

Last updated: 10 January 2025

MICROSTIGMUS

Microstigmus Ducke, 1907a:28. Type species: *Microstigmus theridii* Ducke, 1907, by monotypy.

Revision: Richards, 1972.

Review of biology: West Eberhard, 1977; Matthews, 1991.

Trophallaxis in adults: Melo and de Oliveira Campos, 1993.

Karyotype and heterochromatin distribution: M. Costa, Melo, das G. Pompolo, and de Oliveira Campos, 1993.

Abdominal silk glands in adult females: Melo, 1997; Serrão and de Oliveira Campos, 2000; Serrão, 2005.

Role of nest pedicel as a defense against ants: Grajales and Wcislo, 1998.

1. *adelphus* Richards

Microstigmus adelphus Richards, 1972:142, ♀, ♂. Holotype: ♀, Panama: Canal Zone: Barro Colorado Island (BMNH). – Richards, 1972:129 (in key to *Microstigmus*); Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Hanson and Menke, 1995:638 (known from Panama); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

2. *alini* Antropov

Microstigmus alini Antropov, 1992b:53, ♀. Holotype: ♀, Brazil: São Paulo (ZMMU). – Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

3. *arlei* Richards

Microstigmus arlei Richards, 1972:145, ♀, ♂. Holotype: ♂, Brazil: Rio de Janeiro area: Jacarépagua: Represa dos Ciganos (Mus. Nacional Rio de Janeiro). – Richards, 1972:128 (in key to *Microstigmus*); Bohart and Menke, 1976:192 (in checklist of world Sphecidae); M. Costa, Melo, das G. Pompolo, and de Oliveira Campos, 1993:924 (karyotypes and heterochromatin distribution); Marsh and Melo, 1999:16 (nest parasite: *Heterospilus arleiophagus* Marsh and Melo, Braconidae); Serrão and de Oliveira Campos, 2000:480 (abdominal silk glands in adult females); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies); Serrão, 2005:16 (ultrastructure of silk glands); Zama, Moreira, Bão, Campos, Dolder, and Lino-Neto, 2007:306 (testicular and post-testicular spermatozoa).

4. *bicolor* Richards

Microstigmus bicolor Richards, 1971a:643, ♀. Holotype: ♀, Guyana: Kaieteur Falls (BMNH). Paratype: Ecuador. – Richards, 1972:128 (in key to *Microstigmus*), 134 (citation, reference to original description); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

5. *brasiliensis* Melo

Microstigmus brasiliensis Melo, 1992:666, ♀, ♂. Holotype: ♀, Brazil: Minas Gerais: Viçosa (Mus. Zool. Univ. São Paulo). – M. Costa, Melo, das G. Pompolo, and de Oliveira Campos, 1993:924 (karyotypes and heterochromatin distribution); Marsh and Melo, 1999:18 (nest parasite: *Heterospilus brasiliophagus* Marsh and Melo, Braconidae); Serrão and de Oliveira Campos, 2000:480 (abdominal silk glands in adult females); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Serrão, 2005:16 (ultrastructure of silk glands);

Martins, Serrão, and Schmidt, 2005:121 (spermatheca long, coiled, with narrow reservoir); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype and paratypes in Mus. Zool. Univ. São Paulo).

6. *brunniventris* Rohwer

Microstigmus brunniventris Rohwer, 1923c:370, ♀. Holotype: ♀, Paraguay: San Bernardino (USNM). – Richards, 1972:127 (in key to *Microstigmus*, misspelled *brunneiventris*), 133 (in revision of *Microstigmus*, misspelled *brunneiventris*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

7. *comes* Krombein

Microstigmus comes Krombein, 1967a:253, ♀, ♂. Holotype: ♀, Costa Rica: Puntarenas Province: 2.5 mi southwest of Rincón (USNM). – Evans and Matthews, 1968a:132 (description of larva); Matthews, 1968a:787 (social behavior), 1968b:23 (nesting habits); Matthews, 1970:122 (nesting habits); Richards, 1972:129 (in key to *Microstigmus*), 139 (citation of original description, reference to Matthews, 1968); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); G. Wheeler and J. Wheeler, 1979:10 (description of larva), 16 (illustration of larva); Matthews, 1983:156 (nest used by *Trypoxylon latro*); Matthews and Starr, 1984:55 (nest construction); Ross and Matthews, 1989a:613 (new evidence for eusociality), 1989b:574 (population genetic structure); F. Fernández, 1990:24 (Colombia: Meta: Parque Nacional Natural La Macarena); Matthews, 1991:592 (sex ratio, review of nesting habits); Hanson and Menke, 1995:638 (known from Costa Rica); Paige Carithers, 1997:446 (seasonality has no effects on demographics); Marsh and Melo, 1999:19 (nest parasite: *Heterospilus microstigma* Richards, Braconidae); Melo, 2000:94 (review of nesting habits); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

8. *cooperi* Melo and Matthews

Microstigmus cooperi Melo and Matthews, 1997:422, ♀, ♂. Holotype: ♀, Brazil: Amazonas: Fazenda Esteio 60 km north of Manaus at 2°25'S 59°50'W (Mus. Zool. Univ. São Paulo). Paratypes: Colombia. – Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype and paratypes in Mus. Zool. Univ. São Paulo).

9. *crucifex* Melo and Matthews

Microstigmus crucifex Melo and Matthews, 1997:425, ♀, ♂. Holotype: ♀, Colombia: Amazonas: Leticia (BMNH). Paratypes: Brazil, Ecuador. – Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

10. *eberhardi* Richards

Microstigmus eberhardi Richards, 1971a:644, ♀, ♂. Holotype: ♀, Colombia: Valle: above Atuncela (USNM). – Richards, 1972:128 (in key to *Microstigmus*), 135 (description of nest); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae).

11. *flavus* Melo and Matthews

Microstigmus flavus Melo and Matthews, 1997:428, ♀, ♂. Holotype: ♀, Brazil: Minas Gerais: Visçosa (Mus. Zool. Univ. São Paulo). – Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:4 (holotype and paratypes in Mus. Zool. Univ. São Paulo).

12. *guianensis* Rohwer

Microstigmus guianensis Rohwer, 1923c:369, ♀. Holotype: ♀, Guiana: Kartabo (USNM). – Richards, 1972:127 (in key to *Microstigmus*, as *guianae*), 130 (in revision of *Microstigmus*, as *guianae*); R. Bohart and Menke,

1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies, as *guianae*).

Microstigmus nigrifex Richards, 1972:144, ♀, ♂. Holotype: ♀, Guyana: Potaro River at Kaieteur Savannah (BMNH). Synonymized with *Microstigmus guianensis* by Matthews, 1996:121. – Richards, 1972:128 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae).

13. *hingstoni* Richards

Microstigmus hingstoni Richards, 1932:373, ♀. Holotype: ♀, Guyana: Kartabo District: Moraballi Creek (BMNH). – Krombein, 1967a:256 (as new synonym of *Microstigmus guianensis*); Matthews, 1996:121 (valid species); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

14. *krombeini* Matthews

Microstigmus krombeini Matthews, 1996:119, ♀, ♂. Holotype: ♀, Colombia: Valle: Amchicaya (USNM). – Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

15. *lobifex* Richards

Microstigmus lobifex Richards, 1972:141, ♀, ♂. Holotype: ♀, Guiana: Potaro River on edge of Kaieteur Savannah (BMNH). – Richards, 1972:129 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

16. *luederwaldti* Richards

As *Microstigmus theridii*: Krombein, 1967a:253 (specimens in USNM), corrected to *Microstigmus luederwaldti* by Richards, 1972:143.

Microstigmus luederwaldti Richards, 1972:143, ♀, ♂. Holotype: ♀, Brazil: São Paulo (USNM). – Richards, 1972:129 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); M. Costa, Melo, das G. Pompolo, and de Oliveira Campos, 1993:924 (karyotypes and heterochromatin distribution); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

17. *miconiae* Richards

Microstigmus miconiae Richards, 1972:140, ♀. Holotype: ♀, Guyana: Potaro River at edge of Kaieteur Savannah (BMNH). Paratypes: Venezuela. – Richards, 1972:129 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Hanson and Menke, 1995:638 (known from Costa Rica); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

18. *myersi* R. Turner

Microstigmus myersi R. Turner, 1929a:207, ♀. Holotype: ♀, Trinidad: no specific locality (BMNH). – Richards, 1932:373 (in key to females of *Microstigmus*), 376 (known geographic distribution); Myers, 1934:26 (description of nest, nesting site); Richards, 1972:127 (in key to *Microstigmus*), 130 (in revision of *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Callan, 1990b:19 (in checklist of Sphecidae of Trinidad); Melo and de Oliveira Campos, 1993b:183 (trophallaxis between adults, long-haired larva); Marsh and Melo, 1999:19 (nest parasite: *Heterospilus matthewsi* Marsh and Melo, Braconidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:20 (in catalog of Aculeata of Trinidad, West Indies).

19. *nigrophthalmus* Melo

Microstigmus nigrophthalmus Melo, 1992:663, ♀, ♂. Holotype: ♀, Brazil: Minas Gerais: Viçosa (Museu de Zoologia da Universidade de São Paulo, Brazil). – Melo and de Oliveira Campos, 1993a:107 (trophallaxis); Melo, 1997:6 (abdominal silk glands in adult females); Serrão and de Oliveira Campos, 2000:480 (abdominal silk glands in adult females); Melo, 2000:94 (review of nesting habits); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Buys, 2002:677 (description of larva); Serrão, 2005:16 (ultrastructure

of silk glands); Zama, Moreira, Bão, Campos, Dolder, and Lino-Neto, 2007:306 (testicular and post-testicular spermatozoa); Lucas, Horsburgh, Dawson, and Field, 2009:1492 (characterization of microsatellite loci); Lucas, Martins, Zanette, and Field, 2010:107` (social and genetic structures of colonies); Lucas and Field, 2011a:1499 (nest defense by males), 2011b:2992 (experimentally orphaned brood continue to be provisioned by surviving adults for at least two weeks after the orphaning); Lucas, Martins, and Field, 2011:1 (nesting habits, reproductive skew); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:5 (holotype and paratypes in Mus. Zool. Univ. São Paulo).

20. *pallidus* Richards

Microstigmus pallidus Richards, 1972:131, ♀, ♂. Holotype: ♀, Colombia: Cauca: Santander: Finca San Julian (USNM). – Richards, 1972:127 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

21. *puncticeps* Melo and Matthews

Microstigmus puncticeps Melo and Matthews, 1997:431, ♀, ♂. Holotype: ♀, Brazil: Amazonas: Fazenda Esteio 60 km north of Manaus at 2°25'S 59°50'W (Mus. Zool. Univ. São Paulo). Paratype: Peru. – Amarante, 2005a:5 (in addendum to his 2002 catalog of Neotropical Crabronidae and Sphecidae); Rasmussen and Asenjo, 2009:13 (in checklist of Crabronidae of Peru).

22. *similis* Melo

Microstigmus similis Melo in Melo and Evans, 1993:261, ♀. Holotype: ♀, Brazil: Minas Gerais: Viçosa (Mus. Zool. Univ. São Paulo). – Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:5 (holotype and paratype in Mus. Zool. Univ. São Paulo).

23. *simplex* Melo and Matthews

Microstigmus simplex Melo and Matthews, 1997:433, ♀, ♂. Holotype: ♀, Brazil: Amazonas: Fazenda Esteio 60 km north of Manaus at 2°25'S 59°50'W (Mus. Zool. Univ. São Paulo).

24. *soror* Richards

Microstigmus soror Richards, 1972:135, ♀, ♂. Holotype: ♀, Colombia: Valle de Cauca: El Silencio (USNM). – Richards, 1972:128 (in key to *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Amarante, 2002:52 (in catalog of Neotropical Crabronidae).

25. *theridii* Ducke

Microstigmus theridii Ducke, 1907:28, ♀. Lectotype: ♀, Brazil: Tefé (BMNH), designated by Richards, 1972:136. – Ducke, 1908a:46 (Brazil: Faro); R. Turner, 1929:407 (male antenna illustrated); Richards, 1932:373 (in key to females of *Microstigmus*), 376 (known geographic distribution); Myers, 1934:23 (nest structure, preying on Collembola); Richards, 1935b:131 (described braconid parasite *Heterospilus microstigma*); nec Krombein, 1967a:253 (= *Microstigmus luederwaldti*); Richards, 1972:129 (in key to *Microstigmus*), 136 (in revision of *Microstigmus*; Brazil, Guyana, Trinidad); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Nascimento, 1979:13 (syntypes in Mus. Goeldi, Belém); Nascimento and Overal, 1979:9 (in list of Hymenoptera described by A. Ducke), 1980:7 (Brazil); Callan, 1990b:19 (in checklist of Sphecidae of Trinidad); Melo, 2000:94 (use of nest by more than one female); Amarante, 2002:52 (in catalog of Neotropical Crabronidae); Starr and Hook, 2003:21 (in catalog of Aculeata of Trinidad, West Indies).

26. *thripoctenus* Richards

Microstigmus thripoctenus Richards in Matthews, 1970:120, ♀, ♂. Holotype: ♀, Costa Rica: Puntarenas Province: Osa Peninsula: 2.5 mi SW Rincón (USNM). – Richards, 1972:127 (in key to *Microstigmus*), 136 (in revision of *Microstigmus*); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae); Hanson and Menke, 1995:638 (known from Costa Rica); Asís, 2003:49 (nesting habits).

27. *wagneri* du Buysson

Microstigmus wagneri du Buysson, 1907:29, ♀ (as *Wagneri*, incorrect original capitalization). Holotype or syntypes: ♀, Brazil: Organ Mountains near Rio de Janeiro: Tijuca (MNHN). – Richards, 1932:372 (in key to females of *Microstigmus*), 376 (known geographic distribution), 1972:126 (in key to *Microstigmus*), 129 (origin discussed); R. Bohart and Menke, 1976:192 (in checklist of world Sphecidae).

28. *xanthosceles* Melo and Matthews

Microstigmus xanthosceles Melo and Matthews, 1997:434, ♀, ♂. Holotype: ♀, Costa Rica: Guanacaste: Santa Rosa Park (AEI). Paratypes: Colombia, Guatemala, Mexico (Chiapas), Panama. – Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:5 (paratype in Mus. Zool. Univ. São Paulo); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:7 (Mexico: Yucatán).

29. *xylicola* Melo

Microstigmus xylicola Melo in de Melo and Evans, 1993:258, ♀, ♂. Holotype: ♀, Brazil: Minas Gerais: Viçosa (Mus. Zool. Univ. São Paulo). – Menezes de Jesus, Onody, dos Santos Ramos, de Oliveira Andrade, Doria dos Santos, and Ferreira Brandão, 2019:5 (holotype and paratypes in Mus. Zool. Univ. São Paulo)

sp.

Fernández, 1993:16 (Colombia, nest attached to a rock), Grajales and Wcislo, 1988:1141 (sp. near *thripoctenus*: role of nest pedicel as a defense against ants); Vanoye-Eligio, Meléndez-Ramírez, Ayala-Barajas, Delfin-González, and Horta-Vega, 2019:7 (Mexico: Yucatán).