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Revision and systematic placement of *Prospalaea* Aldrich (Diptera, Tachinidae)

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ABSTRACT

Revision and systematic placement of Prospalaea *Aldrich (Diptera, Tachinidae). In the present study, the genotype and single species* Prospalaea insularis *(Brauer & Bergenstamm, 1891) is redescribed and the male terminalia fully illustrated. The species is known only from a single type specimen collected from the Caribbean subregion, which was examined for this study. A new systematic placement is proposed, with the genus being transferred from the Exoristini to Eryciini, both tribes of Exoristinae.*

Keywords: Eryciini, Exoristini, *Prospalaea insularis,* Tachinidae, taxonomy

INTRODUCTION

Prospalaea was described by Aldrich (1925) to include only *Prosopaea insularis* Brauer & Bergenstamm, 1891 from St. Thomas, West Indies. By examining the male syntype of *P. insularis* deposited in the Naturhistorische Museum Wien, Aldrich observed that the species was very distinct from *P. instabilis* Rondani, 1861 (= *Frontina nigricans* Egger, 1861), the genotype of *Prosopaea,* and created the new genus *Prospalaea* for it. Aldrich (1925) did not mention the systematic placement of *Prospalaea,* although he pointed out that "It has the excessively large bristles extending up to the facial ridges of *Phorocera tachinomoides* and allies (…)". Townsend, in his *Manual of Myiology,* placed the genus within the Carceliini, first in his key to the genera of the tribe (1936:208), and then (1941:158) in his diagnosis of *Prospalaea.* Later, Guimarães (1971), in his Neotropical Catalogue, placed *Prospalaea* within the Exoristini.

Based on the examination of the type-material of *Prospalaea insularis,* the present study provides a diagnosis of *Prospalaea,* the redescription of *P. insularis,* and the illustration of the male terminalia. Finally, a discussion is presented to support the transfer of *Prospalaea* from Exoristini to Eryciini.

The examined material is deposited in the Naturhistorische Museum Wien, Vienna, Austria. Morphological terminology follows mainly McAlpine (1981) and Wood (1987).

RESULTS

Prospalaea Aldrich, 1925.

Prospalaea Aldrich, 1925:111. Type-species: *Prosopaea insularis* Brauer & Bergenstamm, 1891, by monotypy.

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Generic distribution – Neotropical (1 species).

References – Aldrich, 1925:111 (genus description), Townsend, 1936:208 (key to Carceliini genera), Townsend, 1941:158 (genus diagnosis).

Diagnosis – Eye bare; no proclinate outer orbital seta in male; facial ridge with stout and erect setae almost reaching the level of aristal insertion; first flagellomere long and slender, 5X the length of pedicel; arista bare; prosternum setulose; proepisternum bare; katepisternals 5 (four setae horizontally aligned, and one below between the first and second setae); abdomen dark brown with irregular pattern of silver pruinosity; no discal setae on tergites 1+2 to 4; cerci elongated, not fused each other although well approached medially.

Prospalaea insularis (Brauer & Bergenstamm, 1891)

(Figs. 1-6)

insularis Brauer & Bergenstamm, (1891:30) 1892:334 *(Prosopaea)*. Syntype male (NMW) (see discussion below). Type-locality: West Indies, St. Thomas. Distribution: St. Thomas.

Prosopaea insularis Brauer & Bergenstamm, (1891:30) 1892:334 (male description) (= *Tachina insularis* Wiedemann).

Frontina insularis (Wiedemann) [sic]; Aldrich, 1905:463 (cat., comments "Perhaps a manuscript name of Wiedemann's").

Prospalaea insularis (Brauer & Bergenstamm); Aldrich, 1925:111 (generic description, male redescription), Townsend, 1936:208 (key to Carceliini genera), Townsend, 1941:158 (generic diagnosis), Guimarães, 1971:160 (cat.).

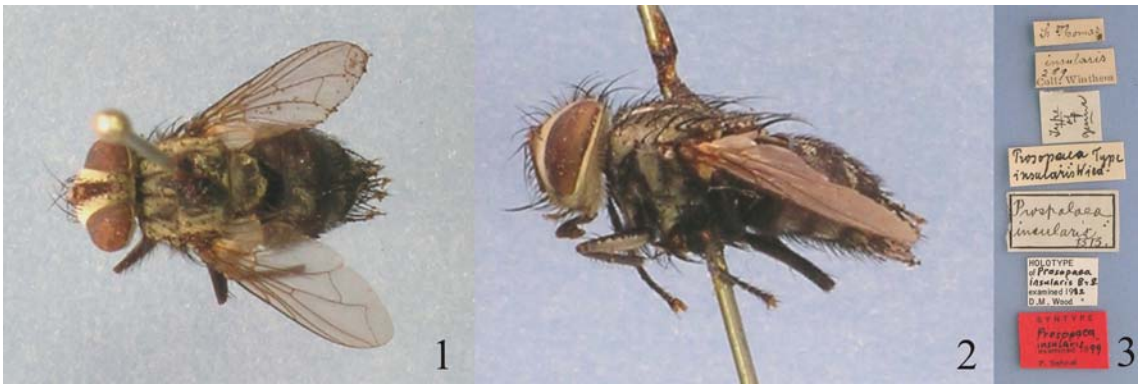
Redescription

Male (Figs. 1-2) – Body length: 10.5 mm, wing length: 8 mm

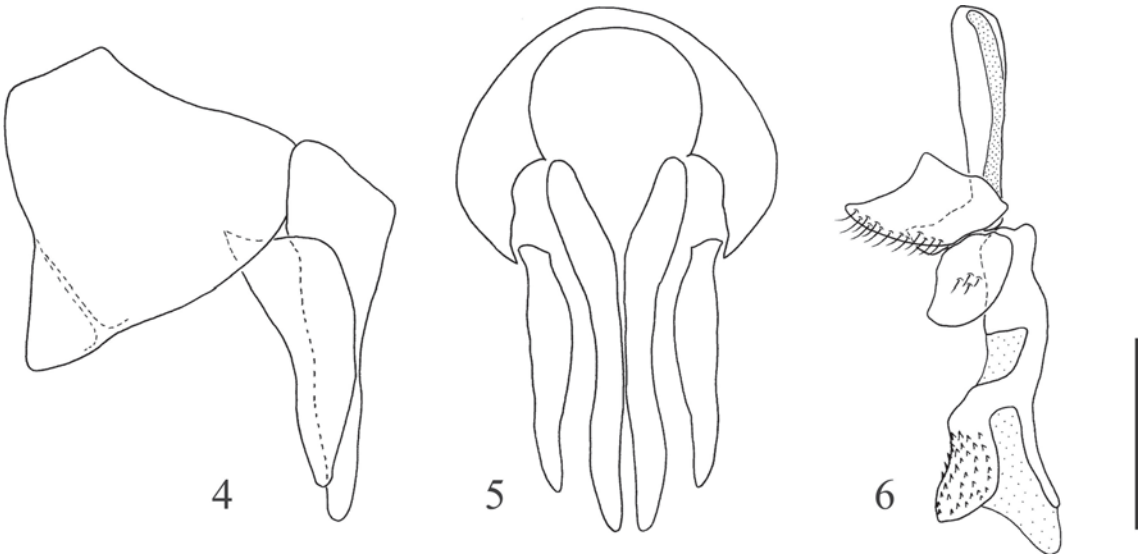
Colouration – Frontal vitta dark brown; face, parafacial and fronto-orbital plate silver pruinose. Antenna dark brown but orange at the joints. Palpus yellow, the basal third brown; proboscis dark brown. Thorax dark brown with silver pruinosity; the scutum with the sides pale golden pruinose from humeral to postalar callus, and three silver pruinose stripes (alternated by dark brown stripes), two lateral on the dorsocentral rows and one median on the acrostichal rows. Wing hyaline; calypters white; halter brown, the knob dark brown. Legs dark brown with some silver pruinosity. Abdomen dark brown with an irregular pattern of silver pruinosity on tergites 3 and 4, and tergite 4 with a rather pale golden pruinosity.

Head – Eye bare, with at most very short and sparse setulae. Six pairs of frontal setae, with three of them below base of antenna. Two reclinate inner orbital setae. Fronto-orbital plate with fine setulae from vertex almost to lowermost frontal seta. Fronto-orbital plate slightly wider than parafacial. Facial ridge with stout and erect setae almost reaching the level of aristal insertion. Parafacial bare. First flagellomere 5X the length of pedicel, almost reaching the level of vibrissa, and slender, with the same width from base to apex; arista elongated and slender, about 1,3X the length of first flagellomere. Lower facial margin weakly projecting. Vibrissa strong, inserted about level with lower facial margin. Genal dilation covered with fine black setulae. Palpus filiform, weakly enlarged apically; labella developed, as long as prementum, which is shorter than palpus.

Thorax – Acrostichals 3+[?2] [postsutural acrostichals damaged by the pin; Aldrich (1925) mentioned the acrostichals as "3, 2 (?)"]. Dorsocentrals 3+4. Humerals 4, three aligned and one more anterior between the inner and median setae. Presutural intra-alars 3; two of them close to humeral callus, the anterior laterally and the posterior seta stronger, and the third seta weak and very close to the suture. Presutural supra-alars 2, one inner and more anterior, another outer and stronger. Notopleurals 2. Postsutural intra-alars 3; intra-postalar weak. Postsutural supra-alars 3, the anteriormost (prealar) strongly developed, more than 1/2 the length of the strongest supra-alar and stronger than the first postsutural intra-alar and dorsocentral. Six strong anepisternal setae. Katepimeron (barette) setulose. Scutellum with one basal, two lateral, one apical and one discal pairs of setae (thorax abraded, missing the apical, one right lateral and the discal setae). *Wing:* costal spine very weakly developed; base of R_{4+5} setulose dorsally and ventrally, with about 3 setulae. *Legs:* Fore tibia with an anterodorsal row of setae, the basal setae stronger; 2 posterior setae, the submedian stronger. Mid femur with 3-4 anterior setae on median third; 3 oblique preapical setae on posterior-posterodorsal surface; a posteroventral row of fine and long setae on basal 1/2. Mid tibia with 2 anterodorsal, 2 posterodorsal, and one submedian ventral seta. Hind tibia with an anterodorsal row of short setae and one strong median seta; and with one anteroventral submedian and one weak posterodorsal median seta.



FIGURES 1-3. *Prospalaea insularis* (Brauer & Bergenstamm), male syntype: **1,** dorsal view; **2,** lateral view; **3,** labels.



FIGURES 4-6. *Prospalaea insularis* (Brauer & Bergenstamm), male syntype: **4,** terminalia, lateral view; **5,** terminalia, posterior view; **6,** aedeagus, lateral view. (Scale bar: 0.5 mm)

Abdomen – Syntergite 1+2 with a pair of median marginal setae (setae missing, indicated only by remaining sockets) and one weak lateral marginal pair. Tergite 3 with one median and one lateral marginal pair of setae (abdomen partially abraded dorsally at the middle, and missing the median setae of tergites 1+2 and 3). Tergite 4 with a marginal row of setae. Tergite 5 with discal and marginal rows. *Terminalia* (Figs. 4-6): Cerci elongated (Figs. 4-5), distally separated, tips close together at median third (Fig. 5). Surstylus elongate, lobe-shaped in lateral view (Fig. 4), shorter than cercus, and with setulae on outer surface. Pregonite keel-shaped and widely setulose on distal margin; postgonite round (Fig. 6). Intermedium moderately developed, short in length and rather flat and lobe-shaped (when viewed dorsally). Epiphallus absent (Fig. 6). Distiphallus with spinules on the anterior sclerotised plate (Fig. 6). Hypandrial arms freely developed (not fused to aedeagus posteriorly).

Female – Unknown.

Hosts – No records available.

Type material examined – Syntype male (NMW) labelled (Fig. 3): "St. Thomas"; "insularis / 2 89[?] / Coll. Winthem"; "Type / of / genus"; "Prosopaea / insularis Wied. / Type"; "Prospalaea / insularis / B.B."; "HOLOTYPE / of Prosopaea / insularis B & B / examined 1982 / D.M. Wood"; "SYNTYPE / Prosopaea / insularis / examined 1999 / P. Sehnal". The terminalia are glued on the first label.

DISCUSSION

Type specimen status

The specimen was labelled (in 1982) as holotype by D.M. Wood (Canadian National Collection, Ottawa), however the number of specimens upon which the species was based was not clearly stated by Brauer & Bergenstamm (1891). More recently (1999), Peter Sehnal (NMW, curator) recognised and labelled it as syntype. According to the latest edition of ICZN (1999), there is no strict necessity to designate a lectotype in cases where a single type specimen remains and no further confusion about the name and its identity could arise. However, it should be noted here that D.M. Wood's statements were according to the 2nd edition of the Code published at 1964, whose version did not include this recent interpretation provided by the 4th edition. As it is not exactly clear whether Brauer & Bergenstamm (1891) examined a single type specimen or a type series, both alternatives might be possible: as holotype by D.M. Wood or as syntype by Peter Sehnal. Until more evidences are provided, I have treated it as syntype.

New systematic placement

Wood (1972) defined the Exoristini primarily on three characters, the setulose prosternum, fused male cerci, and the surstyli basally enlarged and apically reduced; and secondarily by the weak prealar (the first postsutural supra-alar seta at least shorter than the first postsutural dorsocentral), M vein with a fold beyond the bend, a small additional bristle between the second and third supra-alars, four humerals, among other features. Following this definition, *Prospalaea* clearly does not belong to the Exoristini. Apart from the setulose prosternum and four humerals, which are commonly present in other tachinids, no other typical Exoristini features are found in *Prospalaea.*

In a comprehensive study, Tschorsnig (1985) characterised the male terminalia within the Tachinidae and for the Exoristini he pointed out the male cerci solidly fused (called 'syncercus') and hooked towards the tip, and the surstyli broad basally and reduced in length. In *Prospalaea,* the male cerci are freely developed and not hooked, and the surstyli are distinctly elongated. In fact, the male terminalia conforms to the one characterised by Tschorsnig (1985) for members of the Eryciini. Moreover, in the key to Nearctic tachinids of Wood (1987), *P. insularis* runs to *Lespesia* Robineau-Desvoidy, 1863 (a member of the Eryciini). Based on the evidence presented here, *Prospalaea* is removed from the Exoristini and placed in the Eryciini.

Prospalaea can be distinguished from other South American Eryciini mainly by the katepisternal setae (5 in *Prospalaea,* whereas 2-4 in other Eryciini but usually 3). The male terminalia of *Prospalaea* resembles that of *Lespesia,* mainly in shape of cerci and surstyli but differing in the pregonite and postgonite conformations. One could consider these differences due to specific delimitations rather than to generic ones. However, I believe it is still premature to synonymize both genera, and that a phylogenetic analysis will provide a more reliable statement about the taxonomic status of *Prospalaea.*

RESUMO

Revisão e posicionamento sistemático de Prospalaea *Aldrich (Diptera, Tachinidae). No presente estudo, o genótipo e única espécie* Prospalaea insularis *(Brauer & Bergenstamm, 1891) é redescrita e a terminália ilustrada. A espécie é conhecida somente pelo material-tipo coletado da sub-região Caribenha, e que foi examinado aqui. Uma nova posição sistemática é proposta, com a transferência do gênero de Exoristini para Eryciini, sendo ambas tribos de Exoristinae.*

PALAVRAS-CHAVE: Eryciini, Exoristini, *Prospalaea insularis,* Tachinidae, taxonomia

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