 1987), whereas Nearctic and Neotropical ulidiids were rarely treated taxonomically since Hendel's reviews of the world faunas of the Ulidiinae and Pterocallinae (Hendel, 1909a; 1909b; 1909c; 1910; Steyskal, 1968; 1982; Hernández-Ortiz, 1988; Hernández-Ortiz & Arias-Velázquez, 1989).

There are considerable material on the picture-winged flies deposited in the entomological collections of Instituto de Ecología A. C., Xalapa, Veracruz (IEXA), and of the Instituto de Biología, UNAM, Mexico D. F. (IBUNAM), that includes several undescribed species. They were partially described by Hernández-Ortiz (1988), and Hernández-Ortiz & Arias-Velázquez (1989). This paper goes on comprehensive taxonomic treatment of this material.

Subfamily Otitinae

Tribe ?Cephalini

Proteseia Korneyev & Hernández, gen. n.

Type species: *Proteseia steyskali* Hernández & Kameneva, sp. n.

Description. Head (fig. 1–2) 1.25–1.3 times higher than long. Frons setulose; all the setulae proclinate. Vertical plates with 2 or, anterior pair shorter than posterior. Ocellar setae laterocliniate, shorter, than posterior orbital. Eyes oval, 1.4–1.5 times as high as long. Lunula inconspicuous, with few setulae. Face concave, as wide as high in the middle and much wider than high in the lower half, antennal grooves shallow, hardly noticeable along facials. Clypeus large, convex, produced anteriorly. Facials and genae narrow. Occiput very slightly swollen in lower half, nearly flat in the upper one. Postocellar setae longer, than ocellars, divergent; inner and outer verticals well-developed. Postvertical and postocular setae slightly shorter, than anterior orbital seta. Genal and postgenal setae long. Prementum large, swollen; labella fleshy, broad, with numerous denticles on surface of pseudotracheae, making oral disk rasper-like; palpi wide, triangular.

Thorax robust, subshining; only proepisternum and lower margin of katepisternum whitish microtomentose. Scutum slightly convex, with numerous setulae, separated by 3 sparsely whitish tomentose stripes and arranged into 4 setulose longitudinal areas, usually of 1–2 rows of setulae in each. Scutellum convex, shining, very sparsely microtrichose. Subscutellum large. Anepisternal suture distinctive. Proepisternal setae present, but weak. 1 postpronotal, 2 notopleural setae. 2 supraalar, 1 intraalar, 1 postalar, 2 dorsocentral setae in posterior portion of scutum; 1 well-developed acrostichal seta between the levels of anterior and posterior dc; 4 scutellars. 2 anepisternal 1 katepisternal seta distinctive, large. Anepimeron bare.

Wing (fig. 3) hyaline, microtrichose on all surface. Costa with 2 rather distinct breaks, with 2 rows of rather short setulae from humeral break to the apex of R_{2+3} ; well-developed seta before humeral break on ventral side; no costal spurs. Vein Sc complete, bowed at acute angle in apical portion. Stigma long. Vein R_1 setulose above on all its length; its apex is situated far distad from the middle of wing length, and on line with dm-cu vein. Veins R_{4+5} and M strait in the apical portion. Cell r_{4+5} slightly and evenly narrowed towards its apex. Vein CuA_2 slightly sinuate, cell cup with a very short extension at its lower apex. Alula developed. Calypters rather narrow, with long blackish or whitish ciliae; upper calypter slightly longer than lower one.

Legs non-modified, femora and tibiae setulose, forefemur with one row of postero-ventral setae in apical half and two rows of setae over all the posterior surface, midfemur with a ventral row of long setae; hindfemur with one subapical setae on dorsal surface. Midtibiae with one apical spur and shorter spur-like setae. Tarsi setulose, with dark enlarged setulae on apical margin of tarsomeres 1–4. Claws simple.

Abdomen shining, rather densely setulose. In male, protandrial segments as in all other Ulidiidae, moderately developed, without spiracles. Hypandrium (fig. 5-6) with shallow phallic guide. Gonostyli button-like, with 3-4 trichoid sensillae, pregonites rather large, slightly bowed, with few setulae. Phallus long and wide, without glans or sclerotized preglans, with two sclerotized taeniae on anterior surface, and on caudal surface with stout, acute (in some areas blunt and spatulate) spinulae on medial, and fine setulae on subbasal and subapical portion; it is coiled and hidden in the rest into membranous pouch at ventral surface on right side of abdomen.

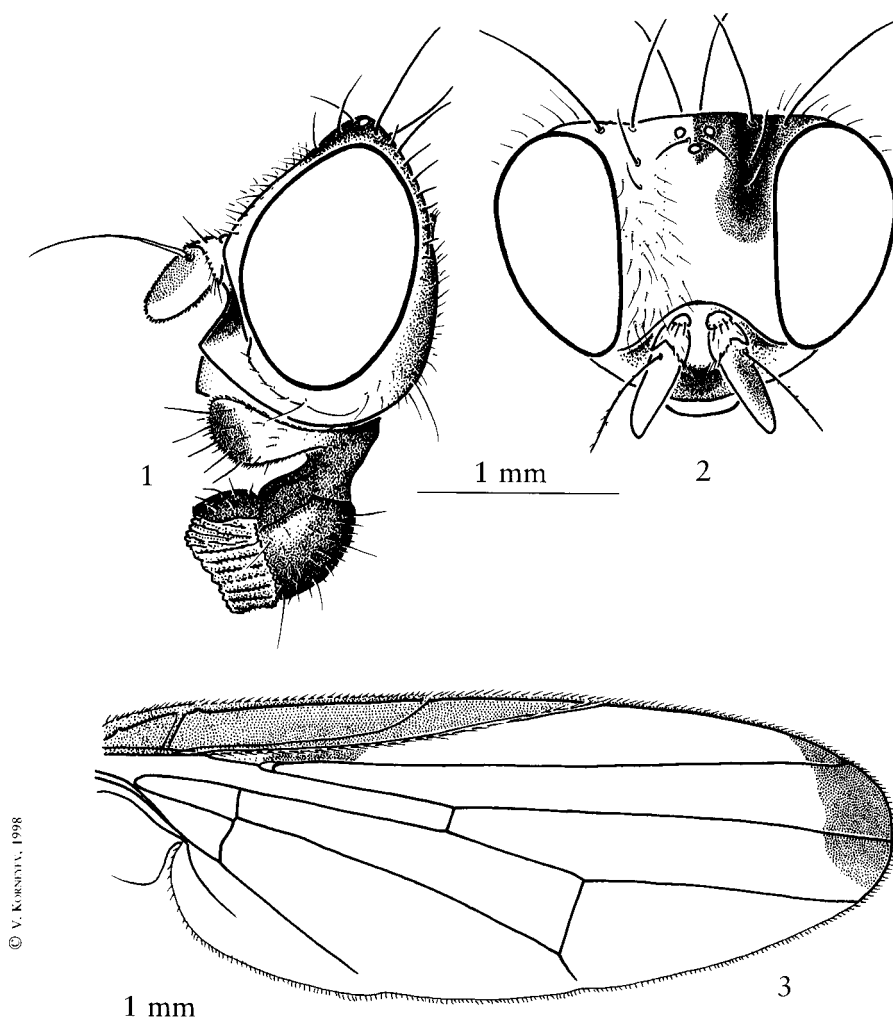
Epandrium (fig. 4-5) vertical, slightly expanded in dorso-ventral direction. Surstyli joined to epandrium medio-caudally and laterally, with more or less distinct seam, large, mesally curved, with one paracercal (postero-medial) and one postero-ventral large claw-like prensisetae and few setulae on ventro-medial surface (fig. 4). Cerci rather large, strongly extending ventrally.

In female abdominal tergum 6 is short, but not hidden under tergum 5 nor reduced in width; sterna 4-6 with anterior apodemes. Terminalia similar to those of other Ulidiidae. Tergosternum 7 large and flattened, eversible membrane with tiny multidentate squamae posteriad of taeniae; ventral taeniae with a ventral pouch-like extension each (fig. 10); tergosternum 8 with dorsal and ventral rows of sensillar setulae; cercal unit divided from it with a seam; 8-10 moderately long cercal setae (fig. 11); 2+1 subsphaerical, sparsely papillose spermathecae, pair of right spermathecae on a common stem duct (fig. 12).

Discussion. In the key to genera of Otitinae (including Pterocallini) of the Americas south of the United States (Steyskal, 1982) this genus runs to *Seioptera* Kirby. It differs from the latter, as well as from the other genera of the Seiopterini, in the absence of all the apomorphies of that tribe; Seiopterini usually have 2 katapisternal setae, the anepisternal setae and the apodemes of abdominal sternites 4-6 always lacking, as well as 2+2 spermathecae in females and no paracercal prensisetae in males.

The new genus belongs to the subfamily Otitinae because of having strongly spinulose phallus (apomorphy of the subfamily), in combination with the presence of anterior apodemes of abdominal sternites 4-6 (plesiomorphy). It does not possess any apomorphies of the Otitini (the spermathecae elongate to very long), of the *Myennis*-group of genera (the subepandrial sclerite with a large unpaired lobe between the surstyli), and most synapomorphies of the Cephalini (body elongate, ant-like, face straight, prementum long, cell cup short or reduced, without an extension).

Proteseia shares numerous characters with the genera of the Cephalini. These are the large, subtriangular palpi, strongly produced lower face margin, small proepisternal seta, scutal setulae divided by 3-5 bare, finely microtomentose stripes (synapomorphies?), well-developed paracercal prensisetae in male, and subglobose, sparsely papillose spermathecae in female (plesiomorphies?). *Proteseia* is obviously related to the genera of this tribe. Nevertheless, including of this genus into Cephalini requires re-definition of the latter tribe, that is out of scope of this paper.



Figs 1-3. *Proteseia steyskali*. 1 — head, left lateral view; 2 — same, anterior view; 3 — right wing.

Species included. The type species, *P. steyskali*, sp. n.

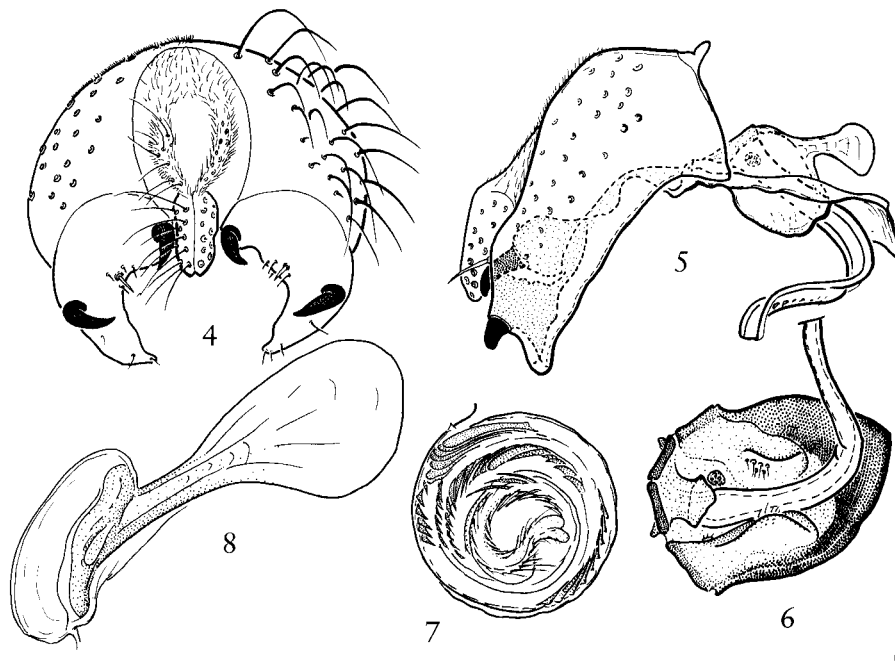
Seioptera importans Hennig from Central Chile that have 2 supraalar, 2 anepisternal seta, 1 katepisternal seta and the bluish body sheen, may also belong here, although Hennig (1941) pointed out, that it has the vein R₁ bare.

Etymology. The name of the genus is an anagram of the name *Seioptera*, reflecting superficial similarity of this genus to the genera of Seiopterini, especially to *Pseudoseioptera* Stackelberg (see: Kameneva & Korneyev, 1994, 1995). Gender feminine.

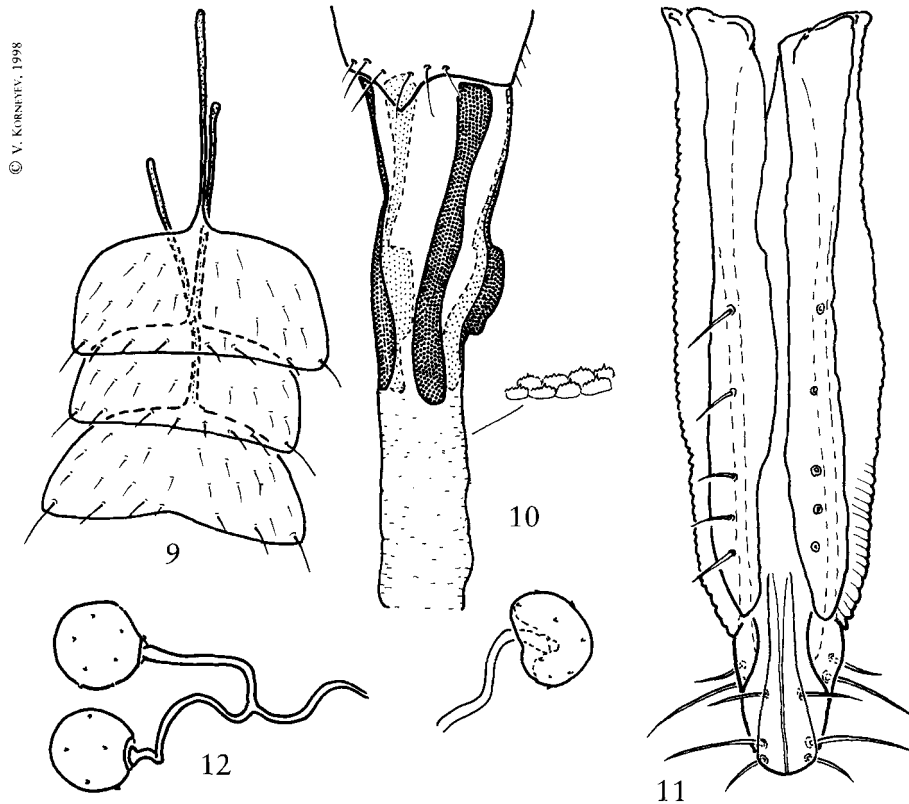
Proteseia steyskali Hernández & Kameneva, sp. n.

Material. Holotype: ♂: Mexico, Veracruz, Estación de Biología Los Tuxtlas, 18.02.1990 (Pérez) (IEXA). Paratypes 5 ♂, 2 ♀: idem, 18.02.1990 (Pérez) (IEXA; SIZK), 21–28.02.1985 (Ibarra) (SIZK), 08.10.1985 (Hernández, Sinaca), 17.09.1989 (Ramírez) (IEXA)

Description. Male. Head (fig. 1) ratio (length:height:width) = 1:1.3:1.66. Frons (fig. 3) 1.15 times as long as wide, reddish with ocellar triangle and vertical plates shining; mesofrons opaque, reddish-yellow; lateral margins narrowly silver-white microtrichose, reddish yellow; parafacialia light yellow, narrow, with slight silver-white tomentosity. Frontal setulae black, proclinate or, in the middle, inclinate. Lunula orange, very small. Face as long as wide in its narrowest portion; its surface silvery tomentose in its upper half, between antennae and in antennal grooves, shining black to brown in lower half, with the lower lateral corners yellow, often semi-transparent. Clypeus shining, brownish yellow. Gena opaque yellow or brownish, subgena shining yellow. Postcranium, or occiput, yellow at margins, brownish-black in the middle; postocular and occipital setulae and setae black. Antennae orange; scape and pedicel with black setulae; first flagellomere blackish antero-dorsally, whitish microtrichose, 1.9–2.0 times as long as wide, broadly rounded at



Figs 4–8. *Proteseia steyskali*, male genitalia. 4 — epandrium, posterior view; 5 — epandrium, right lateral view; 6 — hypandrium, ventral view; 7 — distiphallus; 8 — ejaculatory apodeme.



Figs 9-12. *Proteseia steyskali*, female terminalia. 9 — tergites 4-6; 10 — eversible membrane, dorsal view; 11 — aculeus, ventral view; 12 — spermathecae.

apex; arista yellow in basal 1/5, black in apical portion, shortly, but distinctly brownish pubescent. Mouthparts brownish-yellow, prementum black, shining. Palpi yellow, black in apical 1/3, with sparse and rather long black setulae.

Thorax dark brown to black, with greenish sheen on mesonotum and pleura. Scutum 1.3 times as long as wide, black setulose and sparsely brownish microtomentose, with 3-5 whitish microtomentose stripes bearing no setulae. Scutellum brown, shining, very sparsely microtrichose. Subscutellum shining, dark brown. Mediotergite shining black. Set of setae normal for the genus, anterior supraalar seta 0.5-0.6 times as long as the posterior one. All the setae and setulae black.

Wing (fig. 6) hyaline, 2.65-2.7 times as wide as long; cell bc and c brown; sc dark brown. Apical spot extends 0.25-0.35 of distance from dm-cu to apex. Calypters light yellow, with whitish ciliae. Halteres whitish yellow.

Legs. All the coxae and femora black, except the extreme knees brownish yellow, with black setae and setulae. Tibiae brown, black setulose. Tarsi yellow, with black setulae and brownish ventro-marginal setulae on tarsomeres 3–5; claws black.

Abdomen completely shining black, with greenish sheen with setulae and setae black except the pleura opaque. Postabdomen as shown on figs 10–12, 14–16. Each surstylus with one prensiseta in the upper portion (the paracercal prensiseta) and one prensiseta in the postero-ventral portion of the subepandrial sclerite (the distal prensiseta), and 4–5 smaller setae between them.

Female. Similar to male in general features. Terminalia as shown on figs 10–12, 14–16.

Etymology. This species is named in memory of famous American entomologist, George Constance Steyskal (1909–1996), in recognition of his contribution to the study of the picture-winged flies.

References

- Hennig W. 1941. *Seioptera*, eine für die taxonomische Methodik interessante Dipterenartung (Dipt.). — *Arb. morph. und taxon. Entomol.* 8(1): 73–76.
- Hendel F. 1909a. Uebersicht der bisher bekannten Arten der Pterocallinen (Diptera: Otitidae). — *Dtsch. Entomol. Z.* 1909(Beiheft): 1–84.
- Hendel F. 1909b. Diptera, Fam. Muscaridae, Subfam. Pterocallinae. — *Genera Insectorum.* 96: 1–50.
- Hendel F. 1909c. Beitrag zur Kenntnis der Ulidiinen Pterocallinen (Dipt.). — *Wien. Entomol. Ztg.* 28: 247–270.
- Hendel F. 1910. Diptera, Fam. Muscaridae, Subfam. Ulidiinae. — *Genera Insectorum.* 106: 1–76.
- Hernández-Ortiz V. 1988. Reconsideración taxonomica del genero *Dyscrasis* Aldrich y la descripción de *Pseudodyscrasis* gen. nov. (Diptera: Otitidae). — *Folia Entomológica Mexicana.* (74): 181–188.
- Hernández-Ortiz V., Arias-Velázquez F. 1989. Dos especies nuevos del genero Neotropical Pterocalla (Diptera: Otitidae). — *Anales Inst. Biol. Univ. Nac. Autón. México, Ser. Zool.* 60(3): 399–404.
- (Kameneva E.P.) Каменева Е.П. 1992. Мухи-лентокрылки (Diptera, Otitidae) Восточной Европы, азиатской части России, Казахстана и Средней Азии. — *Вестн. зоол.* (4): 24–30.
- Kameneva E. P., Korneyev V. A. 1994 (1993). Holarctic Genus *Pseudoseioptera* Stackelberg (Diptera: Ulidiidae (= Otitidae)). Part I. Phylogenetic relationships and taxonomic position. — *J. Ukr. entom. Soc.* 1(2): 65–72.
- Kameneva E. P., Korneyev V. A. 1995 (1993). Holarctic Genus *Pseudoseioptera* Stackelberg (Diptera: Ulidiidae (= Otitidae)). Part II. Redescription of the Genus and Review of Species. — *J. Ukr. entom. Soc.* 1(3–4): 69–72.
- Steyskal G. C. 1968. 54. Family Otitidae (Ortalidae; including Pterocallidae, Ulidiidae). — *A catalogue of the Diptera of the Americas south of the United States.* São Paulo: Dept. Zool., Secr. Agric. (54): 1–31.
- Steyskal G. C. 1982. A key to genera of the subfamily Otitinae of the Americas south of the United States (Diptera, Otitidae). — *Mem. Entomol. Soc. Wash.* 10: 139–144.
- Steyskal G. C. 1987. Otitidae. 63. — *Manual of Nearctic Diptera. Vol. 2.* Ottawa: Biosystematics Research Institute: 799–808. (Agriculture Canada Monograph No. 28)