

# ***Polietina* Schnabl & Dziedzicki (Diptera, Muscidae): description of the male of *P. major* Albuquerque and female of *P. wulpi* Couri & Carvalho<sup>1</sup>**

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**ABSTRACT.** *Polietina* Schnabl & Dziedzicki, 1911 (Diptera, Muscidae) is a New World genus of Muscini, which comprises 18 species. The male of *P. major* Albuquerque, 1956 and the female of *P. wulpi* Couri & Carvalho, 1997 are herein described and illustrated for the first time. New geographical localities are recorded for both species.

**KEYWORDS.** Muscinae; Muscini; *Polietina major*; *Polietina wulpi*; taxonomy.

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## INTRODUCTION

Following the recent revision of COURI & CARVALHO (1997), the genus *Polietina* Schnabl & Dziedzicki, 1911 is treated as belonging to the subfamily Muscinae, tribe Muscini. This placement is based on its plumose arista, sinuous Subcosta vein and, particularly, by the presence of spined processes on ventral surface of the cercal plate. *Polietina* is considered a monophyletic genus due, at least, to the ciliated postalar wall. Its close relationship to *Polietes* Rondani, 1866, based on the shape of the cercal plate, has been suggested by COURI & CARVALHO (1997).

The genus *Polietina* is restricted to the New World, occurring from southern United States of America (Texas, Galveston) to South America, including southern Brazil and northern Argentina (HUCKETT 1965; PONT 1972; CARVALHO *et al.* 1993; VOCKEROTH 1996; COURI & CARVALHO 1997). Nowadays, this genus comprises 18 species (COURI & CARVALHO 1996, 1997; COURI & PAMPLONA 1997).

ALBUQUERQUE (1956) described *P. major* based on female specimens from Brazil; COURI & CARVALHO (1997) described *P. wulpi* based on one male from Mexico; therefore herein the male and female, respectively, are described and illustrated, as well as new geographical records are added. In the Appendix 1 and 2, the geographical data of the known distribution are presented for both species.

## MATERIAL AND METHODS

The material examined belongs to Departamento de

Zoologia, Universidade Federal do Paraná, Curitiba (DZUP); Museo Entomologico, Leon, Nicaragua (SEAN); Museo Nacional, Rio de Janeiro (MNRJ); and Museu de Zoologia, Universidade de São Paulo, São Paulo (MZSP). The descriptive terminology follows MCALPINE (1981) and HUCKETT & VOCKEROTH (1987) with some exceptions noted in CARVALHO (1989). The abbreviations used are the following: acr, acrostichal setae; AD, anterodorsal surface; AV, anteroventral surface; aed, aedeagus; aed apod, aedeagal apodeme; ca., calcar; cat., catalogue; D, dorsal surface; dc, dorsocentral setae; desc., description; epiph, epiphallus; gon, gonopod; ia, intra-alar seta; inf sp, inferior spined process; P, posterior surface; PD, posterodorsal surface; pm, paramere; psa, postsupra-alar setae; PV, posteroventral surface; redescr., redescription; sa, supra-alar setae; sup sp, superior spined process; V, ventral surface; vtu, ventral tuberculus.

### *Polietina major* Albuquerque, 1956 (Figs. 1-7)

*Polietina major* Albuquerque, 1956: 17-19 (desc. female); fig. 51 (hind tibia), fig. 52 (wing), fig. 53 (ovipositor), fig. 54 (spermathecae); Pont, 1972: 55 (cat.); Carvalho *et al.* 1993: 63 (cat.); Couri & Carvalho, 1997: 258 (key), 268-270 (redescr.), fig. 21 (proboscis), fig. 22-23 (ovipositor), fig. 24 (spermathecae).

Male. Antennae yellow, arista brownish. Proboscis light brown, palpi yellow. Scutum brown with paired faint stripes dorsally, lighter laterally. Scutellum yellowish. Calypters yellow. Wings hyaline with brown spots at apex of R1 and R2+3 and around r-m and dm-cu cross-veins. Legs yellow, mid and hind

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legs slightly darker. Abdomen brown with silver pollinosity, except for tergites 1 and 2 yellow at base, and tergite 3 yellow laterally at base.

Head: eyes ciliated. 8-9 pairs of frontal setae; 1 proclinate and 1 reclinate pair. Parafacial bare. Genae with a set of short setae upwardly directed and situated above subvibrissal setae (Fig. 1). Arista plumose (Fig. 1). Palpus slightly spatulated at apex.

Thorax: acr 2:1, presutural ones sometimes weakly or not developed; dc 2:4; 3 humeral setae, the innermost reduced; 1 posthumeral seta and a strong cilium (sometimes not differing from surface cilia); 3 notopleural setae, the median finer and shorter than the posterior one; anterior postsutural intra-alar seta reduced; 2 sa, the anterior very strong, about twice the second one; 2 psa, the posterior very strong, about twice the anterior one; prealar seta strong, the same size of anterior notopleural seta. Scutellum with a short pair of basal setae; 2 lateral pairs, the anterior one strong; a preapical and a strong apical pair; lateral of scutellum, below scutellar setae, haired. Anepimeron with inferior and superior portions ciliated; greater anepimera bare; suprasquamal ridge bare; anatergite bare; katatergite pubescent; posterior spiracle ciliated on posterior margin; metakatepisternum ciliated above hind coxa; meron ciliated below spiracle.

Wings: base of Radial Sector bare on dorsal surface and ventrally with 3 short cilia (sometimes 2). R1 ciliated dorsally; R4+5 ciliated, dorsal cilia almost reaching apex and ventrally almost reaching r-m crossvein; node of R4+5 densely ciliated dorsally. M ciliated ventrally between r-m and dm-cu crossveins. Subcostal sclerite with 2 ventral cilia.

Legs: fore femur on PD, PV and D with a complete row of setae. Fore tibia on PV with a submedian seta; on D, AD, PD (weaker) and PV with preapical seta. Fore tarsi with developed cilia. Mid femur on PV with a sparse row of setae, shorter at the apical half; AD with 2 short preapical setae; PD with 2 preapical setae, the posteriormost about 1.5 times longer than anterior one; P with a long preapical seta. Mid tibia on P with 4 sparse setae in all extension; PV with a submedian and a apical seta; V and AV with a strong apical seta. Mid tarsi with reduced sensitive cilia. Hind coxa bare on P. Hind femur on AD and AV with a complete row of setae; PV with a complete row of setae, shorter at the apical half; one preapical seta on AD, D, PD and P. Hind tibia (Figs 2-3) on AD with a series of setae at the apical 3/4 portion, with the two longest setae at the submedian and 2/3 limit; on AV a series of 5-8 fine setae at the apical 2/3 portion; on PV a series of 9-10 fine setae at the median 2/4 portion; on PD with a long seta at apical third and a seta at basal third; AD and D with a preapical seta; AV with an apical seta. Hind tarsi as in mid tarsi.

Abdomen: tergite 3 with a series of lateral marginal setae, tergite 4 with one pair of median marginal setae and a series of lateral marginal setae, tergite 5 with a series of discal setae and another of marginal setae. Sternite 1 ciliated. Sternite 5 (Fig. 6) long-ciliated, its posterior margin with a median membranous area.

Terminalia: cercal plate long-ciliated dorsally (Fig. 5); on ventral surface with 3 downward spines in the inferior spined process, the outer spine is the longest, and about 2 irregular rows of spines in the superior spined process (Fig. 4). Aedeagus and associated parts as in Fig. 7.

Measurements: body length, 6.1 – 7.2 mm (n=10); wing length, 6.5 – 7.2 mm (n=10).

Female. The female can be distinguished from the male by the dichoptic eyes, a strong proclinate fronto-orbital seta, presence of a submedian seta on AD of fore tibia, and absence of a series of fine setae on PV of hind tibia.

Differential diagnosis. *Polietina major* resembles *P. steini* (Enderlein, 1927) and *P. orbitalis* (Stein, 1904), however, it can be distinguished from those species by the hind tibia chaetotaxy on the AV: *P. major* has 5 or more setae, while *P. steini* has 3-4, and *P. orbitalis* has 2.

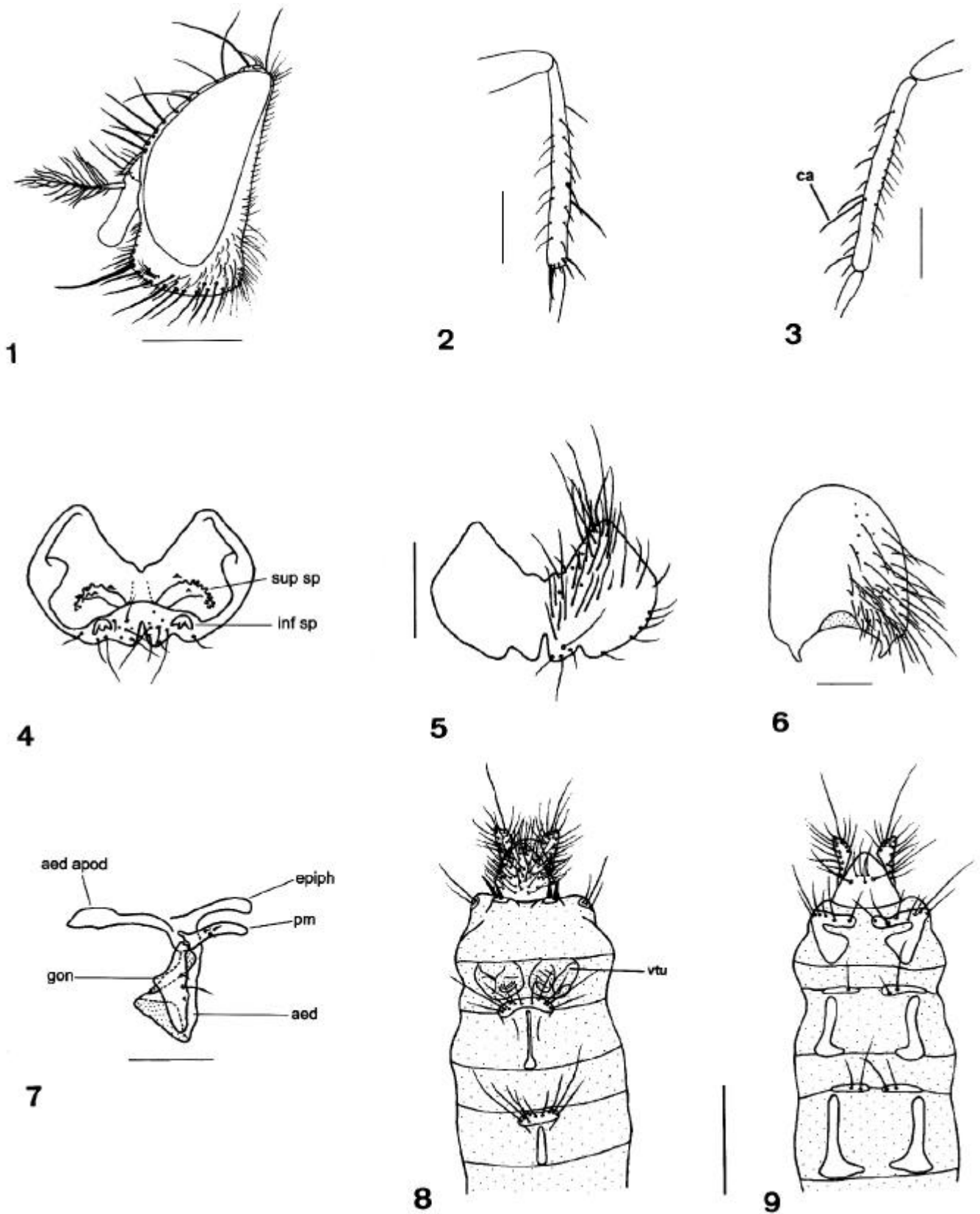
Material examined. BRAZIL. *Espírito Santo*: Itaguaçu, X-1970, P. C. Elias leg. (1 male, MZSP); *Mato Grosso do Sul*: Salobra, VII-1939, Exp. C. Z. B. leg. (1 paratype female, MNRJ); *Rio de Janeiro*: Rio de Janeiro, 23-VII-1935, W. Zicán leg. (1 female, MZSP); *São Paulo*: Boa Esperança do Sul, 02-XII-1963, K. Lenko leg. (1 female, MZSP); PARAGUAY. *Canindeyú*: Reserva Natural Bosque Mbaracayú, 06/07-XII-1991, B. Barrios leg. (2 females, DZUP); *ibidem*, A. C. F. Costa leg., 25/30-III-1996 (1 male, DZUP); *ibidem*, 27-III/03-IV-1996 (7 males, 3 females, DZUP); *ibidem*, 29-III/09-IV-1996 (1 male, DZUP); *ibidem*, 31-III/10-IV-1996 (1 male, DZUP); *ibidem*, 02/10-IV-1996 (3 males, 4 females, DZUP); *ibidem*, 03/09-IV-1996 (6 males, 2 females, DZUP); *ibidem*, 10/16-IV-1996 (2 males, 1 female, DZUP); *ibidem*, 11/17-IV-1996 (2 males, 1 female, DZUP); *ibidem*, 17/23-IV-1996 (3 males, 2 females, DZUP); *ibidem*, 24/30-IV-1996 (4 males, DZUP); *ibidem*, 26-IV/01-V-1996 (2 females, DZUP); *ibidem*, 01/08-V-1996 (1 male, DZUP); *ibidem*, 01/15-V-1996 (10 males, 2 females, DZUP); *ibidem*, 16/23-V-1996 (1 female, DZUP); *ibidem*, 16/23-V-1996 (1 male, 1 female, DZUP); *ibidem*, 24/28-V-1996 (2 males, DZUP); *ibidem*, 29-V/11-VI-1996 (2 male, 2 females, DZUP); *ibidem*, 12/19-VI-1996 (1 male, DZUP); *ibidem*, 06/10-VII-1996 (1 female, DZUP); *ibidem*, 11/18-VII-1996 (1 male, DZUP); *ibidem*, 18/28-VII-1996 (1 female, DZUP); *ibidem*, 19/26-VII-1996 (1 male, DZUP).

Note on type-locality. The holotype of *P. major* deposited at the MNRJ, examined by COURI & CARVALHO (1997), as well as the paratype examined here, have the following informations in their collecting label: "M. Grosso/ Salobra/ Exp. C. Z. B./ vii.39". The locality probably refers to the region around Salobra river, near Miranda city (20°10'S, 56°31'W), State of Mato Grosso do Sul.

Geographic distribution. BRAZIL (Espírito Santo, Mato Grosso do Sul, São Paulo, Rio de Janeiro); PARAGUAY (Canindeyú). This is the first record of *P. major* for the States of Espírito Santo and São Paulo (Brazil) and Paraguay. (See Appendix 1, for geographical data of the known localities.)

***Polietina wulpi* Couri & Carvalho, 1997**  
(Figs. 8-9)

*Polietina wulpi* Couri & Carvalho, 1997: 277-279 (desc. male), 257



**Figs. 1-7.** *Polietina major* Albuquerque, 1956, male. **1**, head, lateral view; **2**, left hind tibia, anterior view; **3**, left hind tibia, posterior view; **4**, cercal plate, ventral view; **5**, cercal plate, dorsal view; **6**, sternite V, dorsal view; **7**, genitalia, lateral view. **Figs. 8-9.** *Polietina wulpi* Couri & Carvalho, 1997, female. **8**, ovipositor, ventral view; **9**, ovipositor, dorsal view (Scale bars: Figs. 1-3: 1 mm; Figs. 4-7: 0.25 mm; Figs. 8-9: 0.5 mm).

(key). fig. 41 (sternite V), fig. 42 (cercal plate, in dorsal view), fig. 43 (cercal plate, in ventral view), fig. 44 (right surstylus, in lateral view), fig. 45 (aedeagus and associated parts, in lateral view).

Female. Antennae light brown, with pedicellum and base of arista yellow. Parafacial gray and silver pollinose, frontal vitta blackish. Proboscis brown; palpi brown, the apical half yellow. Scutum dark brown with silver pollinosity and paired faint stripes dorsally; humeral callus brown to dark brown. Scutellum dark brown with silver pollinosity. Calypters yellowish. Wings hyaline with apex of Sc and R1, and dm-cu crossvein slightly infuscated; r-m crossvein with a brown spot. Legs brown, trochanter and femur-tibia junction lighter. Abdomen dark brown with silver pollinosity, tergites 1 and 2 yellow at base.

Head: eyes ciliated. 8-9 pairs of frontal setae, 1 strong proclinate and 2 reclinate pairs; interfrontal cruciate seta present. Parafacial bare. Genae with a set of short setae upwardly directed and situated above subvibrissal setae. Arista plumose. Palpus slightly spatulated at apex.

Thorax: acr 2:1 (sometimes presutural ones not developed); dc 2:3; 3 humeral setae, the innermost reduced; 1 posthumeral seta and a strong cilia (sometimes not differing from surface cilia); 3 notopleural setae, the median slightly shorter than the posterior one; the anterior postsutural intra-alar seta reduced; 2 sa, the anterior very strong, about twice the second one; 2 psa, the posterior very strong, about twice the anterior one; prealar seta strong, the same size of anterior notopleural seta. Scutellum with a short pair of basal setae; 2 lateral pairs, the anterior one strong; a preapical and a strong apical pairs; lateral of scutellum haired below scutellar setae. Anepimeron with inferior and superior portions ciliated; greater ampulla bare; suprasquamal ridge ciliated on anterior region; anatergite bare; katatergite pubescens; posterior spiracle ciliated on posterior margin; metakatepisternum ciliated above hind coxa; meron ciliated below spiracle.

Wings: base of Radial Sector bare on dorsal surface and with 3 short cilia ventrally (sometimes 2). R1 ciliated dorsally; R4+5 ciliated, dorsal cilia almost reaching apex (the node region more densely ciliated) and ventrally reaching r-m crossvein; node of R4+5 densely ciliated dorsally. M ciliated ventrally between r-m and dm-cu crossveins. Subcostal sclerite with 2 ventral cilia.

Legs: fore femur on PD, PV and D with a complete row of setae. Fore tibia on PV with a submedian seta; on AD with a median seta; on D a preapical seta (sometimes in the same level of apical setae); on AD, PV and PD (weaker) an apical seta. Fore tarsi with developed cilia. Mid femur on PV with a sparse row of setae, shorter at apical half; on AV with a row of setae, longer at basal third; AD with two short preapical setae; D to PD with three preapical seta obliquely aligned. Mid tibia on P with four sparse setae in all extension; PV with a submedian and a apical seta; V and AV with a strong apical seta. Mid tarsi with reduced sensitive cilia. Hind coxa bare on P. Hind femur on AD with a complete row of setae; on AV with a complete row of sparse setae; on PV with a row of setae, longer at basal half; a preapical seta on AD, D, PD and P. Hind tibia on AD

with a series of setae at the apical 3/4 portion, with the two longest at the submedian and 2/3 limit; on AV with two setae at the apical half; on PD with a long seta at apical third and a shorter one at basal third; AD and D with a preapical seta; AV with an apical seta. Hind tarsi as in mid tarsi.

Abdomen: tergite 3 with a series of lateral marginal setae, tergite 4 with one pair of median marginal setae and a series of lateral marginal setae, tergite 5 with a series of discal setae and another of marginal setae. Sternite 1 ciliated.

Terminalia (Figs. 8-9): tergites 6 and 7 enlarged at base and contiguous with the sclerotized plate at the base of marginal setae. Tergite 8 triangular and continuous with the sclerotized plate at the base of marginal setae only in the outer portion, the inner portion very slightly sclerotized. Cerci surpassing the apex of eiproctum, but shorter than in other species of the genus (see Figs. 5, 18, 22, 34 in COURI & CARVALHO 1997 for comparison). Sternites 6 and 7 thin and slightly enlarged at base, particularly the later. Posterior membranous area of sternite 7 with a pair of ventral tuberculus (Fig. 8), which are grooved and flat-rounded-shape membranous structures, with a very weak sclerotization restricted to the grooves and borders [Note: this structure is provisionally called here as "ventral tuberculus" - vtu - however, future studies of ultramicroscopy, histology and physiology are needed to know precisely what is the function and nature of this female structure. It seems that this structure is present in all species of the genus.] Sternite 8 with 2 pairs of short and strong spines, the outer pair stronger than the inner one.

Measurements: body length, 6.2 – 7.2 mm (n=10); wing length, 6.1 – 6.8 mm (n=10).

Male. The male is described and illustrated in COURI & CARVALHO (1997), therefore only some descriptive notes are added: eyes ciliated; gena with a set of upwardly directed setae, above subvibrissal setae; 3 notopleural setae, the median shorter than posterior one; suprasquamal ridge ciliated on anterior region.

Variable characters. Some variation, particularly in colour, was found in the male specimens examined here that differs from holotype's description (COURI & CARVALHO 1997). These are the following: humeral callus brown; postalar callus and scutellum dark brown with silver pollinosity; legs brown, with trochanter and femur-tibia junction lighter, and basal third of foretibia yellow; abdomen dark brown with silver pollinosity, tergites 1 and 2 yellowish at base. Holotype described as having acr 0:1, however, sometimes the presutural pairs may be developed.

Material examined. NICARAGUA. *Granada*: Volcan Mombacho, J.M. Maes leg., 15-I-1998 (1 female, SEAN); *ibidem*, 30-I-1995 (1 female, SEAN); *ibidem*, 31-III-1998 (1 female, DZUP); *ibidem*, 15-IV-1998 (1 male, SEAN); *ibidem*, 30-IX-1998 (7 males, 6 females, DZUP); *ibidem* 15-X-1998 (2 females, DZUP; 1 male, 7 females, SEAN); *ibidem*, 30-X-1998 (2 females, DZUP; 8 males, 13 females, SEAN); *Jinotega*, Peñas Blancas, 25-VII-1998, Maes & Hernández leg. (1 male, DZUP; 2 females, SEAN); *Matagalpa*: Fuente Pura, 09-IX-1994, J.M. Maes leg. (6 females, DZUP); *Zelaya*: Sulum, I-1996, Maes & Hernández leg. (1 female, SEAN).

Geographic distribution. NICARAGUA (Granada, Matagalpa, Jinotega, Zelaya); MEXICO (Guerrero). This is the first record of *P. wulpi* for Nicaragua. (See Appendix 2, for geographical data of the known localities.)

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- Appendix 1.** Localities of *Polietina major*, including latitude and longitude. BRAZIL. *Espírito Santo*: Itaguaçu, 19°48'S, 40°51'W; *Mato Grosso do Sul*: Miranda, 20°10'S, 56°31'W; *São Paulo*: Boa Esperança do Sul, 21°58'S, 48°22'W; *Rio de Janeiro*: Teresópolis, 22°24'S, 42°57'W, Rio de Janeiro, 22°53'S, 43°13'W. PARAGUAY. *Canindeyú*: Reserva Natural Bosque Mbaracayú, 24°00'S, 55°25'W.
- Appendix 2.** Localities of *Polietina wulpi*, including latitude, longitude and altitude. (Abbreviation: m. a. s. l.= meters above sea level). NICARAGUA. *Granada*: Granada, Volcan Mombacho, 11°50'N, 85°58'W, 1000 – 1150 m a. s. l. (“Bosque nuboso”), 1200 m a. s. l. (“Bosque enano”); *Matagalpa*: Matagalpa, Fuente Pura, 13°02'N, 85°56'W, 1520 m a. s. l.; *Jinotega*: Jinotega, Peñas Blancas, 13°17'N, 85°38' W, 1300 m a. s. l.; *Zelaya*: Rio Waspuk, Sulum, 14°15'N, 84°36'W, 50 m a. s. l. MEXICO. *Guerrero*: Xucumanatlan (type-locality), geographical data unavailable.