



Revista de la Sociedad Entomológica Argentina  
ISSN: 0373-5680  
ISSN: 1851-7471  
santiago@cepave.edu.ar  
Sociedad Entomológica Argentina  
Argentina

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Revista de la Sociedad Entomológica Argentina, vol. 76, no. 3-4, 2017

Sociedad Entomológica Argentina, Argentina

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## The genus *Epipompilus* in Argentina (Hymenoptera: Pompilidae)

El género *Epipompilus* en la Argentina (Hymenoptera:  
Pompilidae)

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Revista de la Sociedad Entomológica  
Argentina, vol. 76, no. 3-4, 2017

Sociedad Entomológica Argentina,  
Argentina

Received: 06 June 2017  
Accepted: 04 November 2017  
Published: 27 December 2017

Redalyc: [https://www.redalyc.org/  
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**Abstract:** Four species of *Epipompilus* occur in Argentina: *E. platensis* sp. n., *E. tucumanus* Evans, *E. jocosus* Evans, and *E. excelsus* (Bradley), the last two being new records for this country. The new species *E. platensis* is described based on specimens from Buenos Aires in Argentina and Santa Catarina in Brazil. The incorrect association of sexes in the original description of *E. jocosus* is clarified. Descriptions, taxonomic notes, illustrations and a key to species, are presented.

**Keywords:** Spider wasps, new species.

**Resumen:** Cuatro especies de *Epipompilus* están presentes en la Argentina: *E. platensis* sp. n., *E. tucumanus* Evans, *E. jocosus* Evans, y *E. excelsus* (Bradley), siendo las dos últimas nuevos registros para este país. La nueva especie *E. platensis* se describe sobre especímenes de Buenos Aires en la Argentina y de Santa Catarina en Brasil. Se clarifica la incorrecta asociación de sexos en la descripción original de *E. jocosus*. Se presentan descripciones, notas taxonómicas, ilustraciones y una clave para las especies.

**Palabras clave:** Avispas arañas, nueva especie.

## INTRODUCTION

Spider wasps of the genus *Epipompilus* Kohl are distinctive because of their colorful bodies variously marked with red and yellow, an unusual pattern among pompilid wasps. The females are also easy to distinguish because of their incrassate anterior femora, and females of New World species are also distinctive because of their hairy eyes. The genus is known to occur in the Americas, from Florida in the United States to northern Argentina (Evans, 1967; Fernández, 2000), and in the Australian region, in Australia, New Zealand and New Guinea (Evans, 1962, 1972). A single species has been reported for Argentina (Colomo de Correa & Roig Alsina, 2008), *E. tucumanus* Evans, from the provinces of Tucumán and Jujuy.

*Epipompilus* spider wasps are uncommon in collections, and most of the 16 species known to date for the Americas are known from a few specimens. An exception is the species *E. excelsus* (Bradley), which has been frequently collected in southeastern Brazil (Evans, 1967; Santos & Noll, 2010). *Epipompilus* are tropical wasps, but here we show that two

species inhabit also temperate areas, reaching as far south as the province of Buenos Aires in Argentina.

This study was triggered by the rearing of several specimens of *Epipompilus* from a species of segestriid (Segestriidae) spider in the surroundings of the city of La Plata. In the present contribution we describe a new species, based on both sexes, we describe the true male of *E. jocosus* Evans, and present a key to sort the four species of *Epipompilus* we know to occur in Argentina.

## MATERIAL AND METHODS

The specimens studied are deposited in the Museo Argentino de Ciencias Naturales "Bernardino Rivadavia," Buenos Aires, Argentina (MACN). Goulet & Huber (1993) is followed for general morphological terminology and Wasbauer & Kimsey (1985) for specific terms of pompilid morphology.

## RESULTS

### *Epipompilus platensis* sp. n.

(Figs. 1-4, 9-10)

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*Epipompilus jocosus*: Evans, 1967: 8-9, figs. 1-2 (male, not the female, erroneous sex association).

**Female holotype.** Length 8.5 mm (apex of metasoma curved down) (paratypes, 8.5-10.0 mm); length of forewing 8.0 mm (paratypes, 6.4-8.2 mm). Color. Head black, except apical two thirds of mandible and lower surface of scape, reddish, palpi partially reddish, band on apical third of clypeus yellow, labrum yellow, and small spot on inner orbit at level of torulus yellow. Thorax and propodeum black, except for small yellow anterior band on pronotum, and yellow spot occupying posterior part of metapleuron and propodeum, just above hind coxa. Metasoma with first 2.5 segments reddish, except base of first tergum black; remainder of metasoma black, with lateral yellow spot on fifth and sixth terga, yellowish spot on sixth tergum reniform. Front coxa black, with yellowish spot on anterior apical third; middle and hind coxae black with yellow stripes; all femora and tibiae reddish except hind tibia with black base followed by basal yellow spot; middle and hind tibial spurs yellowish; foretarsus blackish, middle and hind tarsi dusky with basitarsi reddish basally. Wings hyaline, with distinct infusate bands. Morphology. Head 1.25 times as wide as high. Eyes convergent above, lower interocular distance 1.07 times upper interocular distance. Frons wide, middle interocular distance 0.62 times width of head. Postocellar distance 1.8 times ocellocular distance. Eyes hairy, hairs on upper part of eye as long as four ommatidia taken together. Frons finely punctate; diameter of punctures

on middle of frons 0.015-0.020 mm, separated by 0.5-1.5 times their diameter. Proportions of scape, pedicel, and first three flagellomeres, 30:12:28:30:30; first flagellomere 0.49 times upper interocular distance. Posterior margin of pronotum broadly angulate. Metapostnotum very narrow, proportion of scutellum, metanotum and metapostnotum in dorsal view, 20:9:1. Propodeum evenly rounded in profile; transversely, finely striate on all its surface. Claws toothed. Middle tibiae with 10-12 short, red spiniform setae; hind right tibia with 2 small spiniform setae, left tibia without spiniform setae.

**Male.** The two studied males closely agree with Evans' detailed description (1967: 8-9, figs. 1-2). The male from Nova Teutonia entirely agrees and is from the same locality as those studied by Evans (see comments under *E. jocosus*), so we only give some specifications and measurements for the specimen from Buenos Aires: length 8.0 mm, length of forewing 6.5 mm; the yellow posterior band of the pronotum is obsolescent; lower interocular distance 0.92 times upper interocular distance; middle interocular distance 0.58 times width of head; postocellar distance 1.55 times ocello-ocular distance; frons densely punctate; diameter of punctures on middle of frons 0.023-0.030 mm, separated by 0.5-1.0 times their diameter; mesopleuron densely, finely punctate; diameter of punctures below scrobal groove 0.015-0.020 mm, separated by approximately 0.3 times their diameter. Middle and hind tibiae with numerous spiniform setae from base to apex. Seventh and eighth sterna and genitalia as figured by Evans (1967, figs. 1-2). Gonostylus basally with four flattened, large, curved setae (Fig. 10, and Evans, 1967, fig. 2).

**Variation. Female paratypes.** The apical yellow band of the clypeus may vary from 0.3 to 0.4 times the median length of the clypeus. In one paratype the pronotum is entirely black, and in all paratypes the posterior yellow spot of the propodeum is smaller than in the holotype. Paratypes have the third metasomal tergum with the basal two thirds reddish. The number of small spiniform setae on the hind tibiae vary from none to three, and these are always on the apical fifth of the tibia.

**Comments.** *Epipompilus platensis* belongs in the aztecus species group of Evans (1967), characterized by the female with a broad face and the eyes converging above, and by the male with a subgenital plate ending in a slender, parallel-sided, apical process. Using Evans' key of 1967, *E. platensis* does not coincide with any of the species of the aztecus group, nor does it coincide with any of the species described later by him (Evans, 1977). In his previous key to *Epipompilus* (Evans, 1961) the new species runs to couplet six because of its color pattern, and with some difficulties to *E. haupti* (Arlé). Regrettably, the type of *Aulocostethus haupti* Arlé is lost (Dr. F. Vivallo, Museu Nacional Rio de Janeiro, personal communication), and current interpretation of this species is based on a specimen from Campinas, state of São Paulo, studied by Banks (1947) and Evans (1961), which belongs in the delicatus species group of Evans (1967). Nevertheless, according to the original description of *E. haupti* (Arlé, 1936), *E. platensis* differs from it in several regards, in color

and morphology. The yellowish marks are extended on the mesosoma of *E. haupti*, covering the posterior part of the mesopleuron, most of the metapleuron, and the lateral side of the propodeum, but they are reduced on the head to a paraocular spot at the level of the torulus. This pattern is in contrast with that of *E. platensis*, which has reduced yellowish markings on the mesosoma, but has a conspicuous yellowish band on the apex of the clypeus, besides the paraocular spot. Although the pattern of red, black, and pale spots on the metasoma is similar in both species, the legs are extensively reddish in *E. platensis*, while the reddish color is restricted to the posterior femur in *E. haupti*. The distance from the lateral ocellus to the posterior margin of the head is larger in *E. haupti* (0.58 X the postocellar distance, Arlé's measurements) than in *E. platensis* (0.41 X the postocellar distance). The marginal cell of the forewing and the second submarginal cell are proportionally longer and narrower in *E. platensis*: the vein 3-rm is 2.17 X vein 2-rm (2.3 X in *E. haupti*), and the abscissa of vein RS corresponding to the second submarginal cell is 1.3 X the last abscissa of RS to the wing margin (1.14 X in *E. haupti*).

Four females, one of them not progressing beyond the stage of pupa, and one male of *E. platensis* were reared by one of us (J.B.) from individuals of the spider genus *Ariadna* (Segestriidae) collected in the vicinity of the city of La Plata, Buenos Aires province, Argentina. A contribution on this association and the biology of the wasp is in preparation.

This species is closely related to *E. jocosus*; see comparative comments under that species.

**Type material.** Female holotype, Villa del Plata, Partido de Ensenada, Gran La Plata, Buenos Aires, Argentina, 7-V-2015, J. Barneche (MACN). The following are paratypes: Argentina, Buenos Aires: 1 female, Villa del Plata, Partido de Ensenada, Gran La Plata, 7-V-2015, J. Barneche (MACN); 1 male, Hernández, Partido La Plata, 5-V-2015, J. Barneche (MACN); 1 female, Río Sarmiento, Delta del Paraná, Partido Tigre, II-1976, A. Oliva (MACN). Brazil, Santa Catarina: 1 male, Nova Teutonia, 24-I-1927, F. Plaumann (MACN).

### *Epipompilus jocosus* Evans

(Figs. 5-8, 11-13)

*Epipompilus jocosus* Evans, 1967: 7-8 (Holotype female, Florida, Uruguay, II-1952, Museum of Comparative Zoology).

*Epipompilus jocosus* was based on a female from Uruguay. Evans (1967) misassociated a male from Santa Catarina, Brazil, with the female holotype. His description and careful drawing of the genitalia of this male does not correspond to *E. jocosus*, but to the new species here described as *E. platensis*. The male of *E. jocosus* shares with its female the extended ferrugineous coloration of the face (Figs. 5-6), the same pattern of coloration of the legs, with reddish forecoxae (Figs. 7-8), and the presence of yellow spots on the metasoma, although only on the

second metasomal tergum (Fig. 8). We register this species for Argentina, for the provinces of Entre Ríos and Buenos Aires.

**Male description.** Length 7.5 mm; length of forewing 7.0 mm. Color. Head black, with extensive reddish to yellowish parts, as follows: mandible, palpi, labrum, clypeus, interantennal area, malar area, paraocular area up to middle of inner orbit, and antenna entirely. Thorax and propodeum black, with following yellow parts: anterior and lateral margins of pronotum, posterior margin of pronotum including pronotal lobes, and posterior rim of propodeum. Metasoma black, with lateral yellow spot on second tergum. Fore leg entirely reddish. Middle and hind coxae and trochanters black, coxae with yellow stripes; middle leg with reddish femur and tibia, yellowish tibial spurs and fuscous tarsus; hind femur reddish, with black apex and fuscous ventral surface; hind tibia fuscous, with black base followed by basal yellow spot and yellowish tibial spurs; hind tarsus fuscous. Wings weakly infuscated, with diffuse darker cloud on second and third submarginal cells. Morphology. Head 1.15 times as wide as high. Eyes weakly divergent above, lower interocular distance 0.95 times upper interocular distance. Middle interocular distance 0.59 times width of head. Postocellar distance twice ocellocular distance. Hairs on eye minute, less than width of an ommatidium. Frons densely punctate; diameter of punctures on middle of frons 0.025-0.030 mm, separated by 0.3-0.5 times their diameter. Proportions of scape, pedicel and first three flagellomeres, 30:11:21:19:19; first flagellomere 0.37 times upper interocular distance. Mesopleuron densely, finely punctate; diameter of punctures below scrobal groove 0.015-0.018 mm; punctures separated by 0.3 times their diameter, or less. Propodeum forming low curve in profile; transversely, finely striate on all its surface. Middle and hind tibiae with numerous spiniform setae from base to apex. Seventh and eighth metasomal sterna as in figure 13. Gonostylus on ventral surface clothed with wavy hairs and basally with group of flattened, large, curved setae (Fig. 12).

**Comments.** *Epipompilus jocosus* and *E. platensis* are morphologically quite similar in all their characters and proportions, although they are easily separated by their color pattern, as shown in the key and illustrations. These two species are the only known in the genus to have a group of highly modified setae on the base of the gonostylus, on its ventral surface (Figs. 10, 12, fs). *Epipompilus platensis* has a group of four such setae in one row, while *E. jocosus* has two rows with 7-8 setae each, the basalmost setae being partially fused. The other setae on the ventral surface of the gonostylus of *E. platensis* are straight, a few of them with wavy apices (Fig. 10); on the contrary, most setae are strongly wavy in *E. jocosus* (Fig. 12). The digitus of the volsella, and the paramere are proportionally shorter in *E. jocosus* than in *E. platensis* (Figs. 9, 11).

**Material studied.** Argentina. Entre Ríos: 1 female, San José, Colón, Entre Ríos, 29-I-1998, G. Zubarán col. (MACN); 1 female, Liebig, Entre Ríos, V-1984, Zelich col. (MACN). Buenos Aires: 1 male, Zelaya, Partido Pilar, V-1936 (MACN).





**Figs. 1-2.** *Epipompilus platensis* sp. n. 1, female holotype, habitus, lateral view; 2, male, habitus, lateral view. Scale lines = 2 mm.

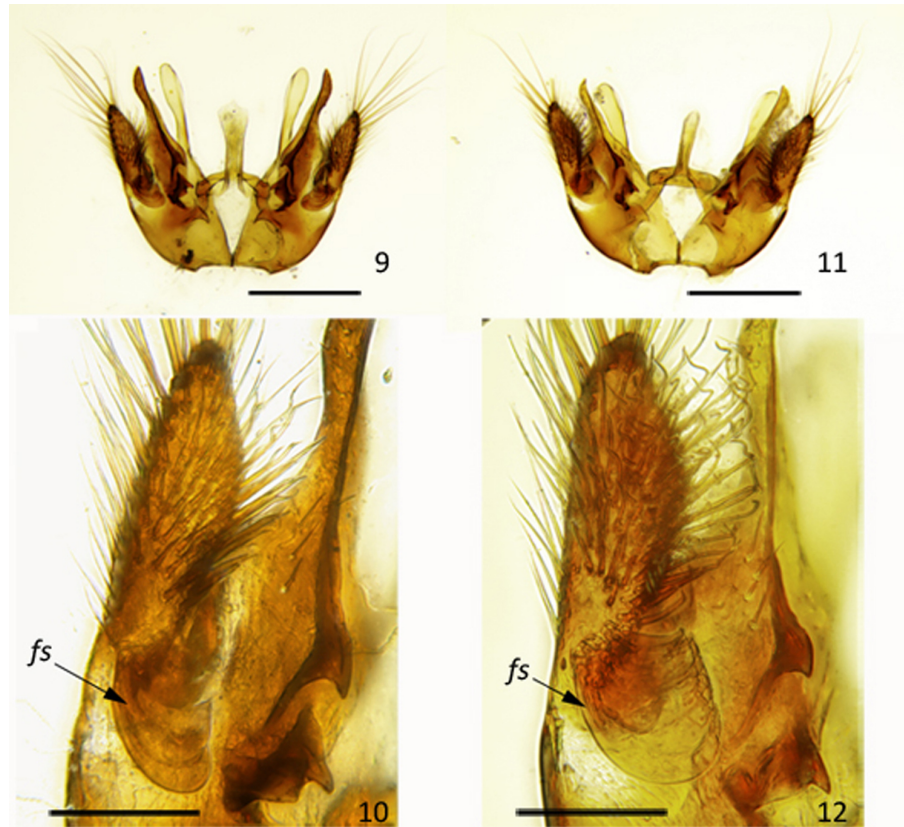


**Figs. 3-6.** *Epipompilus platensis* sp. n., face. 3, female; 4, male. *Epipompilus jocosus* Evans, face. 5, female; 6, male. Scale lines = 0.5 mm.

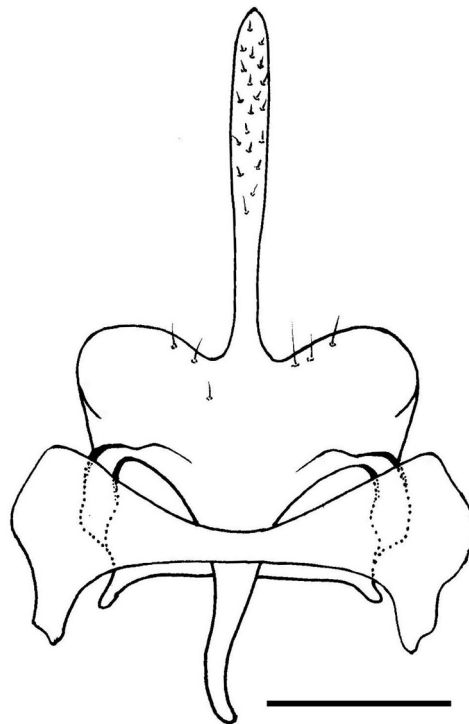




**Figs. 7-8.** *Epipompilus jocosus* Evans. 7, female, habitus, lateral view; 8, male, habitus, lateral view. Scale lines = 2 mm.



**Figs. 9-12.** *Epipompilus platensis* sp. n., male. 9, genital capsule, ventral view; 10, gonostylus. *Epipompilus jocosus* Evans, male. 11, genital capsule, ventral view; 12, gonostylus. fs, flattened, curved setae. Scale lines, figs. 9, 11 = 0.3 mm; figs. 10, 12 = 0.1 mm.



**Fig. 13.** *Epipompilus jocosus* Evans. Male, metasomal sterna 7 and 8, ventral view. Scale line = 0.2 mm.

*Epipompilus excelsus* (Bradley)

*Aulocostethus excelsus* Bradley, 1944: 143-144 (Holotype female, Nova Teutonia, Santa Catarina, Brazil, 25-I-1939, F. Plaumann, Museum of Comparative Zoology).

*Epipompilus excelsus*: Evans, 1961: 32-33, figs 3-4 (male description). Wahis, 1957: 47-49 (color variation). Evans, 1967: 15 (color variation). Santos & Noll, 2010: 2, fig.1 (distribution).

*Epipompilus excelsus* is known to occur in the states of Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, and Santa Catarina in Brazil (Evans, 1967; Santos & Noll, 2010), and in the department of Itapúa in Paraguay (Santos & Noll, 2010). We register this species for Argentina, for the province of Misiones.

One of the characters used by Evans in his key (1967) to separate *E. excelsus* from the closely related *E. tucumanus* is the extent of black on the base of the forecoxa, reduced in the latter species, although he acknowledges that this feature is variable (Evans, 1967, p. 15). The specimen from Misiones has only the basal 0.25 of the coxa black, and would run to *E. tucumanus* in the key, but its coarse punctation and characteristics of the genitalia indicate that it belongs to *E. excelsus*.

**Material studied.** Argentina, Misiones: 1 male, Cataratas, Departamento Iguazú, 28-X-1954, De Carlo & Viana (MACN).

*Key to species of Epipompilus in Argentina*

**Females**

1.- Thorax reddish in part; propodeum entirely reddish. Eyes convergent below (lower interocular distance 0.85-0.95 X upper interocular distance). Hind tibia with numerous short, spiniform setae distributed from base to apex of tibia. 2

1'.- Thorax and propodeum black, with yellowish markings. Eyes convergent above (lower interocular distance 1.07-1.12 X upper interocular distance). Hind tibia without, or with only a few short, spiniform setae restricted to apical fourth of tibia. 3

2.- First metasomal tergum and basal half of second reddish, remainder of metasoma black. Pronotum black, without pale marks. *E. excelsus*

2'.- First metasomal tergum reddish on basal third, remainder of metasoma black. Pronotum black, with whitish band on posterior margin. *E. tucumanus*

3.- Face reddish on clypeus, supraclypeal area, lower part of frons, paraocular area up to upper third of inner orbit, malar area, and lower outer orbit. Metasoma black, with yellowish, more or less reniform, paired spots on metasomal terga 2 through 6, and on sterna 2 through 5. Forecoxa reddish. *E. jocosus*

3'.- Face black, with yellowish band on apical third of clypeus, and yellowish spot on inner orbit at level of torulus. First and second metasomal terga and basal half of third reddish; remainder of metasoma

black, with paired yellowish spots on terga 5 and 6. Forecoxa black, with yellowish apical spot. *E. platensis*

#### Males

1.- Propodeum black, without pale marks. Hind leg with femur and tibial spurs black. Gonostylus with simple setae all over. 2

.- Propodeum black, with yellowish lateral band on posterior rim. Hind leg with reddish femur and yellowish tibial spurs. Gonostylus basally with group of flattened, curved setae tightly packed together. 3

2.- Mesopleuron dull, coarsely punctate, with punctures separated by 0.3-0.5 times their diameter. *E. excelsus*

2'.- Mesopleuron shiny, finely punctate, with punctures separated by their diameter or more. *E. tucumanus*

3.- Face reddish on clypeus, supraclypeal area, lower part of frons, paraocular area up to half of inner orbit, malar area, and lower outer orbit. Forecoxa reddish. Second metasomal tergum with basal, transverse, yellowish spot. *E. jocosus*

3'.- Face black, with yellowish band on apical third of clypeus, and yellowish spot on inner orbit at level of torulus. Forecoxa black, with yellowish apical spot. Second metasomal tergum black. *E. platensis*

## Acknowledgements

We thank Felipe Vivallo for his information on the whereabouts of Arle's types, and two anonymous reviewers for their useful comments on the manuscript.

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## Author notes

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