

A new Costa Rican flower fly (Diptera: Syrphidae) and a replacement name for a neotropical flower fly genus

[Eine neue Schwebfliegenart aus Kostarika (Diptera: Syrphidae) und ein Ersatzname für eine neotropische Schwebfliegenart]

by
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Abstract	<i>Cepa apeca spec. nov.</i> is described from Costa Rica. <i>Cepa</i> is proposed as a replacement name for <i>Xela</i> THOMPSON & VOCKEROTH, 1999. A key to the species of <i>Cepa</i> is provided.
Key words	Neotropical, Costa Rica, Syrphidae, <i>Cepa</i> , <i>Xela</i> , key
Zusammenfassung	<i>Cepa apeca spec. nov.</i> wird aus Kostarika beschrieben. Der Gattungsname <i>Cepa</i> wird als Ersatzname für <i>Xela</i> THOMPSON & VOCKEROTH, 1999 eingesetzt. Ein Bestimmungsschlüssel für die Arten der Gattung <i>Cepa</i> wird gegeben.
Stichwörter	Neotropis, Kostarika, Syrphidae, <i>Cepa</i> , <i>Xela</i> , Bestimmungsschlüssel

Introduction

Flies of the family Syrphidae are pollinators, next only to bees as facilitators of flowering plant reproduction (LARSON et al. 2001; BIESMEIJER et al. 2006). Their immatures have diverse biologies, ranging from predators of other insects (mainly Hemiptera: Homoptera) to filter-feeders in various liquid media. Some 6,000 species, arranged in 314 genera and subgenera, have been described, but many more are known and await description. This paper describes one such species from Costa Rica of a group previously known only from 7 specimens of two species from southeastern Brazil. The name of that genus, *Xela* THOMPSON & VOCKEROTH (THOMPSON 1999), is, unfortunately the same as one applied to a fossil trilobite from Australia (JELL 1990: 285). Hence, a new name is also provided for this genus. Methods and terminology used remain the same as in previous papers on Mesoamerican flower flies (THOMPSON 1999, THOMPSON & ZUMBADO 2002).

Cepa THOMPSON & VOCKEROTH, nova nomen

For *Xela* THOMPSON & VOCKEROTH (1999: 340), not *Xela* JELL (1990: 285). The name for the flower fly genus *Xela* was created as the reverse of the nickname of Charles Paul ALEXANDER (Alex). ALEXANDER was also known to his friends and students as “CP.” Hence, the replacement name is an arbitrary combination of letters to reflect this other nickname. The name is to be treated as feminine. The authorship of the replacement name remains VOCKEROTH & THOMPSON as the initial discovery and subsequent work on this taxon were and is still a cooperative effort.

Key to the species of *Cepa*

1. Antenna entirely black; frontal prominence greatly produced (fig. 1); wing bicolored, dark brown basally, light brownish apically; crossvein r-m slightly beyond end of subcosta. 3rd costal section equal to 4th (Brazil, Paraguay) *alex* THOMPSON

- Antenna partially orange; frontal prominence not produced (fig. 2); wing hyaline basally; crossvein r-m at or basal to end of subcosta 2
- 2. Antenna entirely orange; wing entirely hyaline, almost entirely microtrichose; crossvein r-m at level of end of subcosta; 3rd costal section shorter than 4th (Brazil) *margarita* THOMPSON
- Antenna dark except basoventral 1/3 orange; wing hyaline except anteroapical 1/4 brownish; cells C, R and BM almost entirely bare; crossvein r-m basal to end of subcosta; 3rd and 4th costal sections equal (Costa Rica) *apeca* THOMPSON **spec. nov.**

Cepa apeca THOMPSON **spec. nov.**

Fig. 1 (habitus)

Female

Head: Dull greenish-blue black, shiny except brownish-white pollinose on ventral 2/3 of occiput; face, gena, frons except medially, and ventral 1/2 of occiput white pilose; rest of head black pilose; antenna brownish orange except basoflagellomere brown on dorsoapical 3/4, black pilose; basoflagellomere elongate, about 3.25 as long as wide, with apical 1/3 narrow, only 2/3 as wide as basally; antennal ratio, 1:1.5:6.9.

Thorax: Subshiny, greenish-blue black, black pilose except for some white pile along anterior edge of anepisternum and anepimeron; halter black, plumula brown; calyter white. **Legs:** Black, black pilose.

Wing: Hyaline except anteroapical 1/4 brown, microtrichose except extensively bare basomedially; bare cell C, anterior 1/2 cell R, basal 1/3 cell R2+3, basal 1/4 cell R4+5, cell BM, basal 1/5 cell Cu1, anteroapical 3/4 cell CuP, anterior to vein A2 on anal lobe, basomedial 1/3 of alula; crossvein r-m basal to end of vein sc; 3rd and 4th costal sections equal.

Abdomen: Greenish-blue black, subshiny, except brownish-black pollinose on 1st and basomedial 1/3 of 2nd tergum; 1st tergum white pilose; 2nd tergum black pilose except white pilose basolateral and narrowly along anterior margin to medial 1/4; 3rd tergum black pilose except white pilose laterally and narrowly along apical margin; 4th and 5th terga white pilose.

Length. Body 8.7 mm, wing 6.2 mm

Type. Holotype female, COSTA RICA, Guanacaste, Parque Nacional Guanacaste, Los Almendros, LN 334800 369800, 12–31 May 1993, E. LÓPEZ, INBIO CRI001167891, deposited in INBio, Santo Domingo. Holotype in good condition but missing left proleg and covered with lepidoptera scales.

Etymology: The epithet is an arbitrary combination of letters designed to reflect the reverse of the genus name and to honor my father, Paul Christian THOMPSON (1901–1984). What the future will assess of my accomplishments will be due to the abilities and values I inherited from my parents.

Cepa apeca is readily distinguished from the other two *Cepa* species by its distinctive overall metallic dark greenish-blue coloration. Both *alex* THOMPSON and *margarita* THOMPSON are bright bluish-metallic colored flies. *Cepa apeca* also differs in having the apicoposterior corner of anterior flattened anepisternum and katepimeron pilose; these areas are bare in the Brazilian species. The discovery of *Cepa apeca* significantly expands the known range of this genus from what had appeared to be a narrow endemic restricted to southeastern Brazil and Paraguay to what is probably a widespread low-land, but rare neotropical group. Unfortunately, this discovery contributes little significant new character information for the phylogenetic placement of this enigmatic genus which remains among the Merodontini.

In my previous key and description of these species (THOMPSON 1999), I incorrectly labeled the costal sections, using the 4th instead of the 3rd, and 5th instead of the 4th.



1 Figs 1–2: Habitus, lateral view. – 1: *Cefa alex* (THOMPSON); – 2: *C. apeca* THOMPSON spec. nov. (Pin digitally omitted in both figures).
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Literature

- BIESMEIJER, J. C.; ROBERTS, S. P. M.; REEMER, M.; OHLEMÜLLER, R.; EDWARDS, M.; PEETERS, T.; SCHAFFERS, A. P.; POTTS, S. G.; KLEUKERS, R.; THOMAS, C. D.; SETTEL, J. & KUNIN, W. E. (2006): Parallel declines in pollinators and insect-pollinated plants in Britain and the Netherlands. – *Science* **313**: 351–354 [2006.07.21].
- JELL, P. A. (1990): Trilobita. – Pp. 257–316 in: BENGSTON, S.; CONWAY-MORRIS, S.; COOPER, B. J.; JELL, P. A. & RUNNEGAR, B. N. (eds): Early Cambrian fossils from South Australia. – *Memoir of the Association of Australasian Palaeontologists* **9**: 364 pp. [1990.??.??].
- LARSEN, B. M. H.; KEVAN, P. G. & INOUE, D. W. (2001): Flies and flowers: taxonomic diversity of anthophiles and pollinators. – *Canadian Entomologist* **113**: 439–465 [2001.07.??].
- THOMPSON, F. C. (1999): A key to the genera of the flower flies of the Neotropical Region including the descriptions of genera and species and a glossary of taxonomic terms. – *Contributions on Entomology, International* **3**: 319–378 [1999.08.23].
- THOMPSON, F. C. & ZUMBADO, M. A. (2002): Mesoamerican *Mallota* flower flies (Diptera: Syrphidae) with the description of four new species. – *Studia dipterologica* **9**: 89–107 [2002.09.25].

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