

Insecta, Trichoptera: New records from Brazil and other distributional notes

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ABSTRACT: In the current study we add new records of 29 species of Caddisflies (Trichoptera) from eight different Brazilian states and report *Leptonema sancticaroli* Flint, McAlpine and Ross, 1987, *Flintiella pizotensis* Harris, Flint and Holzenthal, 2002, and *Oecetis connata* Flint, 1974 for the first time in Brazil.

Caddisflies (Trichoptera) include about 13,000 extant species described from all zoogeographic regions. The order is divided into 47 extant families and approximately 600 genera (Holzenthal *et al.* 2007; Morse 2009). There are about 2,200 species described from Neotropical region, which diversity and distribution of Trichoptera are still very incompletely known (Flint *et al.* 1999). A recent inventory of the Brazilian caddisflies fauna reported 378 species for the country (Paprocki *et al.* 2004). Currently, this number increased significantly to more than 420 described species, indicating that the diversity of the order in Brazil is underestimated. Besides that, many species are only known from their type-localities, resulting in fragmentary distributional records. Herein, we report *Leptonema sancticaroli* Flint, McAlpine and Ross, 1987, *Flintiella pizotensis* Harris, Flint and Holzenthal, 2002, and *Oecetis connata* Flint, 1974 for the first time in Brazil and add new records of 29 other species from eight different Brazilian states. The Instituto Brasileiro do Meio Ambiente e dos Recursos Renováveis (IBAMA) issued collecting permits (14591-2, 002/2004-MAB/FAUNA; 001/2005-MAB/FAUNA; 012/2006-MAB/FAUNA, 008/2007-MAB/FAUNA and authorization #19 of process #02005.001723/04-08). The specimens upon which this report is based are currently deposited at Coleção Entomológica Professor José Alfredo Pinheiro Dutra (DZRJ), Departamento de Zoologia, Universidade Federal do Rio de Janeiro, state of Rio de Janeiro, and Instituto Nacional de Pesquisas da Amazônia (INPA), state of Amazonas, both in Brazil.

Codes for Brazilian states are as follow: Amazonas (AM), Bahia (BA), Distrito Federal (DF), Espírito Santo (ES), Goiás (GO), Mato Grosso (MT), Mato Grosso do Sul (MS), Minas Gerais (MG), Pará (PA), Paraná (PR), Rio de Janeiro (RJ), Rondônia (RO), Santa Catarina (SC), and São Paulo (SP).

For each record the following data are registered: Brazilian state, municipality, locality, water body information, latitude, longitude and elevation above sea

level. The last three data were obtained with a Garmin eTrex® GPS.

For each species, in the distributional information, both new and known records are presented. The later is based on Flint *et al.* (1999), Paprocki *et al.* (2004) and Blahnik *et al.* (2004).

CALAMOCERATIDAE

Phylloicus bidigitatus Prather, 2003

Minas Gerais: Itamonte, 1st order stream, 22°19'41.3" S, 44°40'19.5" W, 2,043 m; 1st order tributary of Rio Aiuruoca, 22°19'45.0" S, 44°40'41.7" W, 1,947 m (DZRJ).

São Paulo: Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Canoá, 23°20'33.4" S, 44°50'59.0" W, 93 m (DZRJ).

Distribution: Brazil (MG, RJ, SP).

ECNOMIDAE

Austrotinodes ariasi Flint and Denning, 1989

Pará: Canaã dos Carajás, Lago do Violão, 06°23'57,0" S, 50°21'01,8" W, 744 m (DZRJ).

Distribution: Brazil (AM, PA).

Austrotinodes prolixus Flint and Denning, 1989

São Paulo: Queluz, Rio do Salto, 22°26'31.5" S, 44°43'53.3" W, 789 m (DZRJ).

Distribution: Brazil (MG, SP).

HYDROBIOSIDAE

Atopsyche (Atopsaura) hatunpuna Schmid, 1989

Minas Gerais: Itamonte, 1st order tributary to Rio Aiuruoca, 22°21'41.0" S, 44°42'26.5" W, 2237 m; 1st order stream, 22°19'33.8" S, 44°40'05.3" W, 2,060 m (DZRJ).

Distribution: Brazil (MG, SP).

Atopsyche (Atopsaura) zernyi Flint, 1974

Espírito Santo: Santa Teresa, Estação Biológica Santa Lúcia, 19°59'12.04" S, 40°26'32.83" W, 111 m (DZRJ).

Distribution: Brazil (MG, ES, RJ, SC, SP).

HYDROPSYCHIDAE

Leptonema sancticaroli Flint, McAlpine and Ross, 1987

Amazonas: Manaus, tributary to Rio Cuieiras, 02°42'25" S,

60°22'28.2" W, 11 m; tributary to Rio Branquinho, 02°29'35.1" S, 60°20'03.1" W, 56 m (DZRJ, INPA).

Distribution: Brazil (AM) and Venezuela.

Leptonema spinulum Flint, McAlpine and Ross, 1987

Amazonas: Manaus, tributary to Rio Cuieiras, 02°42'25.1" S, 60°22'28.2" W, 11 m (INPA); Igarapé do Lobisomem, Rio Cuieiras basin, 02°33'46.4" S 60°19'03.4" W, 34 m (DZRJ).

Pará: Parauapebas, 1st order stream, 06°04'13.4" S, 49°56'59.6" W, 225 m (DZRJ).

Distribution: Argentina, Brazil (AM, DF, MT, PA), Guyana, Peru, and Venezuela.

Leptonema viridianum Navás, 1916

Pará: Parauapebas, 1st order stream, 06°04'13.4" S, 49°56'59.6" W, 225 m (DZRJ).

Distribution: Argentina, Bolivia, Brazil (MG, DF, GO, PA, RJ), Colombia, Ecuador, Guyana, Paraguay, Peru, and Venezuela.

Macronema bicolor Ulmer, 1905

São Paulo: Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Canoa, 23°20'33.40" S, 44°50'59.01" W, 93 m (DZRJ).

Distribution: Brazil (MG, SC, SP).

Smicridea (Rhyacophylax) froehlichii Almeida and Flint, 2002

Minas Gerais: Bocaina de Minas, Córrego do Morro Cavado, 22°18'47.2" S, 44°36'48.8" W, 1,240 m (DZRJ).

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S, 44°41'06.6" W, 1,860 m (DZRJ); waterfall on km 461 of BR 354, 22°21'48.0" S, 44°46'29.0" W, 1,555 m (DZRJ).

Distribution: Brazil (MG, RJ, SP).

Smicridea (Rhyacophylax) jundiai Almeida and Flint, 2002

São Paulo: Queluz, Rio do Salto, 22°26'31.5" S, 44°43'53.3" W, 789 m (DZRJ).

Distribution: Brazil (ES, MG, PR, RJ, SP).

Smicridea (Rhyacophylax) pseudolobata Flint, 1978

Pará: Parauapebas, 1st order stream, 06°04'13.4" S, 49°56'59.6" W, 225 m (DZRJ).

Distribution: Brazil (AM, PA) and Surinam.

HYDROPTILIDAE

Abtrichia antennata Mosely, 1939

Rio de Janeiro: Macaé, Trapiche, 1st order stream of Rio São Pedro basin, 22°13'45.7" S, 42°02'38.6" W (DZRJ).

Distribution: Argentina, Brazil (MG, RJ, SC), and Uruguay.

Flintiella pizotensis Harris, Flint and Holzenthal, 2002

Amazonas: municipality of Rio Preto da Eva, Igarapé Jangada, tributary to Rio Urubu, 02°26'32.5" S 59°32'46.2" W, 29 m (INPA).

Distribution: Brazil (AM), Costa Rica, Colombia, Ecuador, Mexico, Nicaragua, and Panama.

LEPTOCERIDAE

Notalina (Neonotalina) hamiltoni Holzenthal, 1986

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S 44°41'06.6" W, 1,860 m (DZRJ).

Distribution: Brazil (MG, SP).

Oecetis connata Flint, 1974

Amazonas: Manaus, tributary to Rio Cuieiras, 02°04'13.9" S, 60°23'01.4" W, 124 m (INPA); tributary to Igarapé da Cachoeira, Rio Cuieiras basin, 02°41'46.0" S, 60°17'42.7" W, 26 m; Igarapé Piranga, Rio Cuieiras basin, 02°38'20.7" S, 60°16'48.8" W, 35 m (INPA); Igarapé Arumã, Rio Cuieiras basin, 02°30'55.2" S, 60°15'44.4" W, 46 m; tributary to Rio Branquinho, 02°29'35.1" S, 60°20'03.1" W, 43 m (INPA).

Amazonas: Presidente Figueiredo, tributary to Rio Urubu, 02°06'55.6" S, 59°59'20.7" W, 48 m (INPA).

Amazonas: municipality of Rio Preto da Eva, tributary to Rio Preto da Eva, 02°32'09.4" S 59°49'59.3" W, 68 m (INPA); Igarapé Jangada, tributary to Rio Urubu, 02°26'32.5" S 59°32'46.2" W, 29 m (DZRJ).

Pará: Parauapebas, Igarapé Águas Claras, 06°10'04.1" S, 50°21'00.6" W, 396 m (DZRJ); Igarapé Gelado, 05°57'56.6" S, 50°13'00.0" W, 235 m (DZRJ).

Distribution: Brazil (AM, PA), Guyana, and Surinam.

Triplectides misionensis Holzenthal, 1988

Minas Gerais: Itamonte, 1st order stream, 22°19'45.0" S, 44°40'41.7" W, 1,947 m (DZRJ); waterfall on Km 61 of BR 354, 22°21'48.0" S, 44°46'29.0" W, 1,555 m (DZRJ).

Distribution: Argentina and Brazil (MG, PR, RJ, SP, SC).

Triplectides neotropicus Holzenthal, 1988

São Paulo: Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Canoa, 23°20'33.4" S, 44°50'59.0" W, 93 m (DZRJ).

Distribution: Brazil (MG, SP).

Triplectides ultimus Holzenthal, 1988

Minas Gerais: Bocaina de Minas, Córrego do Morro Cavado, 22°18'47.2" S, 44°36'48.8" W, 1,240 m (DZRJ).

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S, 44°41'06.6" W, 1,860 m (DZRJ); 1st order stream of Rio Aiuruoca basin, 22°19'38.6" S 44°40'37.9" W, 1,898 m (DZRJ); 1st order stream, 22°19'41.3" S, 44°40'19.5" W, 2,043 m (DZRJ).

Distribution: Brazil (MG, RJ).

PHILOPOTAMIDAE

Alterosa beckeri Blahnik, 2005

Minas Gerais: Itamonte, 1st order stream of Rio Aiuruoca basin, 22°19'38.6" S, 44°40'37.9" W, 1,898 m (DZRJ).

Distribution: Brazil (MG, RJ).

Chimarra (Chimarra) uara Flint, 1971

Pará: Parauapebas, 1st order stream, 06°04'13.4" S, 49°56'59.6" W, 225 m (DZRJ).

Distribution: Brazil (DF, MG, PA, RO, SC), Guyana, Surinam, and Venezuela.

Chimarra (Curgia) beckeri Flint, 1998

Minas Gerais: Itamonte, 1st order stream of Rio Aiuruoca basin, 22°19'38.6" S, 44°40'37.9" W, 1,898 m (DZRJ).

São Paulo: São José do Barreiro, Parque Nacional da Serra da Bocaina, tributary to Rio Mambucaba, 22°44'10.4" S, 42°36'58.3" W, 1,494 m (DZRJ).

São Paulo: Ubatuba, Parque Estadual da Serra do Mar, Núcleo Picinguaba, Rio da Canoa, 23°20'33.4" S, 44°50'59.0" W, 93 m (DZRJ).

Distribution: Brazil (MG, RJ, SP).

Chimarra (Curgia) cultellata Flint, 1983

Pará: Parauapebas, 1st order stream, 06°04'13.4" S, 49°56'59.6" W, 225 m (INPA).

Distribution: Argentina, Brazil (DF, MG, PA, RO, SC), and Venezuela.

Chimarra (Otarra) odonta Blahnik, 2002

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S, 44°41'37.9" W, 1,860 m (DZRJ).

Distribution: Brazil (MG, RJ, SP).

POLYCENTROPODIDAE

Cyrnellus arotron Flint, 1971

Mato Grosso do Sul: Ladário, lake near Porto Vitória Régia Hotel, 19°01'10.0" S 57°33'02.1" W, 89 m (DZRJ).

Distribution: Argentina, Brazil (AM, MS, PA), and Uruguay.

Cyrnellus bifidus Flint, 1971

Mato Grosso do Sul: Ladário, lake near Porto Vitória Régia Hotel, 19°01'10.0" S, 57°33'02.1" W, 89 m (DZRJ); Rio Paraguai, 19°01'04.3" S, 57°33'05.7" W, 86 m (DZRJ).

Distribution: Argentina and Brazil (AM, MS).

Cyrnellus fraternus (Banks, 1905)

Bahia: Caetité, Indústrias Nucleares do Brasil, 13°53'09.8" S, 42°17'32.0" W, 993 m (DZRJ).

Espírito Santo: Sooretama, Bioparque Bionativa, 19°11'20.2" S, 40°06'54.3" W, 60 m (DZRJ); Fazenda Pasto Novo, 19°05'04.2" S, 40°10'39.8" W, 102 m (DZRJ); Reserva Biológica de Sooretama, Córrego Rodrigues, 19°00'46.9" S, 40°07'28.0" W, 90 m (DZRJ).

Mato Grosso do Sul: Ladário, lake near Porto Vitória Régia Hotel, 19°01'10.0" S, 57°33'02.1" W, 89 m (DZRJ); Rio Paraguai, 19°01'04.3" S, 57°33'05.7" W, 86 m (DZRJ).

Distribution: Argentina, Brazil (AM, BA, ES, MG, MS, PA, PR, SC), Costa Rica, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Paraguay, Surinam, Uruguay, United States, and Venezuela.

Cyrnellus mammillatus Flint, 1971

Mato Grosso do Sul: Ladário, lake near Porto Vitória Régia Hotel, 19°01'10.0" S, 57°33'02.1" W, 89 m (DZRJ); Rio Paraguai, 19°01'04.3" S, 57°33'05.7" W, 86 m (DZRJ).

Rio de Janeiro: Macaé, Rio São Pedro, 22°16' 37.7" S, 41°52'22.8" W (DZRJ).

Distribution: Argentina, Brazil (AM, MG, MS, PR, RJ, SP), Ecuador, Paraguay, Peru, and Uruguay.

Nyctiophylax neotropicalis Flint, 1971

Pará: Parauapebas, 1st order stream, 06°06'14.2" S, 50°08'13.0" W, 569 m (DZRJ).

Distribution: Argentina, Brazil (AM, MG, PA, PR, RJ), Colombia, Surinam, and Uruguay.

Polycentropus urubici Holzenthal and Almeida, 2003

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S, 44°41'37.9" W, 1,860 m (DZRJ).

Distribution: Brazil (MG, PR, SC).

Polyplectropus profaupar Holzenthal and Almeida, 2003

Minas Gerais: Bocaina de Minas, Córrego do Morro Cavado, 22°18'47.2" S, 44°36'48.8" W, 1,240 m (DZRJ).

Distribution: Brazil (MG, PR, SC).

XIPHOCENTRONIDAE

Xiphocentron (Antillotrichia) steffeni (Marlier, 1964)

Minas Gerais: Itamonte, Rio Aiuruoca, 22°20'56.9" S, 44°37'05.8" W, 1860 m (DZRJ).

Distribution: Brazil (MG, RJ, SP).

Distributional Notes

Phylloicus brevior Banks, 1915 and *P. fenestratus* Flint, 1974 were recorded from 'Altamira (03°39'00" S, 52°22'00" W), state of Paraná, southern Brazil', by Prather (2003) in her revision of the Neotropical genus *Phylloicus* Müller, 1880. Nevertheless, Altamira (03°39'00" S 52°22'00" W) is a municipality in state of Pará, northern Brazil. This misunderstanding was followed by Paprocki et al. (2004) in the Brazilian Trichoptera checklist. Likewise, *Blepharopus diaphanus* Kolenati, 1859 was recorded in Pará, Amazonas and Acre states, all in northern Brazil, by Flint (1978) and these records were not included in the previously mentioned inventory.

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