

UDC 595.773.4(728)

A NEW GENUS AND SPECIES OF THE TRIBE LIPSANINI (DIPTERA, ULIDIIDAE) FROM CENTRAL AMERICA

E. P. Kameneva

Schmalhausen Institute of Zoology NAS of Ukraine,
vul. B. Khmel'nits'kogo, 15, Kyiv, 01601 Ukraine
E-mail: kameneva@entom.freenet.kiev.ua

Accepted 21 January 2005

A New Genus and Species of the Tribe Lipsanini (Diptera, Ulidiidae) from Central America. Kameneva E. P. — *Vladolinia dolini* Kameneva, gen. et sp. n. from Costa Rica is described. It superficially resembles *Zacompsia* Coquillett in the elongate head and body and similar wing pattern, differing by the eye longer than high, acute fronto-facial angle, prominent clypeus, wide anal lobe and conical, dorsally protruding scutellum.

Key words: Diptera, Ulidiidae, Lipsanini, Central America, new genus and species.

Новые род и вид трибы Lipsanini (Diptera, Ulidiidae) из Центральной Америки. Каменева Е. П. — Описан *Vladolinia dolini* Kameneva, gen. et sp. n. из Коста-Рики, который внешне напоминает виды рода *Zacompsia* Coquillett продолговатой формой головы и тела, а также сходным рисунком крыла, отличаясь от них шириной анальной лопасти крыла, горизонтально-овальной формой глаза, наличием острого угла между лицом и лбом, выступающим наличником и конусообразным, вертикально удлинённым щитком.

Ключевые слова: Diptera, Ulidiidae, Lipsanini, Центральная Америка, новые род и вид.

Introduction

The picture-winged flies — Ulidiidae (= Otitidae) — are rather small family of some 700 species, distributed predominantly in the New World and, to a lesser degree, in the Palearctic Region, with few species widespread into tropical Africa, Asia, and into Oceania. Based upon available collection material, approximately 134 species of 31 genera of the family Ulidiidae are recognized in Central America, of which at least 66 species and 2 genera are undescribed. The Mesoamerican fauna is estimated to include about 40 genera and 160 species (Steyskal, 1968, 1971; Kameneva, 2004; Kameneva, Korneyev, 2005).

While examining material in the collection of the Instituto Nacional de Biodiversidad (Santo Domingo, Costa Rica), some uncommon specimens attracted my attention, certainly belonging to an undescribed species. This new species belongs to the tribe Lipsanini (= Euxestini) of the subfamily Ulidiinae, and is related to *Eumecosomyia* Hendel, *Eumetopiella* Hendel, *Stenomyia* Hendel and *Zacompsia* Coquillett. It certainly does not fit the diagnosis of any known genus and deserves establishment of a new monotypic genus.

Lipsanini are most abundant in tropical and subtropical parts of the Americas, reaching temperate zones of the USA and Canada, and Argentina and Chile. Some genera are endemic to Pacific islands, while others, like *Acrosticta* Loew, *Euxesta* Loew, *Pseudeuxesta* Coquillett, are introduced into Africa, Europe and islands of Indian Ocean. Except for dull gray or brown Oceanian species, coloration in most species of this tribe is metallic green or bluish.

The material is deposited in the collections of the Instituto Nacional de Biodiversidad, Santo Domingo, Heredia, Costa Rica (INBio) and Tel Aviv University, Israel (TAU).

Morphological terminology follows J. F. McAlpine (1981).

Vladolinia Kameneva, gen. n.

Type species: *Vladolinia dolini* Kameneva, sp. n.

Diagnosis. Eye slightly longer than high. Ventral margin of face strongly protruding anteriorly. Frons with setulae in medial portion. Flagellomere 1 elongate, blunt.

Gena less than 0.5 times as high as eye. Vertex and mesonotum with greenish sheen. Thorax elongate, mesonotal scutum more than 1.4 times as long as wide. Scutellum cone-shaped, protruding dorsally. Prescutellar acrostichal setae lacking. Cell r_{4+5} apically narrowed, but not closed. Cell *bcu* closed with straight oblique vein. Vein $A_1 + CuA_1$ reaching posterior margin of wing. Anal lobe wider than cell *bcu*. Abdomen narrow, elongate; sternites 2–5 (–6 in female) almost as long as wide; without anteromedial apodemes. Surstylus without prenisetae, gonites moderately developed; phallus narrow, bare, without glans-like structure at apex. Aculeus narrow, with blunt apex. Two round smooth spermathecae.

Description. Head (plate II: fig. 2, 2) 1.0–1.2 times as long as high. Frons setulose; all the setulae proclinate. Vertex with greenish sheen; vertical plates with 2 or, anterior seta half as long as posterior seta. Ocellar triangle narrow and long, reaching almost to middle of frons length. Ocellar seta directed anteriorly and laterally, as long as anterior orbital seta. Compound eye oval, longer than high; its longest diameter 1.2–1.3 times as long as shortest diameter. Lunula inconspicuous, hidden underneath anterior margin of frons. Face receding in dorsal half and produced anteriorly, as wide as high in the middle and much wider than high in the lower half. Clypeus large, slightly convex, protuberant. Parafacial narrow. Gena less than 0.3 times as high as eye. Occiput slightly concave in upper medial portion, conspicuously convex posterior of eye margin, swollen in lower half. Antenna with short stipe and pedicel, and elongate flagellomere 1 twice as long as both preceding joints and blunt at apex. Postocellar setae divergent; each seta twice as long as ocellar seta; vertical setae strong; lateral vertical seta as long as postocellar; medial vertical seta 1.2 times as long as lateral seta. Postvertical and postocular setulae slightly shorter than anterior orbital seta. Peristomal setulae as long as ocellar seta. Genal seta slightly longer and thicker than peristomal setulae and postgenal setae long. Prementum large, swollen; labella fleshy, broad; palpi narrow, slightly widened at middle of length.

Thorax elongate, with greenish sheen, sparsely microtrichose. Scutum long and slightly convex. Scutellum strongly protruding dorsally, conical. Subscutellum moderately developed. Postpronotal lobe large. Prosternum trapezoid, bare, longer than wide. Proepisternum low. Anepisternal suture distinctive in dorsal half. Proepisternal seta lacking; 3–4 short setulae present. 1 postpronotal, 2 notopleural setae. 1 supra-alar, 1 intra-alar, 1 post-alar, 2 postsutural dorsocentral setae, anterior seta in front of wing base; prescutellar acrostichal setae lacking; 2 pairs of subequal scutellars: anterior directed dorso-laterally or antero-laterally, and posterior directed postero-dorsally. One long and one shorter seta in postero-dorsal part of anepisternum and one seta at postero-ventral corner, anterior of midcoxa. 1 katepisternal seta distinctive, large. Anepimeron bare. Metasternal postcoxal bridge absent.

Wing (plate II: fig 2, 1) narrow, hyaline, mostly brown microtrichose, with small areas of white microtrichia. Costa with 3 poorly distinguishable breaks, or constrictions (costagial, humeral and subcostal); 2 rows of moderately 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, slightly bowed before apex and meeting costa at acute angle. Stigma long. Vein R_1 with 2–9 setulae in apical half or third; its apex at middle of wing length and at level *R-M* vein. Veins R_{4+5} and *M* slightly approximated towards apex, but not touching, and cell r_{4+5} apically open, slightly narrowed apically. Crossvein *R-M* at level of R_1 apex. Cell *bcu* closed with oblique and almost straight vein CuA_2 . Vein $A_1 + CuA_2$ reaching posterior margin of wing. Anal lobe wider than cell *bcu*; vein A_2 present as fold. Alula developed. Calypters narrow, with long whitish ciliae; upper calypter slightly longer than lower one.

Legs long, unmodified, femora and tibiae setulose, forefemur with one row of posteroventral setae in apical half and two rows of setae over all the posterior surface, mid-

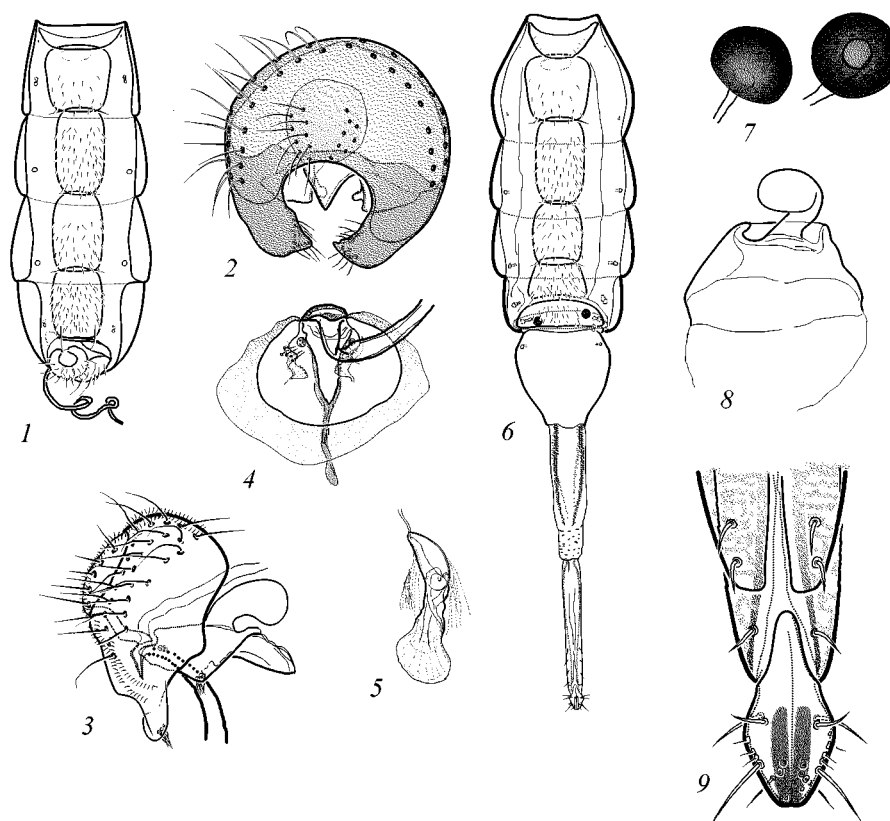


Fig. 1. *Vladolinia dolini*, terminalia: 1–5 – male; 6–9 – female; 1, 6 – abdomen, ventral view; 2 – epandrium, posterior view; 3 – same, lateral view; 4 – hypandrium, ventral view; 5 – ejaculator apodeme; 7 – spermathecae; 8 – ventral receptacle; 9 – apex of aculeus.

Рис. 1. *Vladolinia dolini*, терминалии: 1–5 – самец; 6–9 – самка; 1, 6 – брюшко, вентрально; 2 – эпандрий, сзади; 3 – то же, справа; 4 – гипандрий, вентрально; 5 – аподема эякулятора; 7 – сперматеки; 8 – вентральный семяприемник вагины; 9 – вершина акулеуса.

femur without long setae; hindfemur with 2–3 suberect longer setae on dorsal surface. Midtibiae with one long apical spur-like seta and 2–3 shorter thickened setae. Tarsi setulose, with dark enlarged setulae on apical margin of tarsomeres 1–4. Claws simple.

Abdomen narrow, elongate; sternites 2–5 in both sexes slightly longer than wide, sternite 6 in female slightly wider than long; anterior margins without medial apodemes. Tergite 6 of female with one row of setulae; completely hidden underneath margin of tergite 5. Pleural membrane bare, slightly protruding from narrow area between tergites and sternites. Abdominal spiracles large, except almost inconspicuous first and second pair.

Male postabdomen. Sternites 6 and 7 narrow, bare. Sternite 8 with numerous setulae. Hypandrium (fig. 1, 4) with shallow phallic guide. Gonite slightly protruding, with additional lobe on each side and with 4–5 trichoid sensillae; button-like fields of trichoid sensillae at sides of phallic base developed. Phallic base with wide triangular, bare, semi-sclerotized fold (epiphallus?). Phallus moderately long and narrow, uniformly bare, without subapical spines or glans-like formations, coiled and hidden in the rest into membranous pouch at ventral surface on right side of abdomen. Epandrium dorsally setulose, round in posterior view, with short and blunt surstyli (fig. 1, 2, 3). Proctiger rather small, not protuberant, with a few setulae.

Female terminalia similar to those of other Ulidiidae. Tergosternum 7 moderately large and flattened, narrower than tergum 6; eversible membrane with 2 pairs of taeniae in anterior 0.75 of its length and tiny multidentate scales in posterior quarter; ter-

gosternum 8 narrow, transversely wrinkled, with dorsal and ventral rows of sensillar setulae; cercal unit separated, blunt oval, with 3 pairs of longer and one pair of shorter setae, plus several short trichoid sensillae (fig. 1, 9). Two subspheric, smooth spermathecae on two separate ducts (fig. 1, 7). Vagina with simple ventral receptacle as on figure 1, 8.

Discussion. In the key to genera of Ulidiinae (excluding Seiopterini) of Central America (Kameneva, Korneyev, in press) *Vladolinia* runs together with *Zacompsia* Coquillett. *Vladolinia* differs from the latter by the following characters: eye longer than high (higher than long in *Zacompsia*); scutellum cone-shaped, protruding dorsally (almost flat in *Zacompsia*); aculeus narrow, with cercal unit blunt oval, non-flattened (dorso-ventrally flattened, with flattened, apically pointed cercal unit in *Zacompsia*); anal lobe wider than cell bcu in (anal lobe narrower than or as wide as cell bcu in *Zacompsia*).

The new genus belongs to the tribe Lipsanini (= Euxestini) of the subfamily Ulidiinae because the female abdominal sternites 4–6 are without antero-medial apodemes, male have bare phallus without apical glans-like formation, surstyli without prenisetae (teeth-like setulae) and body in both sexes has green metallic sheen.

Vladolinia dolini Kameneva, **sp. n.** (fig. 1; plate II: fig 2)

Material. Holotype ♂: Costa Rica: Puntarenas: Est. San. Miguel: Puesto Cabo Blanco, 1 m, 23.02.1997 (Alvarado) (INBio). Paratypes: 21 ♂, 16 ♀: Costa Rica: Puntarenas: Est. San. Miguel: Puesto Cabo Blanco, 1 m, 23.02.1997, 18 ♂, 10 ♀; ibidem, Punta Coquitos, 1 m, 22.06.1997, ♂, 4 ♀ (Alvarado) (INBio); ibidem, Bahia Gigante, 9°53.8' N, 84°56' W, beach, 22.06.2001, 2 ♂, 2 ♀ (Freidberg) (TAU).

Description. Male. Head (plate II, fig. 2) reddish-brown, with dorsolateral portions of occiput, posterior portion of frons and ocellar triangle brown to black with greenish sheen. Head length: height: width ratio = 1 : 0.9 : 1.2. Frons 1–1.1 as long as wide, reddish-brown with many black setulae; ocellar triangle and vertical plates shining; mesofrons opaque, brown-reddish; lateral margins narrow silver-white microtrichose; parafacial narrow, dark yellow, with silver-white microtrichia. Frontal setulae black, proclinate or, in middle of frons, inclinate. All setae and setulae of head black. Face almost as long as wide in its narrowest portion; its surface white microtrichose in its upper half, between antennae and shining black to brown with greenish sheen in lower half. Clypeus large, convex, produced anteriorly and shining, brownish-yellow. Scapus and pedicel uniformly yellow, without darker marks, flagellomere 1 reddish-brown, 2–2.8 times longer than wide. Arista brown, 2–2.5 times longer than flagellomere 1. Palpus narrow, not extending beyond anterior oral margin, yellow, with longer black setulae at apex. Proboscis capitate, reddish-yellow with brown and black setulae.

Thorax brownish black with greenish sheen, sparsely whitish microtrichose, with antepnotum, postpronotal lobes, scutellum, subscutellum and mediotergite mostly subshining. Mesonotum with two subshining brownish microtrichose stripes without greenish sheen; postsutural portion of scutum with two copper-reddish vittae on sides, bluish, rather densely microtrichose between dorsocentral setae. Scutum 1.5 times as long as wide. Scutellum brownish-black, with stronger greenish sheen on anterior surface and often brown on posterior surface. All setae and setulae of the thorax brown to black.

Wing elongate; 2.9–3.1 times as long as wide; costal vein between vein Sc and vein R₁ apices unmodified, almost straight. Pterostigma brown, 5–7 times as long as wide. Wing pattern almost uniformly brownish-gray with yellowish base, including basicostal cell; hyaline subbasal crossband from costal cell through cells br, bm and bcu to anal cell; large hyaline spot in cells r₁, r₂₊₃, br and r₄₊₅ posterior apex of pterostigma reaching crossvein R–M. Cell bcu without postero-apical lobe and closed with straight vein. Upper calypter slightly longer than lower calypter, white, with white fringe. Halter yellowish-white.

Legs unmodified, moderately setulose (setae and setulae black); all coxae, fore femur, proximal one third of mid and hind femora yellow; distal two thirds of mid and hind femora and all tibia completely brown to blackish-brown; fore tarsus pale brown; mid and hind tarsi yellow.

Abdomen elongate, dark brown with greenish sheen, sparsely gray microtrichose and uniformly black setulose. Abdominal tergites 3–5 subequal. Male abdomen as shown on figure 1, *I*.

Female similar to male in general features. Abdominal tergites 3 and 5 slightly shorter than tergite 4. Terminalia as shown on figures 1, 6–9. Tergosternite 7 brown, with faint greenish sheen, black setulose, longer than each of tergites.

Measurements. Male. Body 6.0–7.2 mm, wing 4.0–4.6 mm. Female. Body (with oviscape) 7.2–8.1 mm, wing 5.0–6.5 mm, oviscape dorsally 0.75–1.0 mm, aculeus 1.25 mm.

Etymology. The genus and species are named in memory of my teacher, eminent Ukrainian entomologist Vladimir Gdalich Dolin (1932–2004), in recognition of his contribution to entomology.

I wish to express my sincere thanks to Valery A. Korneyev for reading this manuscript and useful critical comments and preparation of computer artwork. Specimens studied were borrowed or examined through the kindness of the following collection curators: Dr. Manuel Zumbado (INBio) and Dr. Amnon Freidberg (TAU). I thank Dr. A. Whittington for reading this paper on its final stage and valuable corrections.

This paper is a part of study supported by the travel grants from the Curtis Sabrosky Fund (USNM & SEL BARC USDA, Washington, D. C.) and a grant from INBio (Santo Domingo, Costa Rica) in 2001.

Kameneva E. P. New records of picture-winged flies (Diptera: Ulidiidae) of Central America // *Studia Dipterologica*. – 2004 (2003). – **10** (2). – P. 609–652.

Kameneva E. P., Korneyev V. A. Ulidiidae (Ortalidae, Pterocallidae, Otitidae) – Picture-Winged Flies // *Manual of Diptera of Central America* / Coord. B. Brown. – Los Angeles, Santo Domingo. – 2005 [in press].

McAlpine J. F. Morphology and terminology // *Manual of Nearctic Diptera*. Vol. 1 / Coords J. F. McAlpine, B. V. Peterson, G. E. Shewell et al. – Ottawa: Research Branch, Agriculture Canada. – 1981. – P. 9–63, (Monograph of the Biosystematics Research Institute, N 27).

Steyskal G. C. Family Otitidae (Ortalidae; including Pterocallidae, Ulidiidae) // *A catalogue of the Diptera of Americas south of the United States* / Eds P. E. Vanzolini, N. Papavero. – São Paulo: Departamento de Zoologia, Secretaria da Agricultura. – 1968. – **54**. – P. 54.1–54.31.

Steyskal G. C. A new Central American species of *Zacompsia* Coquillett, with a key to the described species (Diptera: Otitidae) // *Proceedings of the Entomological Society of Washington*. – 1971. – **73** (3). – P. 247–248.

II

К статье Е. П. Каменевой (с. 99)
To the paper by E. P. Kameneva (p. 99)

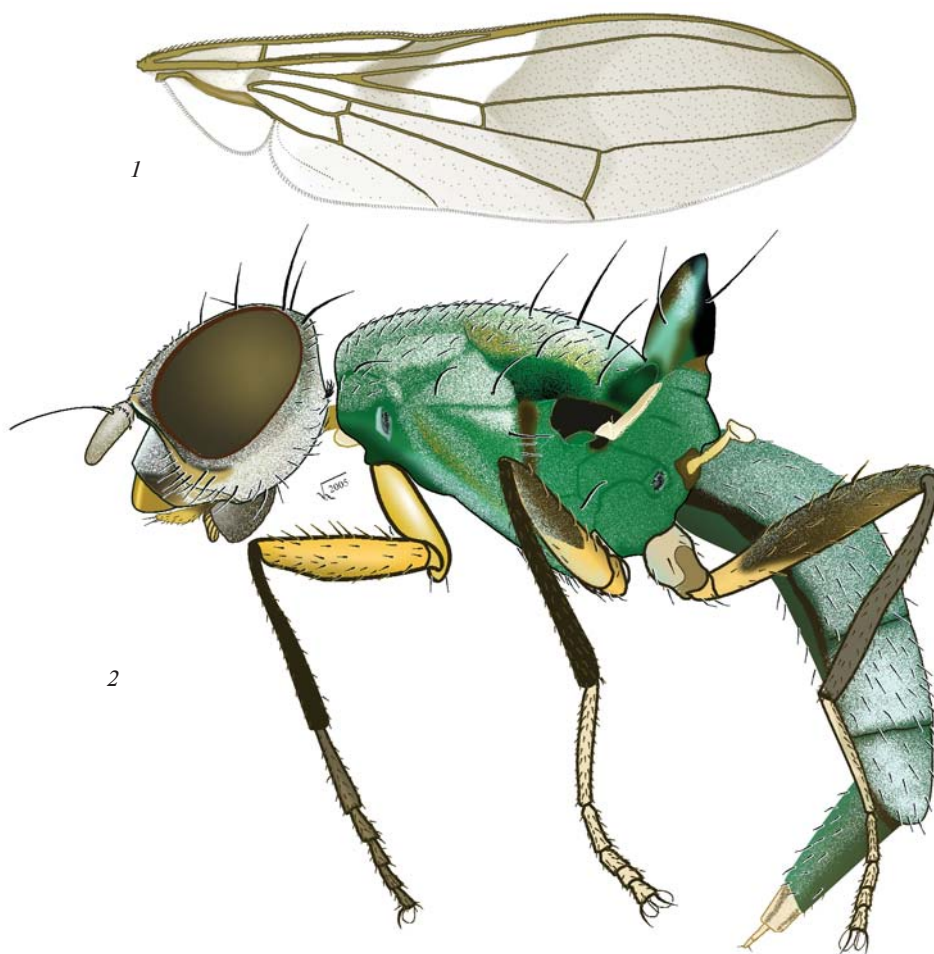


Fig. 2. *Vladolinia dolini*: 1 – wing; 2 – female, habitus, lateral view (wing removed).
Рис. 2. *Vladolinia dolini*: 1 – крыло; 2 – самка, общий вид, сбоку (крыло удалено).

К статье Р. В. Андреевой (с. 89)
To the paper by R. V. Andreeva (p. 89)

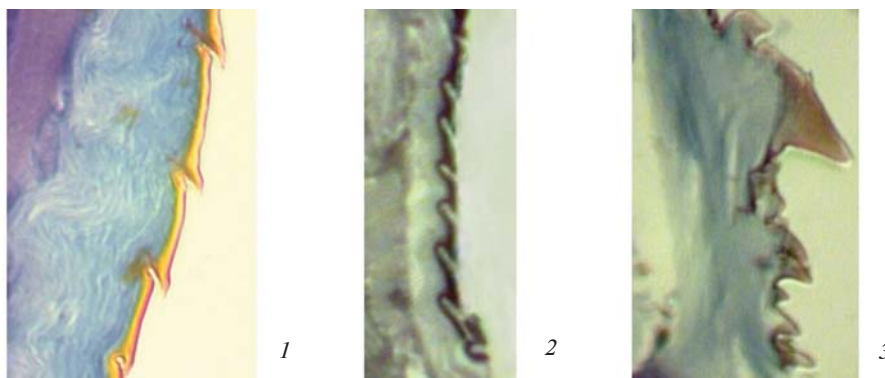


Рис. 3. Структуры двигательных валиков и межсегментных поясов (гистологические срезы): 1 – *Chrysopilus* sp.; 2 – *Rhagio* sp.; 3 – *D. umbrinus*.

Fig. 3. Structures of moving welts and intersegmentary belts (histological sections): 1 – *Chrysopilus* sp.; 2 – *Rhagio* sp.; 3 – *D. umbrinus*.