

Two new species of the genus *Platypygyus* (Diptera: Mythicomyiidae: Platypyginae) from the Iberian Peninsula and Turkey

Jozef Dils & Babak Gharali

Abstract. Two new species of the genus *Platypygyus*, *P. ibericus* sp. nov. from the Iberian Peninsula and *P. yellibellii* sp. nov. from Turkey, are described and their diagnostic feature photographed. *P. ibericus* sp. nov. is closely related to *P. melinoproctus* Loew, 1873, but distinguished by the black hairs on the mesonotum. *Platypygyus yellibellii* sp. nov. is closely related to *P. titanomedeae* Gharali & Evenhuis, 2011 and *P. kurdorum* Paramonov, 1929, but separated from both by the length and density of hairs on the mesonotum and the yellow colour of the antennal pedicel.

Samenvatting. Twee nieuwe soorten uit het genus *Platypygyus* worden beschreven: *P. ibericus* sp. nov. uit het Iberisch Schiereiland en *P. yellibellii* sp. nov. uit Turkije en hun diagnostische kenmerken afgebeeld. *P. ibericus* sp. nov. is nauw verwant aan *P. melinoproctus* Loew, 1873, maar van die soort onderscheiden door de zwarte haren op het mesonotum. *P. yellibellii* sp. nov. is nauw verwant aan *P. titanomedeae* Gharali & Evenhuis, 2011 en *P. kurdorum* Paramonov, 1929, maar kan van beide soorten onderscheiden worden door de lengte en densiteit van de beharing op het mesonotum en de gele kleur van de pedicel in de antennen.

Résumé. Deux nouvelles espèces du genre *Platypygyus* sont décrites : *P. ibericus* sp. nov. de la Péninsule Ibérique et *P. yellibellii* sp. nov. de Turquie, et leurs caractères diagnostiques sont figurés. *P. ibericus* sp. nov. est apparentée à *P. melinoproctus* Loew, 1873, mais peut être distinguée par les poils noirs sur le mesonotum. *P. yellibellii* sp. nov. est apparentée à *P. titanomedeae* Gharali & Evenhuis, 2011 et *P. kurdorum* Paramonov, 1929, mais peut être séparée de ces deux espèces par la longueur et la densité des poils sur le mesonotum et par la couleur jaune du pédicelle des antennes.

Key words: Diptera – *Platypygyus* – *Platypygyus ibericus* sp. nov. – *P. yellibellii* sp. nov. – Palaearctic region.

Dils J.: Krekelberg 149, 2940 Hoevenen, Belgium. E-mail: jozef.dils@telenet.be

Gharali Babak: Plant Protection Research Department, Qazvin Agricultural and Natural Resources Research and Education Center, AREEO, Qazvin, Iran. E-mail: bgharaei@yahoo.com

Introduction

The genus *Platypygyus*, species of which are small humpbacked and black-yellow colored mythicomyiids, is a small genus with 12 described species worldwide. This genus is placed in the subfamily Platypyginae and distinguished from its closely related genus, *Cyrtosia*, by the closed discal cell. Recently, Gharali *et al.* (2011) reviewed the species of the genus in Iran, described a new species, *P. titanomedeae* Gharali & Evenhuis, 2010 and transferred *Platypygyus maculiventris* Loew to the genus *Cyrtosia* Séguéy. Two years later, by accessing to all types and newly collected specimens from different parts of the world, Gharali *et al.* (2013) gave a synopsis of the genus worldwide, provided a key to all known species, and illustrated the diagnostic features of the species. By collecting new material from the Iberian Peninsula and Turkey we here describe two additional species and provided an updated key to all species in the Palaearctic region.

Material and methods

For the preparation of female genitalia, abdomens were removed and macerated in cold 10% KOH for 20–60

minutes, then washed with distilled water and subsequently mounted as microscopic slides using Hoyer's medium. Morphological terminology follows Gharali *et al.* 2013. Type material is deposited in the following collections: BG = Babak Gharali personal collection, Qazvin (Iran), JD = Jozef Dils personal collection, Hoevenen, Belgium, in due time the holotype, allotype and all paratypes will be deposited in the RBINS = Royal Belgian Institute of Natural Sciences, Brussels, Belgium.

Systematics

Platypygyus Loew, 1844: 127. Type species: *Platypygyus chrysanthemii* Loew, 1844, by monotypy.

Diagnosis. The genus *Platypygyus* Loew is distinguished from the four other genera of the subfamily Platypyginae, *Ahessia* Greathead & Evenhuis, 2001, *Cephalodromia* Becker, 1914, *Cyrtosia* Séguéy, 1930, and *Cyrtosia* Perris, 1839 by the following characters: absence of an acute process on the postgena, the presence of vein R2+3 ending in the costal margin well beyond the level of the end of vein M2, and a closed discal cell.

Key to species of the genus *Platypygyus* in the Palaearctic region

1. – Mesonotum with three black, or orange longitudinal stripes 2
– Mesonotum with large contiguous black mark, without distinct stripes 9
2. – Longitudinal stripes on mesonotum orange *P. ridibundus* Costa
– Longitudinal stripes on mesonotum black 3
3. – Halter knob with black spot on dorsal surface *P. lativentris* Loew
– Halter knob completely yellow, without black spot 4



Fig. 1. *Platypygyus ibericus* sp. nov.

- a.– adult female habitus laterally
- b.– female pleura
- c.– female abdomen dorsal view
- d.– male abdomen dorsal view
- e.– female head dorsal view
- f.– female head lateral view
- g.– female mesonotum dorsal view

- 4. – Mesonotum completely bare; antennae completely black *P. kurdorum* Paramonov
- Mesonotum hairy; antennal parts black or yellow 5
- 5. – Hairs on mesonotum completely black *P. chrysanthemi* Loew
- Hairs on mesonotum yellow, white and mixed with black hairs 6
- 6. – Median longitudinal stripe on mesonotum meeting scutellum 7
- Median longitudinal stripe end much before scutellum 8
- 7. – Antennal pedicel black (Fig. 5b); frons with a Y-shaped black mark medially (Fig. 4e); hairs on mesonotum shorter than length of scape and pedicel jointly (Fig. 4b); mesonotum without isolated black spots laterally (Fig. 6i); furca apically round *P. yellibeli* sp. nov.
- Antennal pedicel yellow (Fig. 5a); frons without any mark medially; hairs on mesonotum longer than length of scape and pedicel jointly (Fig. 6g); mesonotum with black isolated spots laterally; furca apically angular *P. titanomedeia* Gharali & Evenhuis

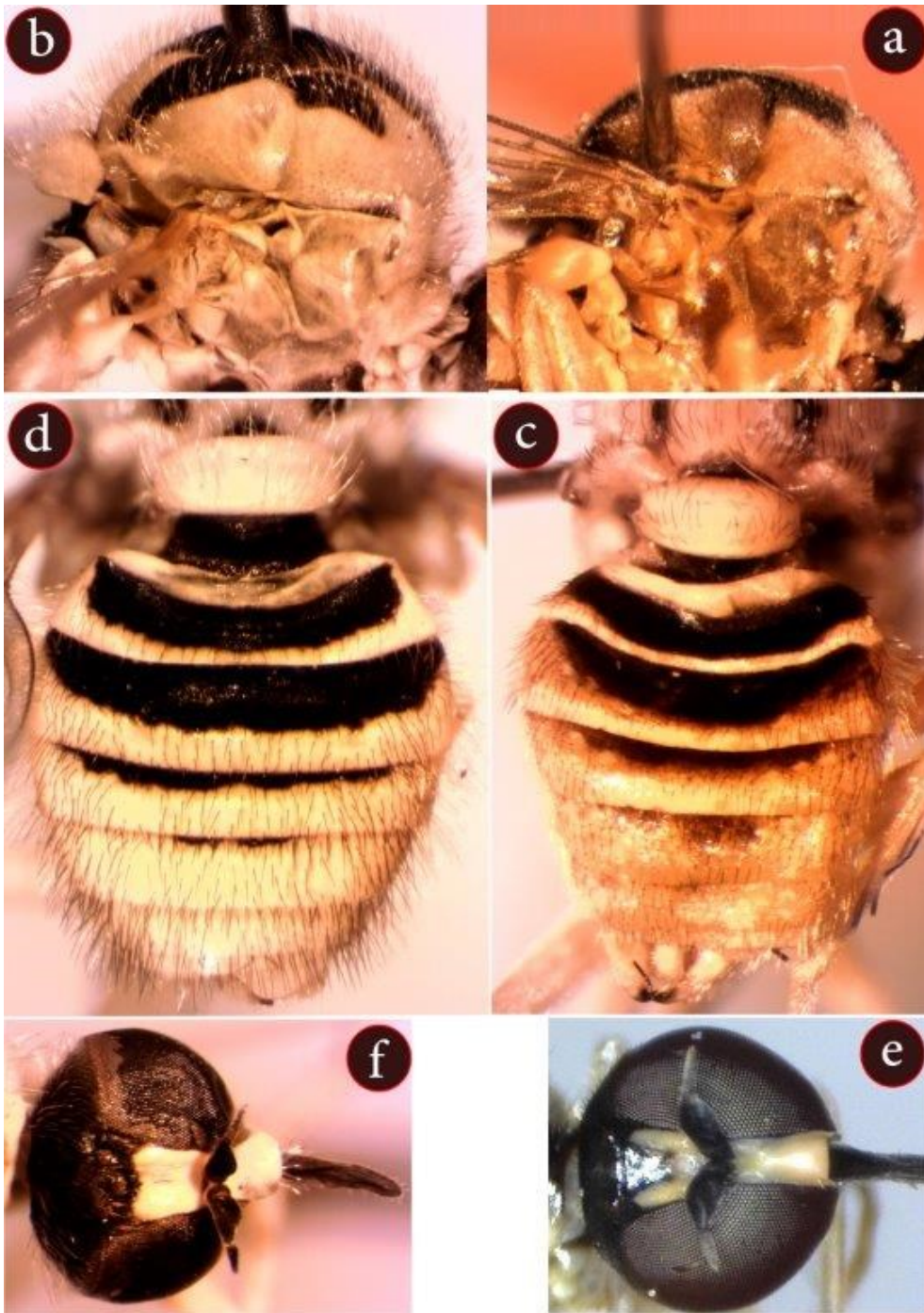


Fig. 2. *Platipygus ibericus* sp. nov. (a, c, e) & *P. melinoproctus* Loew (b, d, f)
a., b. – pleurea
c., d.– abdomen dorsal view
e., f.– head dorsal view

8. – Antenna completely black (Fig. 1e); frons with black mark medially; hairs on mesonotum and scutellum black and short (Figs. 1b, g); furca as two separated bars (Fig. 3a) *P. ibericus* sp. nov.
– Antennal scape yellow; frons without black mark medially; hairs on mesonotum and scutellum white and long; furca U-shaped (Fig. 3b) *P. melinoproctus* Loew
9. – Posterior margin of mesonotum yellow *P. pumilio* Loew
– Posterior margin of mesonotum at least black medially 10
10. – Prescutellar area of mesonotum with triangular black mark *P. bellus* Loew
– Prescutellar area of mesonotum with large oval yellow mark *P. turkmenorum* Paramonov

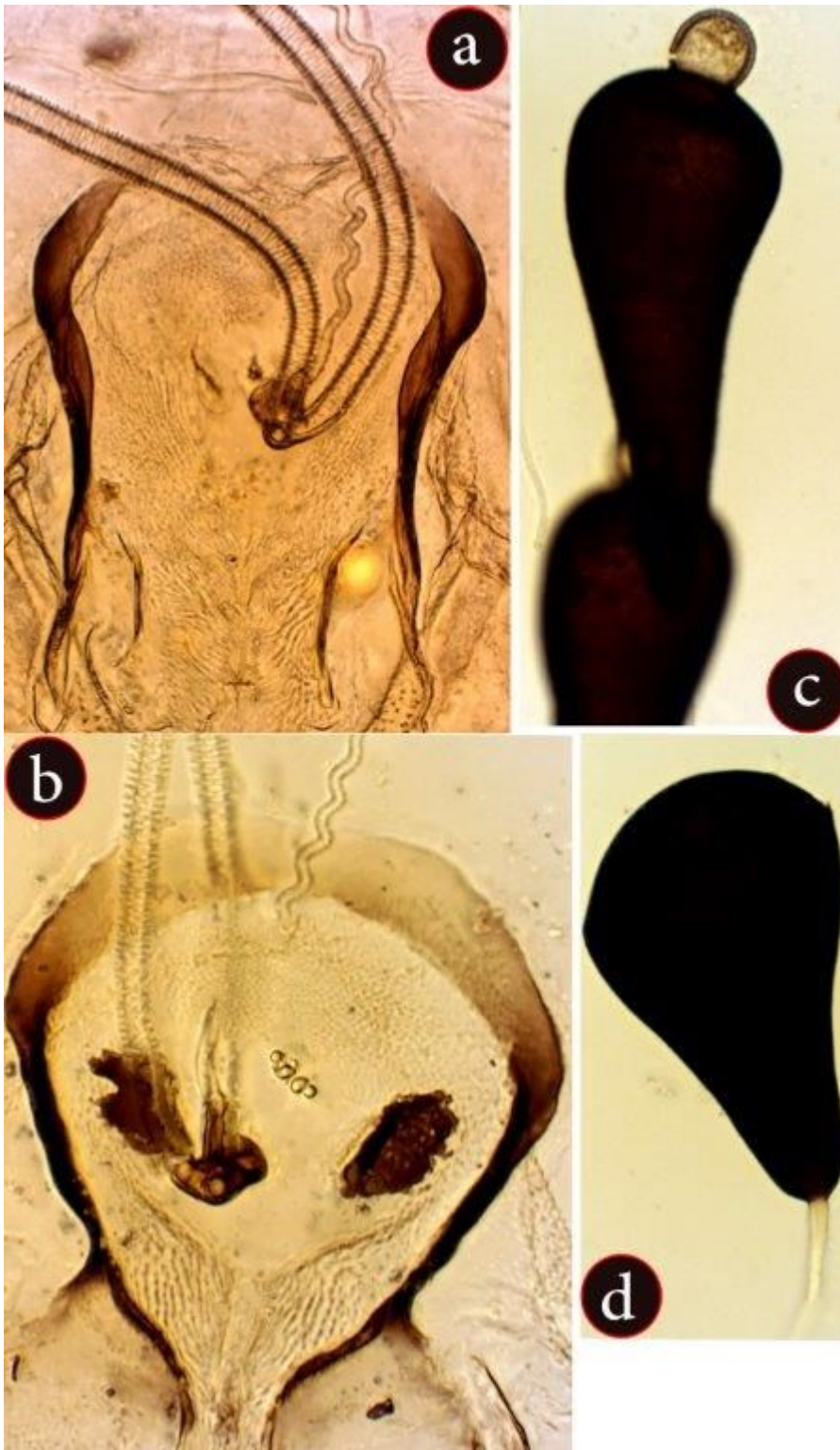


Fig. 3. *Platipygus ibericus* sp. nov. (a, c) & *P. melinoproctus* Loew (b, d)

a., b.– furca

c., d.– spermathecal reservoir

Descriptions of new species

Platipygus ibericus sp. nov. (Figs 1, 3, 7a, b)

Material examined. Holotype ♂: Portugal, Algarve, Feiteira, 14-05-2017, N37.28659 W7.85676, 350 m, leg. Dils J. & Faes J. (JD to be deposited in RBINS); Allotype ♀: Portugal, Guarda, Parada, 03-06-2017, N40.45949 W7.02399, 700 m, leg. Dils J. & Faes J.; Paratypes: 4♂ 1♀, Portugal, Guarda, Rapoula do Cõa, 03-06-2017, N40.41236 W7.05395, 800 m, leg. Dils J. & Faes J.; 2♂ 6♀, Portugal, Algarve, Feiteira, 14-05-2017,

N37.28659 W7.85676, 350 m, leg. Dils J. & Faes J.; 3♂ 1♀, Portugal, Belmonte, Inguias, 03-06-2017, N40.31432 W7.30110, 450 m, leg. Dils J. & Faes J.; 2♂ 2♀, Portugal, Belmonte, Inguias, 02-06-2016, N40.31434 W7.30103, 500 m, leg. Dils J. & Faes J. All in collection JD. 1♂ Portugal, Belmonte, Inguias, 02-06-2016, N40.31434 W7.30103, 500 m, leg. Dils J. & Faes J. (RBINS); 1♀ (genitalia dissected), Portugal, Belmonte, Inguias, 02-06-2016, N40.31434 W7.30103, 500 m, leg. Dils J. & Faes J., in coll. BG.

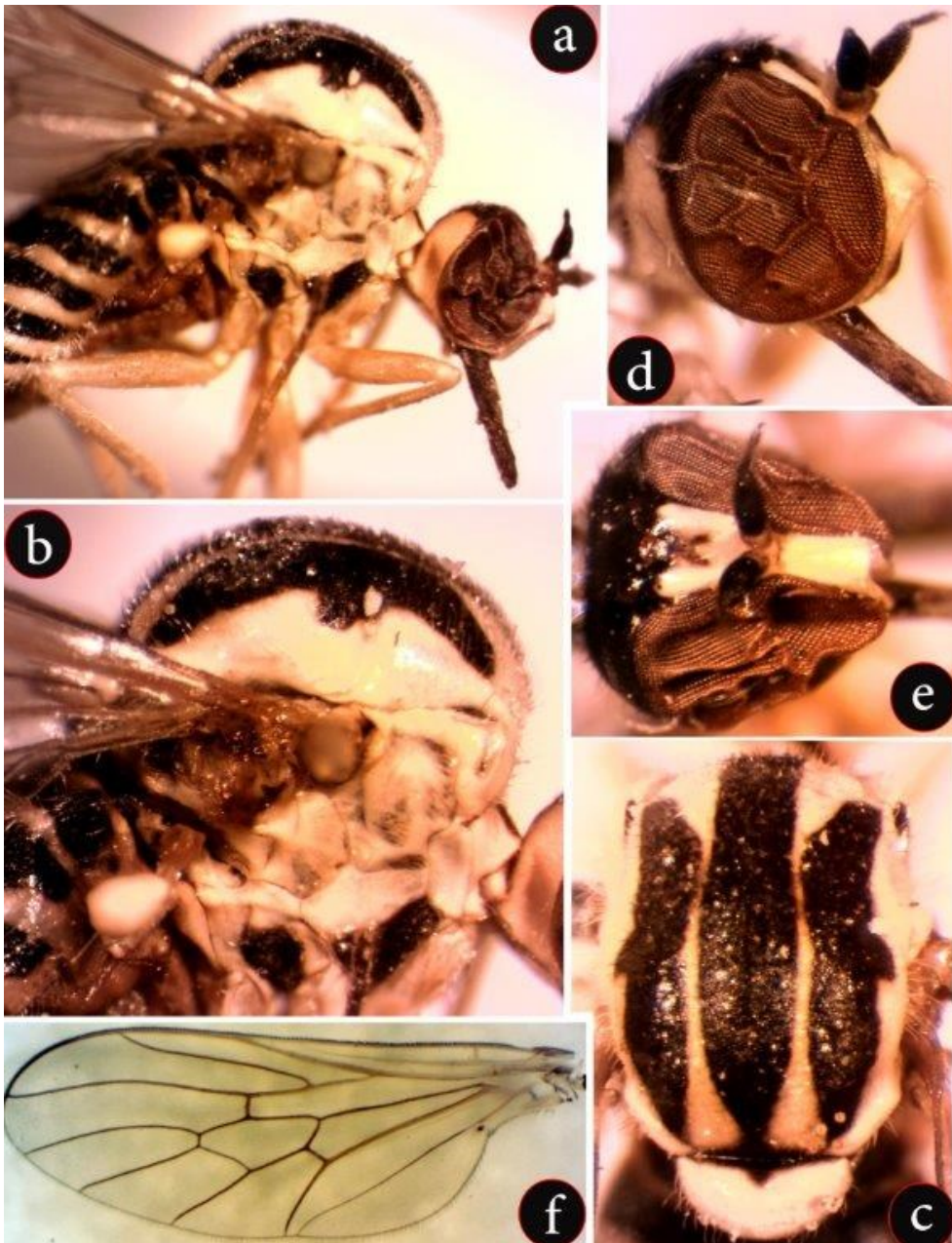


Fig. 4. *Platypygus yellibeli* sp. nov.

- a.– adult male lateral view
- b.– male pleura
- c.– male mesonotum dorsal view
- d.– male head lateral view
- e.– male head dorsal view
- f.– male wing

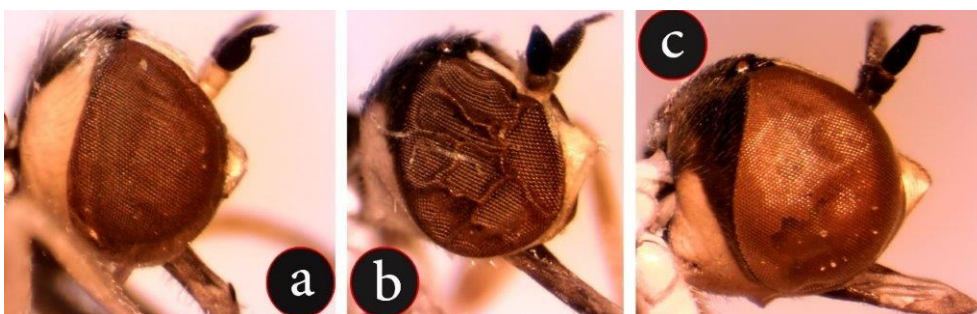


Fig. 5. Lateral view of head in *Platypygus* spp.

- a.– *Platypygus titanomedeae*
- b.– *Platypygus yellibeli* sp. nov.
- c.– *Platypygus kurdorum*

Diagnosis. Frons with a subtriangular black mark medially; antennae completely black; mesonotum with black hairs shorter than scape length, with three black longitudinal stripes, median stripe ends much before scutellum; scutellum with black hairs; abdomen with short black bristles; furca as two separated bars; spermathecal reservoirs clavate apically with round process. *Platypygus ibericus* sp. nov. resembles in general appearance *P. melinoproctus* Loew, 1873 (Fig. 7f) by having the three longitudinal stripes from which the

median one ends much before the scutellum but differs from this species by having black and shorter hairs on mesonotum (Fig. 2a, c) and scutellum [hairs all long and whitish in *P. melinoproctus* Loew (Fig. 2b, d)]; black stripe on frons (Fig. 2e) [frons completely yellow in *P. melinoproctus* Loew]; two separated arms of furca [furca as a U-shaped structure (Fig. 3b) in *P. melinoproctus* Loew]; clavate reservoirs with round small cap apically (Fig. 3a) [reservoir without any obvious cap apically in *P. melinoproctus* Loew (Fig. 3d)].

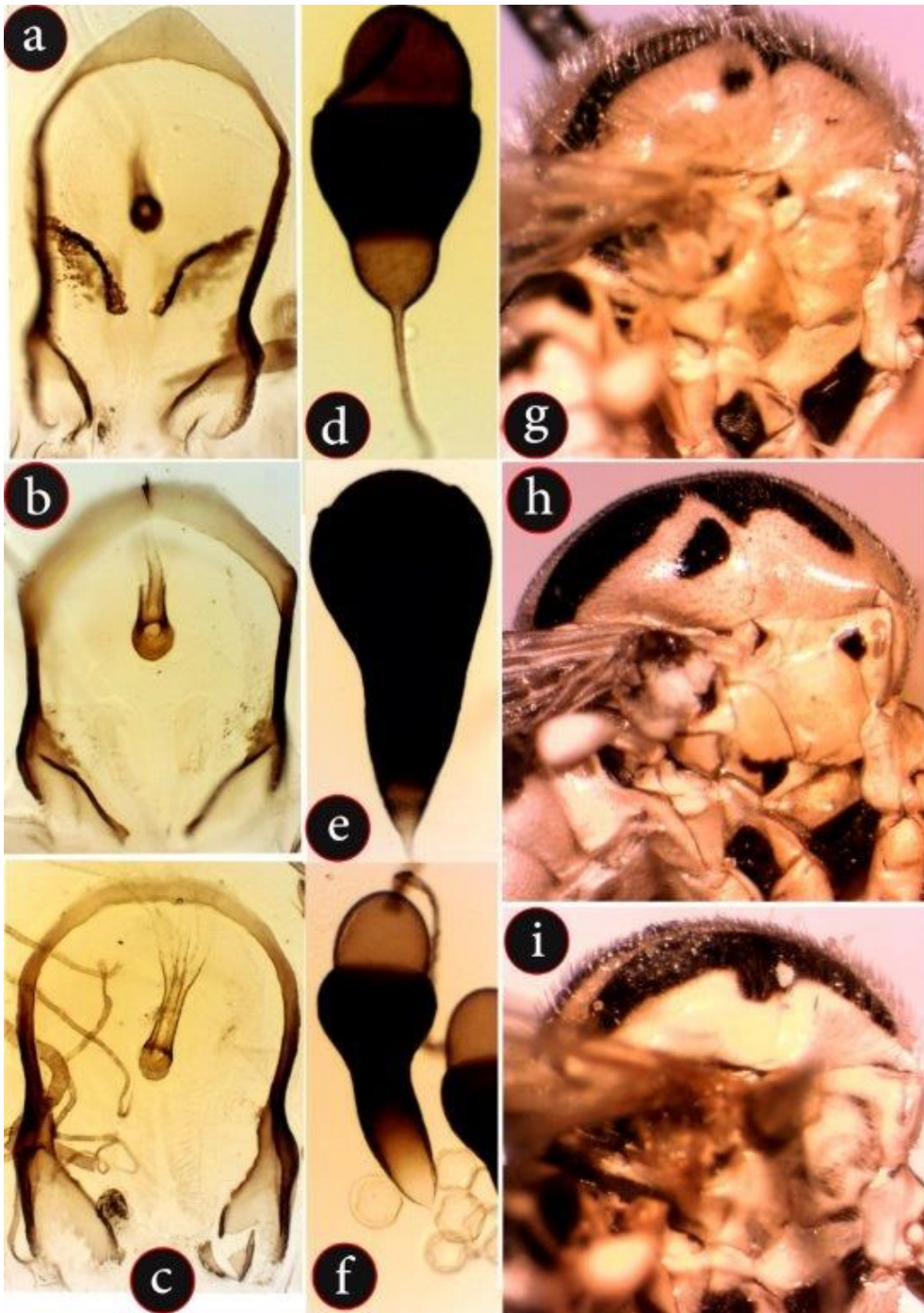


Fig. 6. Morphological characters in *Platypygus* spp.; *Platypygus titanomedeae* (a, d, g); *Platypygus kurdorum* (b, e, h); *Platypygus yellibeli* sp. nov. (c, f, i)
a., b., c.– furca
d., e., f.– spermathecal reservoir
g., h., i.– pleurea

Description. Male (Figs 2a, c & e). face yellow, with a few short white hairs (Fig. 2e); frons yellow with a black mark in upper half (Figs 1e & 2e); yellow postgena slightly extended posteriorly as a blunt process; white hairs nearby the black occiput, vertex black; antennae completely black, second flagellomere with short stylus; proboscis black, shorter than head length; pronotum yellow with blackish mark dorsomedially; mesonotum without lateral black spot near transverse suture (Fig. 1b), with three longitudinal black stripes (Fig. 1g); presutural mesonotum with short white hairs and a few black ones, postsutural mesonotum with short black hairs, lateral stripe extends from level of anterior spiracle to posterior margin of postalar callus, median stripe extends from anterior margin of mesonotum to three-fourths length of mesonotum with rounded posterior margin (Fig. 1g); katepisternum and meron yellow (1b &

2a); scutellum with short bristle-like black hairs (Fig. 2c); halter with pale stem and light yellow knob; wings as in *P. melinoproctus*; tergites I–III with wide anterior black bands (Fig. 2c), other tergites completely yellow; legs yellow except last three tarsal segments brown; tergites with bristle-like black hairs throughout, with white hairs on lateral margins.

Male genitalia (Figs 8c, d): Epandrium in lateral view trapezoid as long as high with two short acute sclerotized processes, gonocoxides fused, barely sclerotized, apical with some white bristles. Gonostyli deeply inserted in gonocoxides with four processes middle ones flattened and twisted rounded at apex, side ones puffy with each two small sclerotized denticles on the apex. Aedeagal bulb large, basal aedeagal apodeme narrow in dorsal view sub rectangular in lateral view,

extending shortly forward as a triangular process lateral apodemes small.

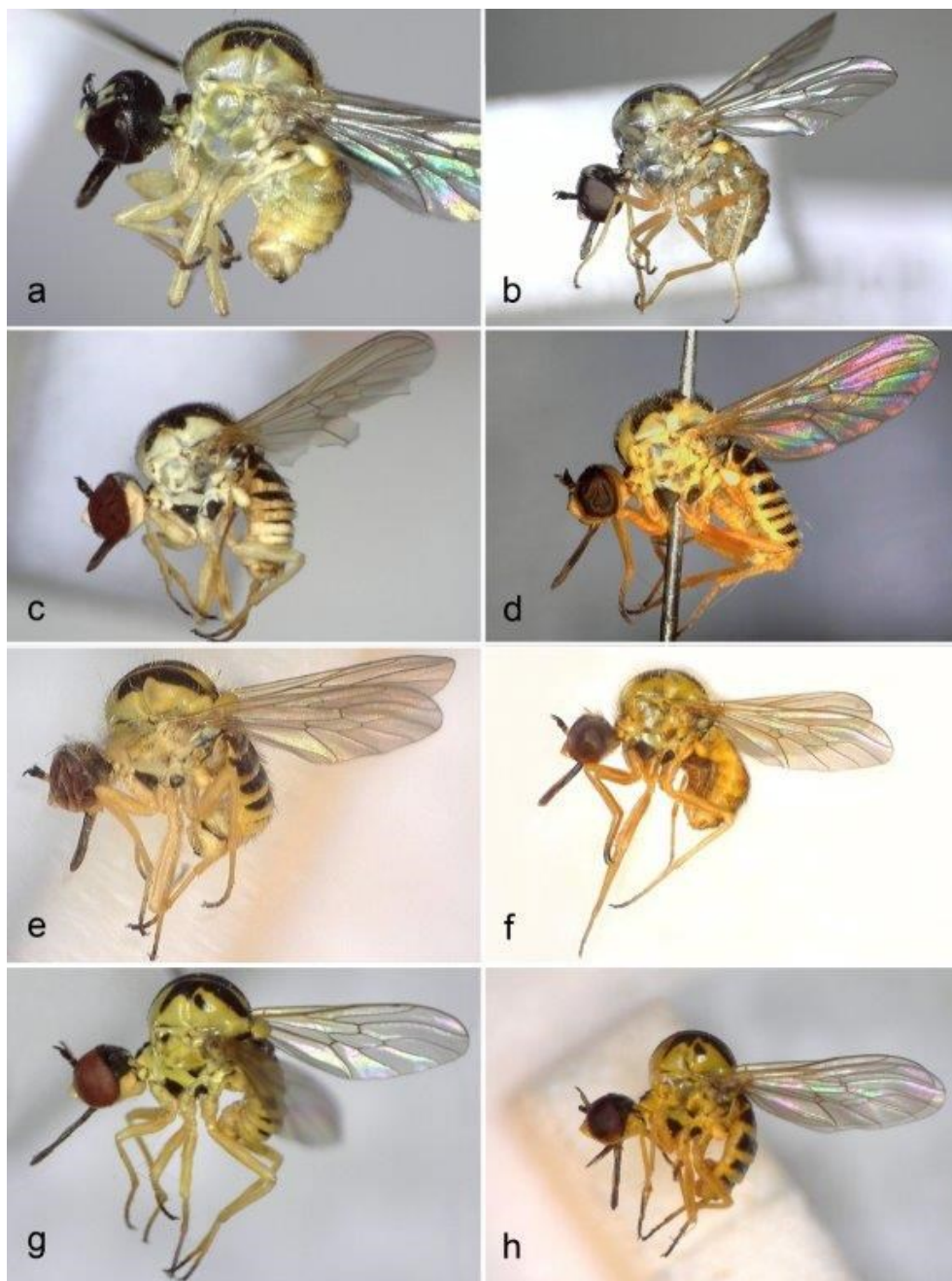


Fig. 7.

- a.– *Platipygus ibericus* sp. nov. ♂
b.– *Platipygus ibericus* sp. nov. ♀
c.– *Platipygus yellibeli* sp. nov. ♂
d.– *Platipygus yellibeli* sp. nov. ♀
e.– *P. melinoproctus* ♂
f.– *P. melinoproctus* ♀
g.– *P. kurdorum* ♂
h.– *P. kurdorum* ♀

Female. Similar to male except the following characters: less white hairs on presutural mesonotum; lateral margins of tergites VI and VII with white hairs; tergite VIII completely white haired.

Female genitalia. Furca as two separated bars (Fig. 3a); spermathecal reservoirs clavate with a small round cap apically (Fig. 3b). Common spermathecal duct absent; lateral spermathecal ducts about 2x width of median duct; without distinct sperm pump or valves; each spermathecal duct divided into two sections, a basal section as a striated, long and broad tube, shortly sclerotized proximally, widening gradually toward tip and ending as a small bulb; the apical section as a narrow and smooth tube; basal part of median spermathecal duct much narrower than that of lateral ducts, without

striation, twisted spirally in median section, gradually broadened apically, expanded as a small bulb at the end.

Distribution. This species is currently only known from Portugal.

Etymology. The name of this new species, *P. ibericus* sp. nov., is derived from the Iberian Peninsula where the type material was collected.

***Platipygus yellibeli* sp. nov.** (Figs 4, 6, 7c, d)

Material examined. Holotype ♂: Turkey, Karaman, Yellibeli Geçidi, 20.08.2004, N36°49'49.5" E32°56'34.3", 1925 m, leg. Dils J. & Faes J. (JD to be deposited in RBINS); Allotype: Turkey, Karaman, Yellibeli Geçidi, 20.08.2004, N36°49'49.5" E32°56'34.3", 1925 m, leg. Dils J. & Faes J.; Paratypes: 16♂, 5♀; Turkey,

Karaman, Yelibeli Geçidi, 20.08.2004, N36°49'49.5" E32°56'34.3", 1925 m, leg. Dils J. & Faes J. 59♂, 44♀; Turkey, Karaman, Yelibeli Geçidi, Bagkusan 20.07.2000, N36°49'51" E32°56'32", 1950 m, leg. Dils J. & Faes J. 18♂, 27♀; Turkey, Niğde, Bolkar Dağı, Maden, 29.07.2000, N37°27'33" E34°36'37", 1980 m, leg. Dils J. & Faes J.; 52♂, 39♀; Turkey, Karaman, Yelibeli Geçidi, 03.07.2005, N36°49'31.3" E32°55'58.5", 1910 m, leg. Dils J. & Faes J. 1♂, 1♀; Turkey, Karaman, Yelibeli Geçidi, 04.07.2005, N36°50'26.6 E32°55'58.5", 1730 m, leg. Dils J. & Faes J. 3♀; Turkey, Karaman, Yelibeli Geçidi, 28.06.2006, N36°49'49.8" E32°56'27.2", 1950 m, leg. Dils J. & Faes J. 1♀; Turkey, Karaman, Yelibeli Geçidi,

29.06.2006, N36°50'23.8" E22°55'37.5", 1770 m, leg. Dils J. & Faes J. 62♂, 20♀; Turkey, Karaman, Yelibeli Geçidi, 06.07.2005, N36°54'56.4" E33°14'58.7", 1680 m, leg. Dils J. & Faes J. 18♂, 27♀ Turkey, Niğde, Maden (Bolkar Dağ), 28.07.2000, N37°27'33" E34°36'37", 1980 m, leg. Dils J. & Faes J. 1♂, Turkey, Niğde, Bolkar Dağı, Maden, 29.07.2000, 37°27'33" E34°36'37", 1980 m, leg. Dils J. & Faes J. (RBINS); 2♀ Turkey, Karaman, Yelibeli Geçidi, 20.08.2004, N36°49'49.5" E32°56'34.3", 1925 m, leg. Dils J. & Faes J. (RBINS); 1♂, 1♀ (genitalia dissected), Karaman, Yelibeli Geçidi, 20.08.2004, N36°49'49.5" E32°56'34.3", 1925 m, leg. Dils J. & Faes J., in coll. BG.

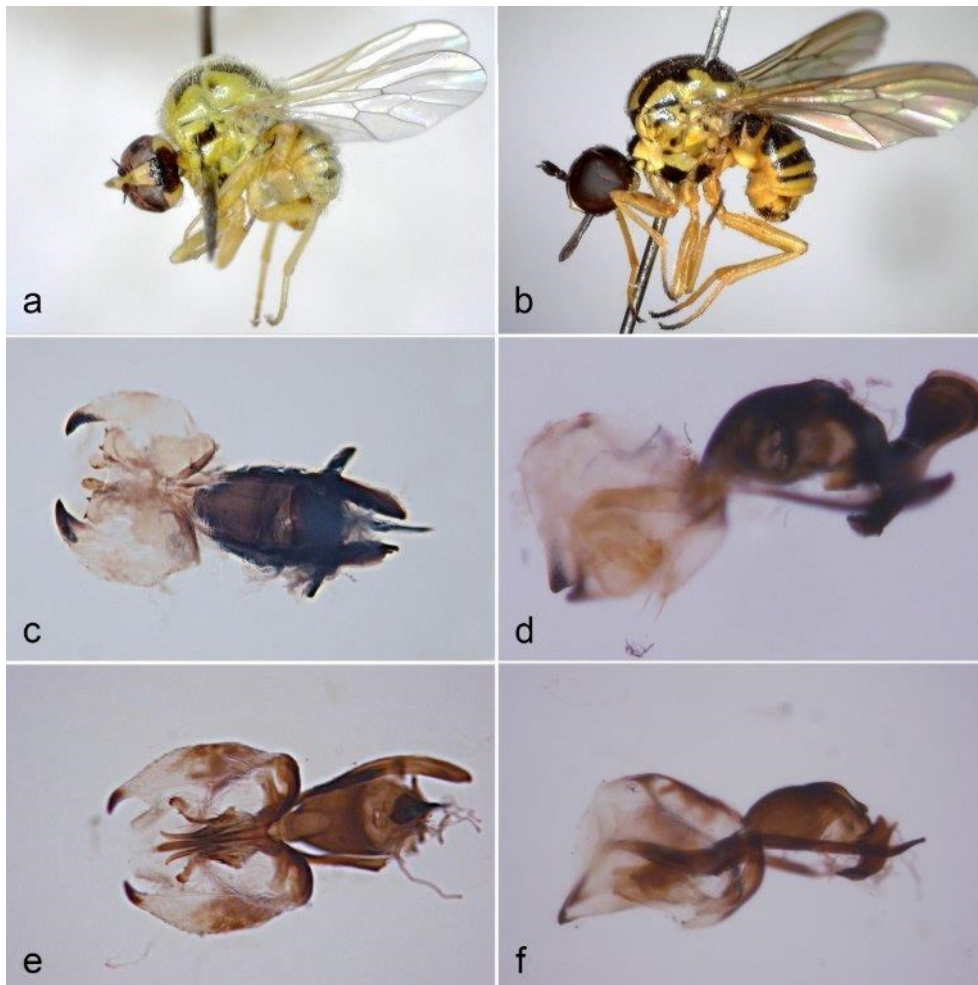


Fig. 8

- a.– *Platypygus titanomedea* ♂
- b.– *Platypygus chrysanthemi* ♂
- c.– *Platypygus ibericus* sp. nov. phallic complex dorsal view
- d.– *Platypygus ibericus* sp. nov. phallic complex lateral view
- e.– *Platypygus yellibeli* sp. nov. phallic complex dorsal view
- f.– *Platypygus yellibeli* sp. nov. phallic complex lateral view.

Diagnosis. Frons with Y-shaped black mark medially; scape yellow; pedicel dark brown; proboscis black, as long as head length; mesonotum with white hairs shorter than two basal segments of antennae combined, without any black isolated spot, with three black longitudinal stripes, median black stripe reaching to scutellum; furca U-shaped; spermathecal reservoirs cup shaped with obvious cap. According to the key provided by Gharali *et al.* (2013) this species runs to couplet 7 where there are two closely related species, *P. chrysanthemi* Loew, *P. titanomedea* Gharali & Evenhuis. *Platypygus yellibeli* sp. nov. is easily separated from *P. chrysanthemi* Loew (Fig. 20) by the yellow hairs on

mesonotum (hairs in *P. chrysanthemi* Loew are black). *Platypygus yellibeli* sp. nov. is also separated from *P. kurdorum* and *P. titanomedea* by the characters mentioned in Table 1.

Description. Male. (Figs 4 & 5b). Frons with Y-shaped black mark medially (Fig. 4e); face yellow with a few short hairs apically (Fig. 5b); scape yellow; pedicel dark brown; flagellomeres black; occiput laterally in lower half yellow, in upper half black (Fig. 5b); proboscis black, as long as head length (Fig. 4a); pronotum yellow with black mark medially; mesonotum with white hairs shorter than two basal segments of antennae combined, without any black isolated spot, with three black

longitudinal stripes, median stripe reaching scutellum; lateral stripes posteriorly joined to median stripe by transverse black band; scutellum with small black spot basally; wings hyaline, similar to *P. titanomedeae* Gharali & Evenhuis; legs yellow except last three tarsal segments brown; pleurae yellow with blackish shades on anepisternum, anepimeron and with black mark on katepisternum and meron; halter stem and knob yellow; tergites predominantly black except posterior margins yellow with short white hairs.

Male genitalia (Figs 8e, f): Epandrium in lateral view longer than high with two short acute sclerotized processes, gonocoxides fused, weakly sclerotized with few white hairs, gonostyli basically fused with gonocoxites projecting four hyaline sclerites, inner ones, flattened, bending outwards and pointed at apex, the outer ones with sclerotized apex, clavate with an apical and side dentil. Aedeagal bulb large, ventrally with two small triangular processes basally, basely apodeme small, triangular narrow plate.

Female. Similar to male except the following characters: more black on pleurae; white hairs on thorax

somewhat longer and scutellum with narrow black mark near mesonotum.

Female genitalia. (Figs 7c, f). Furca U-shaped; spermathecal reservoirs, cup-shaped with obvious cap. Common spermathecal duct very short, brown, sclerotized; lateral spermathecal ducts about 2× width of median duct; without distinct sperm pump or valves; each spermathecal duct divided into two sections, a basal section as a striated, long and broad tube, shortly sclerotized proximally, widening gradually toward tip and end as a small bulb; the apical section as a narrow and smooth tube; basal part of median spermathecal duct much narrower than that of lateral ducts, without striation, twisted spirally in median section, gradually broadened apically, expanded as a small bulb at the end.

Distribution. *Platypygyus yellibeli* sp. nov. is currently only known from Turkey. This species was found in Turkey north of Ermenek on the Yellibeli Geçidi pass flying together with *P. titanomedeae* Gharali & Evenhuis.

Etymology. The species is named after the Yellibeli pass where specimens were collected for the first time.

Table 1. morphological differences between *Platypygyus yellibeli* sp. nov. and two closely related species.

Species	Antennal colour	Hair on mesonotum	Black spot on mesonotum	Spermathecal reservoir	Furca
<i>Platypygyus yellibeli</i> sp. nov. (Figs 8e, f)	scape yellow, most part of pedicel dark brown (Fig. 5b)	with white short hairs (Fig. 6i)	confluent with lateral stripes (Fig. 6i)	Cup-shaped with long cylindrical base, with large and obvious cap (Fig. 6f)	without sclerotization around genital orifice (Fig. 6c)
<i>P. kurdorum</i> (Figs 7g, h)	completely black (Fig. 5c)	completely bare, at high magnitude with minute hairs (Fig. 6h)	joint to black lateral stripe or free (variable) (Fig. 6h)	pear-shaped, slightly curved at middle, with a small cap apically, cap with hardly visible short and dense canaliculi (Fig. 6e)	without sclerotization around genital orifice (Fig. 6b)
<i>P. titanomedeae</i> (Fig. 8a)	scape & pedicel yellow (Fig. 5a)	with white long hairs (Fig. 6g)	always free from lateral stripe (Fig. 6g)	acorn-shaped with apically rounded cap (Fig. 6d)	with two sclerotized plates next to genital orifice (Fig. 6a)

Acknowledgments

We wish to thank Willy and Jurate De Prins and Neal Evenhuis for their help and corrections to this paper. We also thank Theo Garrevoet for his assistance with the photographs.

References

- Gharali B., Kamali K., Evenhuis N.L. & Talebi A.A. 2011. A review of the genus *Platypygyus* Loew (Mythicomyiidae: Platypyginae) in Iran, with notes on *Cyrtisiopsis maculiventris* (Loew) n. comb. — *Zootaxa* **2441**: 41–52.
- Gharali B., Evenhuis N.L. & Almeida J. 2013. World synopsis of described species of the genus *Platypygyus* Loew (Diptera: Mythicomyiidae: Platypyginae). — *Zootaxa* **3745**: 199–242.