Revision of the genus Pelecinobaccha Shannon, description of Relictanum gen. nov., and redescription of Atylobaccha flukiella (Curran, 1941) (Diptera: Syrphidae)

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Recent phylogenetic analyses of \textit{Ocyptamus} Macquart, 1834 (Diptera, Syrphidae) confirmed the paraphyly of this genus and provided evidence to divide it into several monophyletic subgroups, of which the largest is the clade traditionally treated as the \textit{Ocyptamus tristis} species group. This group is here redefined, divided into the genera \textit{Pelecinobaccha} Shannon, 1927 and \textit{Relictanum} \textit{gen. nov.}, and revised along with the closely related and newly resurrected genus \textit{Atylobaccha} Hull, 1949. Twenty-four new species (22 in \textit{Pelecinobaccha} and two in \textit{Relictanum}) are described and 35 species (27 in \textit{Pelecinobaccha}, seven in \textit{Relictanum} and \textit{Atylobaccha flukiella} Curran, 1941) are redescribed. \textit{Pelecinobaccha} is divided into four species groups (\textit{P. adpersa} species group, \textit{P. brevipennis} species group, \textit{P. peruviana} species group and \textit{P. susio} species group). An identification key, illustrations and distribution maps for all species from this study are also presented.

**Key words:** systematics, taxonomy, flower flies, hover flies

**Introduction**

\textit{Ocyptamus} Macquart, 1834 is the second most speciose genus (~300 spp.) of Syrphidae in the Neotropical Region [the first being \textit{Copestylum} Macquart, 1846 (~320 spp.)] (Thompson 1999) and is closely related to the genera \textit{Eosalpingogaster} Hull, 1949a and \textit{Toxomerus} Macquart, 1855 (Mengual \textit{et al.} 2008; Mengual & Thompson 2011). Some recent phylogenetic studies place \textit{Eosalpingogaster} and \textit{Toxomerus} within \textit{Ocyptamus}, rendering the latter paraphyletic (Mengual \textit{et al.} 2008; Mengual \textit{et al.} 2011; Miranda 2005; Miranda 2011) and thus indicating that the definition of the genus \textit{Ocyptamus} should be re-evaluated. The paraphyly could be resolved by either expanding \textit{Ocyptamus} to include \textit{Eosalpingogaster} and \textit{Toxomerus}, or by breaking \textit{Ocyptamus} into smaller monophyletic genera and narrowing \textit{Ocyptamus sensu stricto} to a defined clade. This paper is a step in the latter direction.

We recognize three monophyletic groups that can be logically separated from the paraphyletic \textit{Ocyptamus} and treated as named genera. One of these (\textit{Pelecinobaccha} Shannon, 1927) is made up of species with highly modified female genitalia, one (\textit{Atylobaccha} Hull, 1949a) is a monotypic group of flies with no facial tubercle and one (\textit{Relictanum} \textit{gen. nov.}) is made up of small dark petiolate species with setulose female cerci. Even with the removal of these three taxa, \textit{Ocyptamus} remains a paraphyletic assemblage and will remain so until the formal recognition of further former \textit{Ocyptamus} subgroups as separate taxa in a forthcoming paper.

\textit{Ocyptamus} currently includes most of the New World species previously allocated to the genus \textit{Baccha} Fabricius, 1805 (Thompson \textit{et al.} 1976), except for \textit{Baccha elongata} (Fabricius, 1775) and \textit{Pseudodoros elavatus} (Fabricius, 1794). Hull (1943a, 1949a) suggested an outline of sub-generic divisions and depicted a ‘putative evolutionary development scheme’ based on abdominal characters. The only subsequent paper dealing with generic/subgeneric classification of \textit{Ocyptamus} is Thompson & Zumbado’s (2000) treatment of the subgenus \textit{Mimocalla} Hull, 1943a. Among the species group of Hull’s \textit{Baccha sensu stricto}, we chose to revise Hull’s \textit{O. tristis} group (= \textit{Pelecinobaccha} Shannon and \textit{Relictanum} Miranda \textit{gen. nov.}) along with the superficially similar, and closely related (Miranda 2011), \textit{Atylobaccha}. 

**References**

Relictanum shropshirei (Curran, 1930) comb. nov.
Map 1. Figure 45 (f–h).

Baccha shropshirei Curran, 1930.—Curran, 1930: 7. Type locality: Panama, Canal Zone. Holotype female AMNH. Hull, 1949a: 241 (fig. 231, abdomen), 283 (fig. 386, wing)


Male. Male unknown.

**Female:** As in *R. braziliensis* but wing entirely microtrichose and dark on basal ½ (dark on cells bc, c, sc, r, bm, cu<sub>p</sub>, most of anal lobe, most of cu<sub>a</sub>, basal ½ of r<sub>1</sub>, basal ⅓ of r<sub>2+3</sub>, base of r<sub>4+5</sub> and basal ⅓ of dm). The female 7<sup>th</sup> sternite is distinctly sclerotized, the 8<sup>th</sup> tergite is narrower, and the 10<sup>th</sup> tergite is narrow, strongly convex posteriorly and with fewer setulae.

**Length.** 6.5–7mm; wing 5–5.5mm.

**Distribution.** Mexico (Veracruz), Panama (Canal Zone), Venezuela (Zulia).


**Comments.** The wing differences between the types of *B. braziliensis* and *B. shropshirei* were noted by Reemer (2010) as well, where he stated on page 186 that “These specimens were compared with the holotype of *B. braziliensis* [...] However the following differences were noted (in parentheses the character state in the Mapane specimens): wing with bare areas on cells r, bm and cu<sub>p</sub> (entirely microtrichose), wing with vague yellowish anteromedial blotch (infuscated on basal half), pterostigma clearly darker than 2<sup>nd</sup> costal cell (pterostigma and 2<sup>nd</sup> costal cell of same yellowish brown colour). [...] they are identified as *O. shropshirei*, with which they agree quite well”.

Acknowledgements

We would particularly like to thank F. C. Thompson, for his suggestion of working with the *O. tristis* group and for the provision of a tentative list of species that belonged to the group, which became a starting point for the current work. Thanks also to Adam Jewiss–Gaines, Andrew D. Young, Michelle M. Locke and Morgan D. Jackson for their valuable help and to Andrew A. Johnston, Carlos Lamas, David Grimaldi, E. R. Hoebeke, Jason Weintraub, Joachim Ziegler, Luciane Marinoni, Manuel Zumbado, Nigel Wyatt, Orlando Tobias, Philip D. Perkins, Peter Sehnal and Tam Nguyen, for loans of specimens and help with observation of characters. We thank the Museum of Comparative Zoology, Harvard University, for the permission to use its dorsal habitus images of the type specimens of *Baccha cryptica* and *B. pandora* and the American Museum of Natural History for permission to use its dorsal habitus images of the type specimens of *B. alicia, B. aster, B. cora, B. ida, B. flukiella, B. mexicana, B. schwarzi* and *B. summa*. Funding was provided by Coordenação de aperfeiçoamento de pessoal de nível superior (CAPES) scholarship to GFWM, Natural Sciences and Engineering Research Council of Canada (NSERC) Canpolin network grant to Peter Kevan, NSERC Discovery grants to JHS and SAM and Agriculture and Agri–Food Canada funding to JHS. This is contribution #59 from NSERC–CANPOLIN.

References


Ottawa, Canada, pp. 9–50.


http://dx.doi.org/10.1163/22119434-900000295


http://dx.doi.org/10.5479/si.00963801.70-2658.1


http://dx.doi.org/10.1007/s10905-010-9221-0


