

Faunistic Catalog of the Caddisflies (Insecta: Trichoptera) of Parque Nacional do Itatiaia and its Surroundings in Southeastern Brazil

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Faunistic catalog of the caddisflies (Insecta: Trichoptera) of Parque Nacional do Itatiaia and its surroundings in southeastern Brazil

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Abstract

The Atlantic Forest is considered one of the world's biological diversity hotspots, and is increasingly threatened by the rapid destruction and fragmentation of its natural areas. The caddisflies (Trichoptera) of Itatiaia massif, an Atlantic Forest highland area, are inventoried and cataloged here. The catalog is based on examination of bibliographies, field work on many localities of Itatiaia massif (including Parque Nacional do Itatiaia – PNI), and the entomological collection Professor José Alfredo Pinheiro Dutra (DZRJ), Universidade Federal do Rio de Janeiro. A total of 92 species are recorded, representing about 17% of the known Brazilian Trichoptera fauna. Leptoceridae, Hydropsychidae, and Philopotamidae are the families most represented. The high species richness, as well as the remarkable patterns of species distribution, may be related to the characteristics of Mantiqueira mountain range.

Keywords: *Antarctoeia*, Atlantic Forest, biogeography, *Neotriplectides*, Neotropics

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Introduction

Caddisflies (Trichoptera) comprise more than 13,500 extant species described from all faunal regions, arranged in about 610 genera and 47 families (Morse 2011). However, Schmid (1984) claimed that world fauna may contain approximately 50,000 species, which leads to the conclusion that only about 25% of world species of caddisflies have been described. Even limited to the diversity currently known, Trichoptera constitutes the 7th-largest insect order and the most diverse among orders of primary aquatic insects (Paprocki et al. 2004; Holzenthal et al. 2007).

The Neotropical Region is divided into two distinct faunal subregions: the Chilean subregion (southern Chile and adjacent Argentina) and the Brazilian subregion (southern Mexico, Central America, Antilles, and remnant South America) (Flint 1976). de Moor and Ivanov (2008) proposed an alternative biogeographic pattern for Trichoptera distribution, considering 12 biogeographical regions. According to them, the Neotropical region *sensu* Wallace (1876) is divided into Patagonian and Neotropical regions, corresponding respectively to the Chilean and Brazilian subregions, as determined by Flint (1976). Chilean fauna is highly endemic and closely related to the fauna of the Australian region. Furthermore, the northern Andes, the Amazon basin, and the mountains of southern and southeastern Brazil can be considered areas with great concentrations of endemic species and with high numbers of non-endemic species (Flint et al. 1999).

There are about 2,200 species described from the Neotropical region, where diversity and distribution of Trichoptera are little-known

(Flint et al. 1999). In Brazil, a recent inventory of the fauna reported 378 species for the country (Paprocki et al. 2004). Currently, this number has increased significantly to approximately 550 species, distributed in 70 genera and 16 families (Santos et al. 2011), indicating that the diversity of the order in Brazil is underestimated. In such case, there are many new species remaining to be discovered and described (Blahnik et al. 2004). There are over 300 new species deposited in Brazilian and in foreign entomological collections waiting to be described (Calor 2009). Besides that, many species are only known from their type-localities (Dumas et al. 2010).

The order Trichoptera is divided into three suborders: Annulipalpia (net-spinning or fixed-retreat makers), Integripalpia (portable-case makers), and Spicipalpia (Hydrobiosidae and Rhyacophylidae (free-living), Glossosomatidae (saddle-case makers), and Hydroptilidae (purse-case makers)) (Holzenthal et al. 2007). However, Spicipalpia is not monophyletic in either morphological or molecular phylogenetic analyses (Morse 1997; Kjer et al. 2001, 2002). Some phylogenetic works recognize to a fourth suborder called Protomeropina, composed of fossil families from the Permian. This suborder is sometimes considered part of the ancestral Amphiesmenoptera lineage (de Moor and Ivanov 2008; Calor 2009).

Immature caddisflies stages are exclusively aquatic, being important in aquatic assemblages. Larvae are important components of energy flow and nutrient dynamics in freshwater environments (Resh and Rosenberg 1984). Trichoptera larvae are capable of spinning silk from modified salivary glands. Silk is used in many ways by

caddis larvae to construct portable cases, fixed retreats, shelters, and capture nets, and probably is an asset in their ecological and taxonomic diversification (Wiggins 1996). Immature caddisflies can be found in all types of freshwater environments, being especially diverse in running waters like rivers and streams. Furthermore, larvae of Trichoptera have distinct responses to pollution and other environmental impacts. For this reason, caddisflies are widely used in water quality monitoring programs (Morse 1997; Paprocki et al. 2004). Adult caddisflies resemble small moths, generally drab in color, and are found in riparian and shoreline vegetation (Angrisano 1995a; Holzenthal et al. 2007). In contrast to larvae, ecology and behavior of adult Trichoptera are poorly known (Flint et al. 1999).

The Brazilian Atlantic Forest is among the five most important biodiversity hotspots in the world. Less than 8% of the original forest now remains, and it occurs mostly in isolated topographically remnants scattered throughout a landscape dominated by agricultural uses and urbanization. Despite these disturbances, the Atlantic Forest is still extremely rich in biodiversity, sheltering a significant proportion of the Brazilian fauna and flora with high levels of endemism (Joly and Bicudo 1998; Myers et al. 2000). The Itatiaia massif, on which the Parque Nacional do Itatiaia (PNI) exists, is among one of the most important protected areas of Atlantic Forest due to different forest formations with well-defined climatic and vegetation bands (Ururahy et al. 1983). Trichoptera species recorded from the Itatiaia massif were derived from isolated species descriptions and general checklists for southeastern Brazil. However, a comprehensive checklist was not available for the Itatiaia massif, highlighting the gaps in our knowledge of this group in the area.

Furthermore, collection events were concentrated in the lower portion of PNI. Therefore, herein we present a catalog aiming to update the list of caddisfly species found in the Itatiaia massif. This catalog is based on recently collected specimens, specimens previously deposited in the Coleção Entomológica Prof. José Alfredo Pinheiro Dutra, UFRJ, Brazil (DZRJ), and literature data until 2011, providing a taxonomic overview of the Trichoptera species known to occur in the Itatiaia massif. New Brazilian state records and distribution data are also given here.

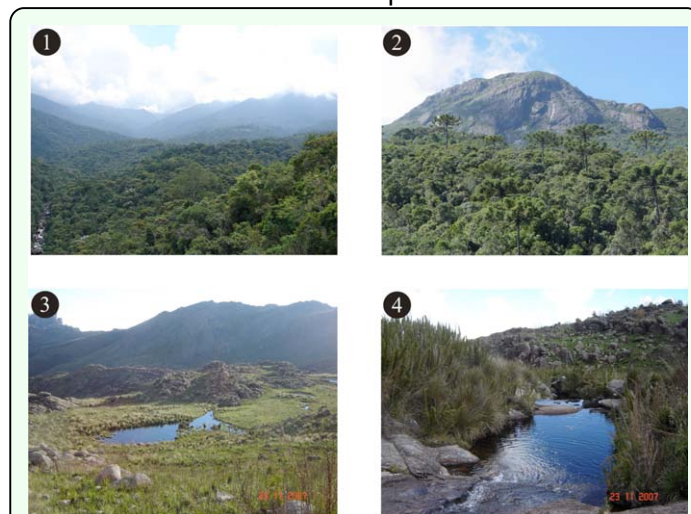
Materials and Methods

Study area

The Itatiaia massif is situated in Mantiqueira mountain range, an extensive area of highlands in southeastern Brazil. The massif is located on the border of three Brazilian states: Minas Gerais (Alagoa, Bocaina de Minas and Itamonte municipalities), Rio de Janeiro (Itatiaia and Resende municipalities), and São Paulo (a small portion of Queluz municipality).

The highlands of Itatiaia massif are a Pre-Cambrian outcrop of metamorphic nepheline-syenite rocks (IBDF 1982). One of the most important Brazilian geological areas, the massif possesses the seventh-highest mountain of the country - the Itatiaiaçu - which stands at 2,787 m, located in Agulhas Negras complex. Other important peaks, such as Pedra do Couto (2,682 MASL) and Prateleiras (2,515 MASL) also belong to the massif (Magro 1999).

Itatiaia massif has four vegetation types that follow an altitudinal gradient: lower montane forest (from 400 to 499 MASL) montane forest (from 500 to 1,499 MASL) (Figure 1),



Figures 1-4. (1) Montane forest at lower portion of PNI; (2) Upper montane forest, with some *Araucaria* trees; (3) Grassland at Itatiaia plateau, PNI; (4) High-altitude grassland near Agulhas Negras peak, PNI. High quality figures are available online.

upper montane forest (from 1,500 to 1,999 MASL) (Figure 2), and high-altitude grasslands (more than 2,000 MASL) (Figures 3 and 4) (Ururahy et al. 1983). According to The Conservation International of Brazil (2000), this region is characterized as a nucleus of the Atlantic Forest Biosphere Reserve, one of the biggest conservation units in the world.

The climate is mesothermic, markedly seasonal, with cold and dry winters and very wet summers (Cwa according Köppen's classification). Mean annual temperature is about 14 °C, with lower temperatures falling below -10 °C during the rigorous winter. Annual rainfall is about 2,400 mm, concentrated in the summer months (Ribeiro et al. 2007). At the end of April and beginning of October the rainfalls become uncommon, which causes a relatively dry winter (Barros 2003).

Itatiaia massif is inserted between the Rio Picu gorge (MG) and Mauá (RJ), having Paraíba do Sul drainage basin on the south (Rio de Janeiro State) and Rio Grande drainage basin on the north (Minas Gerais

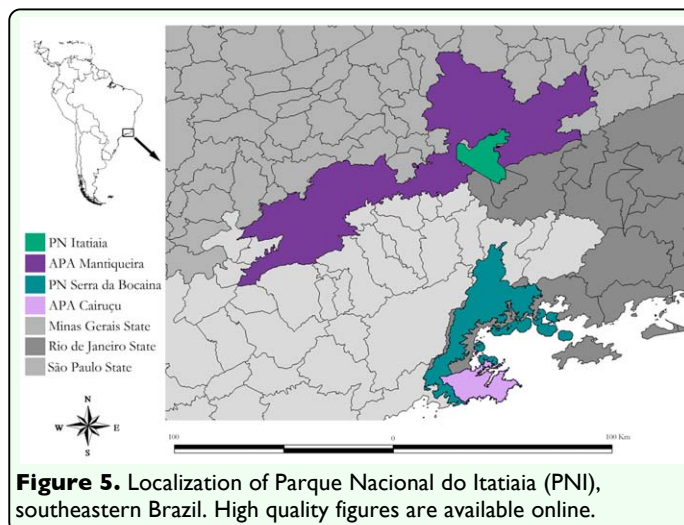


Figure 5. Localization of Parque Nacional do Itatiaia (PNI), southeastern Brazil. High quality figures are available online.

State). The three main rivers of massif which contribute to the Rio Paraíba do Sul basin are: Rio Preto, that drains the northeastern area; Rio Campo Belo, that flows at southeastern portion; and Rio do Salto, located at southwestern section. Rio Capivari (tributary of Rio Verde) and Rio Aiuruoca (tributary of Rio Turvo) are the main rivers that form Rio Grande basin, on northwestern portion of the massif (IBDF 1982). Rivers and streams of Itatiaia massif have regular discharges during the winter, receiving a large amount of water during the summer period. The rivers usually have a tumbling flow, forming rapids along sloping rocky beds, mainly at the south portion (turned to Paraíba do Sul valley), where the topography is more pronounced (Magro 1999). At the high area of the massif, there are highland lakes formed by flowing water of marshes. These may become frozen during the winter (IBAMA 1994).

PNI is located on the border between Rio de Janeiro and Minas Gerais states, between 22° 19' - 22° 45' S and 44° 15' - 44° 50' W. The protected area was established in 1937 and is the oldest national park in Brazil. Currently, PNI comprises an area of 30,000 ha, covering 20% of Itatiaia massif (Barros 2003). The park is surrounded by Área de Proteção Ambiental da Mantiqueira (APA da



Figures 6-11. Rivers and streams of Itatiaia massif. (6) Rio Aiuruoca; (7) Rio Campo Belo dam at higher portion of PNI; (8) Rio Campo Belo; (9) Rio Preto, Escorrega do Maromba; (10) Rio das Pedras, Cachoeira de Deus; (11) Rio do Salto. High quality figures are available online.

Mantiqueira) which provides an ecological buffer zone for the park (Figure 5).

Sampling

The catalog of species is based mainly on specimens collected from many localities of the Itatiaia massif between 1990 and 2009. Additional records from previous published articles are also provided here. Sampled area was divided into five major drainage sub-basins (Figures 6-11): (1) Rio Aiuruoca sub-basin (Figure 6), (2) Rio Campo Belo sub-basin (Figures 7 and 8), (3) Rio Preto sub-basin (Figure 9), (4) Rio das Pedras sub-basin (Figure 10), and (5) Rio do Salto sub-basin (Figure 11). In addition, the specimens deposited at Coleção Entomológica Professor José Alfredo Pinheiro Dutra (DZRJ) of the Universidade Federal do Rio de Janeiro were examined. Taxonomic bibliography that



Figures 12-13. Some caddisflies specimens of Itatiaia massif. (12) Hydropsychidae; (13) *Centromacronema auripenne* (Rambur) (Hydropsychidae). Picture 12 – Marcela Laura Monné. High quality figures are available online.

includes data of Itatiaia massif is also included here to complement this inventory.

Larvae and pupae were collected with Surber and Brundin nets (125 μm and 180 μm mesh), sieves, and manually in several kinds of substrate, in rapids, and pools of rivers and streams. The specimens were preserved in 80% ethanol. Adults were collected with light traps (white sheet and Pennsylvania light trap), which were placed near streams and lightened at dusk, remaining switched on during the night. At daytime the adults were collected in activity with entomological nets and aspirators. The specimens were also



Figures 14-15. Some caddisflies specimens of Itatiaia massif. (14) *Macrostemum* sp. (Hydropsychidae); (15) *Chimarra* sp., mating (Philopotamidae). Pictures 14 and 15 – Daniela Maeda Takiya. High quality figures are available online.

preserved in 80% ethanol and few ones were pinned.

Immature stages were identified to generical level based on keys by Angrisano (1995a), Wiggins (1996), and Pes et al. (2005). Some larvae were identified to species level according to descriptions given for manuscripts of immature association (Holzenthal 1997; Huamantínco and Nessimian 2004a; Huamantínco et al. 2005; Dumas and Nessimian 2006; Calor and Froehlich 2008; Nessimian and Dumas 2010). Adult identification was based on the morphology of male genitalia. In order to observe the genital structures, the abdomen was removed and cleared in a heated solution of 10% KOH (Beten 1934). The specimens are deposited in Coleção Entomológica



Figures 16-17. Some caddisflies specimens of Itatiaia massif. (16) *Byrsoteryx abrelata* Harris and Holzenthal (Hydroptilidae); (17) *Triplectides ultimus* Holzenthal (Leptoceridae). Picture 16 – Daniela Maeda Takiya. High quality figures are available online.

Professor José Alfredo Pinheiro Dutra (DZRJ), Departamento de Zoologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro State.

Results

An amount of 92 species of caddisflies belonging to 35 genera were recorded from Itatiaia massif (Figures 12-17). Six additional genera were collected solely as larvae: *Alisotrichia* Flint, 1964, *Metrichia* Ross, 1938, *Ochrotrichia* Mosely, 1934 (Hydroptilidae), *Oecetis* McLachlan, 1877 (Leptoceridae), *Cyrnellus* Banks, 1913 (Polycentropodidae), and *Grumicha* Müller, 1879 (Sericostomatidae). Only six species

previously recorded from Itatiaia massif were not collected in field works: *Itauara julia* Robertson and Holzenthal, 2011, *Mortoniella crescentis* Blahnik and Holzenthal, 2011, *Mortoniella latispina* Blahnik and Holzenthal, 2011 (Glossosomatidae), *Macronema partitum* Navás, 1932 (Hydropsychidae), *Austrotinodes taquaralis* Thomson and Holzenthal, 2010 (Ecnomidae), and *Polycentropus inusitatus* Hamilton and Holzenthal, 2011 (Polycentropodidae). These species were included here based on bibliography. Four species are recorded here based only on UMSP insect collection: *Atopsyche acahuana* Schmid, 1989 (Hydrobiosidae), *Smicridea iguazu* Flint, 1983 *S. radula* Flint, 1974 (Hydropsychidae), and *Nectopsyche pantosticta* Flint, 1983 (Leptoceridae). New records from the states of Minas Gerais, Rio de Janeiro, and São Paulo were previously given in Dumas et al. (2009, 2010). *Polycentropus rosalyae* Hamilton and Holzenthal, 2011 is recorded for the first time from states of Minas Gerais and Rio de Janeiro. *Polyplectropus annulicornis* Ulmer, 1905 and *P. hystricosus* Chamorro-Lacayo and Holzenthal, 2010 are recorded for the first time from state of Rio de Janeiro. Dumas et al. (2009) erroneously recorded *P. profauper* Holzenthal and Almeida, 2003 for Itatiaia massif, state of Rio de Janeiro. Actually, the new record refers to *P. annulicornis*, as cited here.

Trichoptera families with greatest diversity in the study area are Leptoceridae (17 species), Hydropsychidae (16 species), and Philopotamidae (13 species). However, Leptoceridae and Hydropsychidae are represented by five genera each, whereas Philopotamidae is represented by only two genera. The least diverse families were Anomalopsychidae, Atriplectididae, Helicopsychidae, Limnephilidae, and

Xiphocentronidae, which were represented by a single species each.

A catalog of species from Itatiaia massif with their distribution in the study area is provided below. The catalog is organized alphabetically by family, genus, and species. Each species name is followed by its author, date, and bibliographic citation of publication and page number on which the name was formally established. Information on type locality, holotype depository, and sex of the type are given in square brackets. Citations for any significant publication - redescrptions, description of immature stages, lectotype and neotype designations, checklist, and new distribution records - are also given. Synonyms are listed below the valid species name. Sampling sites where the species were collected in Itatiaia massif are given according to the codes presented in Tables 1-5. Occurrence of each species within Brazil is given in brackets on distribution section. Codes for Brazilian states are as follow: Amazonas (AM), Bahia (BA), Distrito Federal (DF), Espírito Santo (ES), Goiás (GO), Minas Gerais (MG), Pará (PA), Paraná (PR), Rio de Janeiro (RJ), Rio Grande do Sul (RS), Santa Catarina (SC), and São Paulo (SP).

Acronyms of Holotype Depositories

BMNH – The Natural History Museum, London, England, United Kingdom. **CASC** – California Academy of Sciences, San Francisco, California, USA. **DEIC** – Deutsches Entomologisches Institut, Müncheberg, Germany. **DZRJ** – Coleção Entomológica Prof. José Alfredo Pinheiro Dutra, Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil. **DZUP** – Coleção Entomológica Padre Jesus Santiago Moure, Departamento de Zoologia, Universidade Federal do Paraná, Paraná, Brazil. **ISNB** – Institut Royal des

Sciences Naturelles de Belgique, Brussels, Belgium. **ISMA** – Instituto San Miguel, Buenos Aires, Argentina. **MACN** – Museo Argentina de Ciencias Naturales, Buenos Aires, Argentina. **MCZN** – Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA. **MZBS** – Museo de Zoología, Barcelona, Spain. **MZSP** – Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil. **NHMW** – Naturhistorisches Museum Wien, Wien, Austria. **MLUH** – Martin-Luther-Universität, Wissenschaftsbereich Zoologie, Halle an der Salle, Germany. **MZPW** – Polish Academy of Science, Museum of the Institute of Zoology, Warsaw, Poland. **UMSP** – University of Minnesota insect collection, Minnesota, USA. **USNM** – National Museum of Natural History, Washington, DC, USA. **ZMUH** – Universität von Hamburg, Zoologisches Institut und Zoologisches Museum, Hamburg, Germany. **ZSMC** – Zoologischen Staatssammlung München, Munich, Germany.

ANOMALOPSYCHIDAE

1. *Contulma tijuca* Holzenthal and Flint, 1995

Contulma tijuca: Holzenthal and Flint 1995: 22 [Type locality: Brazil, Rio de Janeiro, Parque Nacional da Tijuca, Represa dos Ciganos; holotype depository: MZSP; male; female; probable larva] – Paprocki, Holzenthal and Blahnik 2004: 5 [checklist] – Dumas et al. 2009: 371 [checklist].

Sites in Itatiaia massif: CB 07, and PE 01.

Distribution: Brazil (RJ).

ATRIPLECTIDIDAE

2. *Neotriplectides desiderata* Dumas and Nessimian, 2008

Neotriplectides desiderata: Dumas and Nessimian 2008: 64 [Type locality: Brazil, Minas Gerais, Itamonte, Rio Aiuruoca,

22°20'56.9"S 44°41'37.9"W, 1860 m; holotype depository: DZRJ; male; pupa] – Dumas et al. 2009: 371 [checklist].

Neotriplectides sp.: Holzenthal 1997: 160 [larva] – Paprocki, Holzenthal and Blahnik 2004: 5 [checklist] – Dumas and Nessimian 2008: 64 [association with *N. desiderata*].

Sites in Itatiaia massif: AI 02, AI 04, AI 11, CB 21, and PR 12.

Distribution: Brazil (MG, RJ, SP).

CALAMOCERATIDAE

3. *Phylloicus abdominalis* (Ulmer, 1905)

Phylloicus abdominalis: Ulmer 1905a: 34 [Type locality: Brazil, “Are-as” [probably in Santa Catarina]; holotype depository: MLUH – type destroyed; male; in *Homoeoplectron*] – Ulmer 1905b: 77 [comb. nov., as *Phylloicus abdominalis*] – Ulmer 1913: 398 [distribution] – Prather 2003: 15 [neotype; male; female] – Paprocki, Holzenthal and Blahnik 2004: 5 [checklist] – Huamantincó, Dumas and Nessimian 2005: 20 [larva; pupa] – Dumas et al. 2009: 367 [checklist].

Sites in Itatiaia massif: AI 04, CB 11, CB 12, CB 13, CB 15, CB 19, CB 20, CB 21, PE 03, PE 04, PR 02, PR 03, PR 09, PR 12, and PR 14.

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

4. *Phylloicus angustior* Ulmer, 1905

Phylloicus angustior: Ulmer 1905b: 78 [Type locality: Brazil, Rio Grande do Sul; holotype depository: NHMW; male] – Flint 1966: 11 [lectotype; male] – Botosaneanu and Flint 1982: 24 [larva] – Botosaneanu and Alkins-Koo 1993: 38 [distribution] – Prather 2003: 27 [male; female] – Paprocki, Holzenthal and Blahnik 2004: 5 [checklist].

Phylloicus hansonii: Denning, in Denning, Resh and Hogue 1983: 184 [Type locality: Trinidad, Simla Research Station; holotype depository: CASC; male] – Botosaneanu and Alkins-Koo 1993: 38 [to synonymy].

Sites in Itatiaia massif: AI 04.

Distribution: Argentina, Brazil (GO, MG, PR, RS, SC), Colombia, Trinidad, and Venezuela.

5. *Phylloicus bidigitatus* Prather, 2003

Phylloicus bidigitatus: Prather 2003: 34 [Type-locality: Brazil, Rio de Janeiro, Itatiaia; holotype depository: NHMW; male] – Paprocki, Holzenthal and Blahnik 2004: 5 [checklist] – Dumas et al. 2009 [checklist] – Dumas et al. 2010: 7 [distribution].

Sites in Itatiaia massif: AI 06, AI 09, CB 09, and CB 11.

Distribution: Brazil (RJ, SP).

6. *Phylloicus monneorum* Dumas and Nessimian, 2010

Phylloicus monneorum: Dumas and Nessimian 2010a: 309 [Type locality: Brazil, Rio de Janeiro, Itatiaia, Parque Nacional do Itatiaia, Rio Campo Belo tributary, in the track to Lago Azul, 22°27'8.38"S 44°36'40.99"W, 790 m; holotype depository: DZRJ; male; female].

Sites in Itatiaia massif: CB 10, and CB 23.

Distribution: Brazil (RJ).

ECNOMIDAE

7. *Austrotinodes prolixus* Flint and Denning, 1989

Austrotinodes prolixus: Flint and Denning 1989: 120 [Type locality: Brazil, Minas Gerais, [Jaboticatubas municipality], Chapeau do Sol [sic, recte Chapéu do Sol], Km 110, Serra do Cipó; type depository: MZSP; male] – Paprocki, Holzenthal and Blahnik 2004: 5

[checklist] – Dumas et al. 2009: 357 [checklist; distribution] – Dumas et al. 2010: 7 [distribution].

Sites in Itatiaia massif: PE 01, PE 02, PE 03, PE 04, PE 05, PR 12, and SA 01.

Distribution: Brazil (MG, RJ, SP).

8. *Austrotinodes taquaralis* Thomson and Holzenthal, 2010

Austrotinodes taquaralis: Thomson and Holzenthal 2010: 47 [Type locality: Brazil, Rio de Janeiro, Parque Nacional Itatiaia, Rio Taquaral, 22°27.252'S 44°36.570'W, 1300 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Taquaral (22°24'33''S 44°33'08''W) – see Thomson and Holzenthal 2010.

Distribution: Brazil (MG, RJ).

GLOSSOSOMATIDAE

9. *Itauara julia* Robertson and Holzenthal, 2011

Itauara julia: Robertson and Holzenthal 2011: 73 [Type locality: Brazil, Rio de Janeiro, Parque Nacional Itatiaia, Rio Campo Belo, trail to Véu da Noiva, 22°25'42"S 44°37'10"W, 1310 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo, trail to Véu da Noiva (22°25'42"S 44°37'10"W); PNI, Rio Campo Belo (22°27'02"S 44°36'49"W); PNI, Rio Taquaral (22°27'15"S 44°36'34"W) – see Robertson and Holzenthal 2011.

Distribution: Brazil (RJ).

10. *Mortoniella crescentis* Blahnik and Holzenthal, 2011

Mortoniella crescentis: Blahnik and Holzenthal 2011: 14 [Type locality: Brazil, Rio de Janeiro, Parque Nacional Itatiaia, Rio Campo Belo, trail to Vêu da Noiva, 22°25'42"S 44°37'10"W, 1310 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo, trail to Vêu da Noiva (22°25'42"S 44°37'10"W); PNI, Rio Campo Belo (22°27'02"S 44°36'49"W) – see Blahnik and Holzenthal 2011.

Distribution: Brazil (RJ).

11. *Mortoniella latispina* Blahnik and Holzenthal, 2011

Mortoniella latispina: Blahnik and Holzenthal 2011: 14 [Type locality: Brazil, Rio de Janeiro, Parque Nacional Itatiaia, Rio Campo Belo, trail to Vêu da Noiva, 22°25'42"S 44°37'10"W, 1310 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo, trail to Vêu da Noiva (22°25'42"S 44°37'10"W) – see Blahnik and Holzenthal 2011.

Distribution: Brazil (RJ).

12. *Mortoniella teutona* (Mosely, 1939)

Mortoniella teutona: Mosely 1939a: 223 [Type locality: Brazil, Santa Catarina, [Seara municipality], Nova Teotônia [sic, recte Nova Teutônia]; holotype depository: BMNH; male; in *Mexitrichia*] – Flint 1963: 474 [distribution] – Flint 1966: 2 [erroneously to synonymy with *M. albolineata*] – Flint 1972: 226 [resurrected; distribution] – Angrisano 1997: 58 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] –

Paprocki, Holzenthal and Blahnik 2004: 6 [checklist] – Blahnik and Holzenthal 2008: 69 [comb. nov., as *Mortoniella teutona*; in *leroda* group] – Dumas et al. 2009: 364 [checklist] – Blahnik and Holzenthal 2011: 31 [redescription; distribution].

Sites in Itatiaia massif: PE 02, PE 03, PE 04, and PE 05.

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

HELICOPSYCHIDAE**13. *Helicopsyche (Feropsyche) monda* Flint, 1983**

Helicopsyche monda: Flint 1983: 93 [Type locality: Paraguay, Depto. Alto Paraná, Salto del Monday, near Puerto Presidente Franco; holotype depository: USNM; male] – Johanson 2002: 92 [redescription; distribution] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 6 [checklist] – Dumas et al. 2009: 371 [checklist; distribution].

Sites in Itatiaia massif: CB 13, PR 12, and PR 14.

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

HYDROBIOSIDAE**14. *Atopsyche (Atopsaura) hatunpuna* Schmid, 1989**

Atopsyche hatunpuna: Schmid 1989: 122 [Type locality: Brazil, São Paulo, [Salesópolis municipality], Casa Grande, Ribeirão Coruja; holotype depository: MZSP; male; in *longipennis* group] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2010: 7 [distribution].

Sites in Itatiaia massif: AI 03, and AI 10.

Distribution: Brazil (MG, SP).

15. *Atopsyche (Atopsaura) huamachucu* Schmid, 1989

Atopsyche huamachucu: Schmid 1989: 124 [Type locality: Brazil, Rio de Janeiro, Km 17, 18 Km S of Teresópolis; holotype depository: MZSP; male; in *longipennis* group] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 365 [checklist].

Sites in Itatiaia massif: CB 02, and CB 05.

Distribution: Brazil (RJ).

16. *Atopsyche (Atopsaura) huanapu* Schmid, 1989

Atopsyche huanapu: Schmid 1989: 124 [Type locality: Brazil, São Paulo, [Salesópolis municipality], E.B. de Boracéia, Parede da Pedreira; holotype depository: MZSP; male; in *longipennis* group] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 365 [checklist].

Sites in Itatiaia massif: CB 02, CB 21, PE 04, and PR 12.

Distribution: Brazil (RJ, SP).

17. *Atopsyche (Atopsaura) huarucu* Schmid, 1989

Atopsyche huarucu: Schmid 1989: 125 [Type locality: Brazil, Minas Gerais, Nova Lima; holotype depository: MZSP; male; in *longipennis* group] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 365 [checklist].

Sites in Itatiaia massif: CB 02, CB 13, and PE 04.

Distribution: Brazil (MG, RJ, SP).

18. *Atopsyche (Atopsaura) sanctipauli* Flint, 1974

Atopsyche sanctipauli: Flint 1974a: 5 [Type locality: Brazil, São Paulo, Alto da Serra [probably Santo André municipality, Paranapiacaba village]; holotype depository: NHMW; male] – Schmid 1989: 144 [in *longipennis* group] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 365 [checklist].

Sites in Itatiaia massif: PE 01, and PE 05.

Distribution: Brazil (RJ, PR, SC, SP).

19. *Atopsyche (Atopsaura) zernyi* Flint, 1974

Atopsyche zernyi: Flint 1974a: 5 [Type locality: Brazil, São Paulo, Alto da Serra [probably Santo André municipality, Paranapiacaba village]; holotype depository: NHMW; male] – Schmid 1989: 144 [in *longipennis* group] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 365 [checklist] – Dumas et al. 2010: 7 [distribution].

Sites in Itatiaia massif: AI 03, CB 07, CB 14, PR 09, PR 10, and SA 04.

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

HYDROPSYCHIDAE**20. *Centromacronema auripenne* (Rambur, 1842)**

Centromacronema auripenne: Rambur 1842: 507 [Type locality: Brazil; holotype depository: ISNB; male; in *Macronema*] – Ulmer 1905b: 87 [comb. nov., as *Centromacronema auripenne*] – Ulmer 1907a: 63 [type species] – Ulmer 1907b: 112 [male; redescription] – Betten and Mosely 1940: 209 [type redescription of *C. cupreum*; venation] – Holzenthal 1988a: 65 [distribution] – Flint 1996: 411 [distribution] – Paprocki,

Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 357 [checklist].

Macronema cupreum: Walker 1852: 76 [Type locality: Brazil; holotype depository: BMNH; male] – Ulmer 1907b: 112 [to synonymy].

Leptocerus niveistigma: Walker 1860: 176 [Type locality: Brazil; holotype depository: BMNH; male] – Ulmer 1907b: 112 [to synonymy].

Leptocerus abjurans: Walker 1860: 177 [Type locality: Brazil; holotype depository: BMNH; male] – Ulmer 1907b: 112 [to synonymy].

Leptocerus quadrifurcata: Walker 1860: 177 [Type locality: Brazil; holotype depository: BMNH; male] – Ulmer 1907b: 112 [to synonymy].

Centromacronema extensum Banks 1913: 238 [Type locality: Panama, Lino; holotype depository: MCZN; male] – Flint 1967: 7 [to synonymy].

Sites in Itatiaia massif: AI 04, PE 01, PE 03, and PR 06.

Distribution: Bolivia, Brazil (MG, RJ, SC, SP), Colombia, Costa Rica, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela.

21. *Leptonema bifurcatodes* Flint, 2008

Leptonema bifurcatodes: Flint 2008: 462 [Type locality: Brazil, Rio de Janeiro, Parque Nacional do Itatiaia, Rio Campo Belo, 22°27.033'N 44°36.318'W; holotype depository: MZSP, male] – Dumas et al. 2009: 357 [checklist].

Sites in Itatiaia massif: CB 11.

Distribution: Brazil (RJ).

22. *Leptonema pallidum* Guérin, 1843

Leptonema pallidum: Guérin 1843: 396 [Type locality: Brazil; holotype depository: unknown; sex undetermined] – Flint, McAlpine and Ross 1987: 68 [male; distribution] – Oliveira and Froehlich 1996: 757 [biology] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 358 [checklist].

Leptonema furcatum: Ulmer 1905a: 57 [Type locality: Brazil, Espírito Santo; holotype depository: MZPW; male] – Mosely 1939b: 310 [to synonymy].

Hydropsyche flagellata: Jacquemart 1962: 6 [Type locality: Brazil, Rio de Janeiro, Bomanca; holotype depository: ISNB; male] – Flint, McAlpine and Ross 1987: 68 [to synonymy].

Sites in Itatiaia massif: PE 02, and SA 03.

Distribution: Argentina and Brazil (DF, ES, GO, MG, RJ, SP).

23. *Leptonema tridens* Mosely, 1933

Leptonema tridens: Mosely 1933: 17 [Type locality: Brazil, Paraná; holotype depository: BMNH; male] – Flint, McAlpine and Ross 1987: 46 [male; distribution] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 8 [checklist] – Dumas et al. 2009: 357 [checklist] – Nessimian and Dumas 2010: 466 [larva; pupa].

Sites in Itatiaia massif: AI 01, AI 04, AI 10, PR 02, PR 04, PR 08, PR 10, PR 12, and PR 14.

Distribution: Brazil (MG, PR, RJ, SP), and Paraguay [?].

24. *Leptonema viridianum* Navás, 1916

Leptonema viridianum: Navás 1916a: 31 [Type locality: Brazil, Bahia; holotype

depository: collection Navás, now lost; female] – Flint, McAlpine and Ross 1987: 70 [male; distribution] – Oliveira and Froehlich 1996: 757 [biology] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7 [checklist] – Dumas et al. 2009: 358 [checklist] – Dumas et al. 2010: 8 [distribution].

Leptonema dissimile: Mosely 1933: 43 [Type locality: Bolivia, Pcia. Sara; holotype depository: MCZN; male] – Flint, 1978: 384 [to synonymy].

Sites in Itatiaia massif: PE 05.

Distribution: Argentina, Bolivia, Brazil (BA, MG, RJ, PR, PA, SP), Colombia, Ecuador, Guyana, Paraguay, Peru, and Venezuela.

25. *Macronema bicolor* Ulmer, 1905

Macronema bicolor: Ulmer 1905a: 75 [Type locality: Brazil, Santa Catarina; holotype depository: MZPW; male] – Flint 1966: 6 [male; lectotype; wings] – Flint and Bueno-Soria 1982: 359 [male; synonymy; wings] – Paprocki, Holzenthal and Blahnik 2004: 8 [checklist] – Dumas et al. 2010: 8 [distribution].

Macronema agnathum: Müller 1921: 530 [Type locality: unknown, but presumably Brazil, Santa Catarina; holotype depository: NHMW; male] – Flint and Bueno-Soria 1982: 359 [to synonymy].

Leptonema apicale: Navás 1927: 40 [Type locality: Brazil, Minas Gerais; holotype depository: DEIC; male] – Flint and Bueno-Soria 1982: 359 [to synonymy].

Sites in Itatiaia massif: AI 08, and AI 10.

Distribution: Brazil (MG, SC, SP).

26. *Macronema partitum* Navás, 1932

Macronema partitum: Navás 1932: 63 [Type locality: Brazil, Rio de Janeiro, Barão Homem de Melo [currently Itatiaia municipality]; holotype depository: DEIC; female] – Paprocki, Holzenthal and Blahnik 2004: 8 [checklist] – Dumas et al. 2009: 358 [checklist].

Sites in Itatiaia massif: Rio de Janeiro, Barão Homem de Mello [currently Itatiaia municipality] – see Navás 1932.

Distribution: Brazil (RJ).

27. *Macrostemum hyalinum* (Pictet, 1836)

Macrostemum hyalinum: Pictet 1836: 401 [Type locality: Indes Orientalis; holotype depository: unknown; sex undetermined; as *Hydropsyche hyalina*] – Hagen 1861: 328 [comb. nov., as *Macronema hyalina*] – Ulmer 1907b: 75 [wings] – Flint 1978: 389 [male; wings] – Flint and Bueno-Soria 1982: 358 [comb. nov., as *Macrostemum hyalinum*] – Flint 1996: 412 [distribution] – Marinoni and Almeida 2000: 379 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 8 [distribution] – Dumas et al. 2009: 358 [checklist; distribution].

Sites in Itatiaia massif: CB 16, and SA 03.

Distribution: Brazil (PA, PR, RJ), Colombia, Guyana, Peru, and Venezuela.

28. *Macrostemum maculatum* (Perty, 1833)

Macrostemum maculatum: Perty 1833: 129 [Type locality: Brazil, [São Paulo], inter St. Pauli civitatem et Villam Riccam; holotype depository: ZSMC; male; as *Phryganea maculata*] – Ulmer 1905b: 82 [comb. nov., as *Macronema maculata*] – Burmeister 1883: 273 [lectotype] – Burmeister 1889: 259 [description of lectotype] – Flint and Bueno-Soria 1982: 358 [comb. nov., as

Macrostemum maculatum] – Paprocki, Holzenthal and Blahnik 2004: 8 [checklist].

Macronema tuberosum: Ulmer 1905b: 82 [Type locality: Brazil, Bahia; holotype depository: NHMW; male] – Flint 1966: 7 [male; lectotype; wings] – Burmeister 1983: 273 [to synonymy].

Sites in Itatiaia massif: AI 08.

Distribution: Brazil (BA, MG, SP).

29. *Smicridea (Smicridea) albosignata* Ulmer, 1907

Smicridea albosignata: Ulmer 1907c: 34 [Type locality: Brazil, Santos; holotype depository: ZMUH; male] – Weidner 1964: 97 [lectotype] – Denning and Sykora 1968: 176 [male; redescription] – Marinoni and Almeida 2000: 286 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 10 [checklist] – Dumas et al. 2009: 359 [checklist].

Sites in Itatiaia massif: AI 08, CB 11, CB 09, CB 12, CB 15, PE 01, PE 04, PE 05, PR 14, SA 03, and SA 04.

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

30. *Smicridea (Rhyacophylax) froehlichii* Almeida and Flint, 2002

Smicridea froehlichii: Almeida and Flint 2002: 768 [Brazil, Rio de Janeiro, Km 17, 18 Km S of Teresópolis, 1180 m; holotype depository: MZSP; male; female] – Paprocki, Holzenthal and Blahnik 2004: 9 [checklist] – Dumas et al. 2009: 359 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 04, CB 06, CB 07, CB 12, CB 15, CB 21, PR 04, PR 06, PR 07, PR 08, PR 09, PR 10, PR 12, PR 14, PE

01, PE 02, PE 03, PE 04, SA 01, SA 02, SA 03, SA 04, and SA 05.

Distribution: Brazil (MG, RJ, SP).

31. *Smicridea (Smicridea) gemina* Blahnik, 1995

Smicridea gemina: Blahnik 1995: 90 [Type locality: Costa Rica, Alahuela, Reserva Florestal San Ramón, Río San Lorencito and tribs., 10.216°N 84.607°W; holotype depository: USNM; male] – Dumas et al. 2009: 359 [checklist; distribution].

Sites in Itatiaia massif: AI 04, PR 12, PR 14, SA 03, and SA 04.

Distribution: Brazil (MG, RJ), Costa Rica, Ecuador, Nicaragua, and Panama.

32. *Smicridea (Rhyacophylax) jundiai* Almeida and Flint, 2002

Smicridea jundiai: Almeida and Flint 2002: 769 [Type locality: Brazil, Espírito Santo, 15 km SE of Santa Teresa, Fazenda Santa Clara, 460 m; holotype depository: MZSP; male; female] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 9 [checklist] – Dumas et al. 2009: 360 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: PE 02, PE 03, PE 04, PE 05, PR 12, PR 14, and SA 01.

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

HYDROPTILIDAE

33. *Abtrichia squamosa* Mosely, 1939

Abtrichia squamosa: Mosely 1939a: 226 [Type locality: Brazil, Santa Catarina, [Seara municipality], Nova Teotônia [sic, recte Nova Teutônia]; holotype depository: BMNH; male] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 10 [checklist] – Dumas et al. 2009: 365 [checklist].

Sites in Itatiaia massif: PE 02, and PE 03.
Distribution: Brazil (MG, RJ, SC).

34. *Byrsopteryx abrelata* Harris and Holzenthal, 1994

Byrsopteryx abrelata: Harris and Holzenthal 1994: 157 [Type locality: Brazil, Rio de Janeiro, Nova Friburgo, municipal water supply, 950 m; holotype depository: MZSP; male; female] – Paprocki, Holzenthal and Blahnik 2004: 11 [checklist] – Dumas et al. 2009: 366 [checklist] – Santos and Nessimian 2010: 52 [larva; pupa; distribution].

Sites in Itatiaia massif: SA 04.
Distribution: Brazil (PR, RJ).

35. *Hydroptila argentinica* Flint, 1983

Hydroptila argentinica: Flint 1983: 43 [Type locality: Argentina, Pcia. Tucumán, S. Concepción; holotype depository: USNM; male; female] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 11 [checklist] – Dumas et al. 2009: 366 [checklist].

Sites in Itatiaia massif: PE 02, PE 03, PE 04, PE 05, PR 01, PR 05, PR 06, PR 07, PR 08, PR 09, PR 10, SA 01, SA 02, and SA 03.
Distribution: Argentina, Brazil (PR, RJ, SP), and Uruguay.

36. *Hydroptila producta* Mosely, 1939

Hydroptila producta: Mosely 1939a: 236 [Type locality: Brazil, Santa Catarina, [Seara municipality], Nova Teotônia [sic, recte Nova Teutônia]; holotype depository: BMNH; male] – Angrisano 1995b: 509 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 11 [checklist] – Dumas et al. 2009: 366 [checklist; distribution].

Sites in Itatiaia massif: PE 02, and PE 03.
Distribution: Brazil (RJ, SC), and Uruguay.

37. *Neotrichia dubitans* (Mosely, 1939)

Neotrichia dubitans: Mosely 1939a: 235 [Type locality: Brazil, Santa Catarina, [Seara municipality], Nova Teotônia [sic, recte Nova Teutônia]; holotype depository: BMNH; male; in *Dolotrichia?*] – Ross 1944: 154 [comb. nov., as *Neotrichia dubitans*] – Paprocki, Holzenthal and Blahnik 2004: 11 [checklist] – Dumas et al. 2009: 366 [checklist; distribution].

Sites in Itatiaia massif: CB 07, PE 01, PE 03, and SA 03.
Distribution: Brazil (RJ, SC).

38. *Oxyethira (Loxotrichia) tica* Holzenthal and Harris, 1992

Oxyethira tica: Holzenthal and Harris 1992: 168 [Type locality: Costa Rica, Guanacaste, Parque Nacional Santa Rosa, Quebrada El Duende near La Casona, 10.838°N 85.614°W; holotype depository: USNM; male; female] – Flint 1996: 98 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Santos, Henriques-Oliveira and Nessimian 2009: 36 [distribution] – Dumas et al. 2009: 366 [checklist; distribution].

Sites in Itatiaia massif: PE 03.

Distribution: Brazil (AM, MG, RJ), Costa Rica, Dominica, Ecuador, Grenada, Guadeloupe, Honduras, Mexico, Panama, St. Lucia, St. Vicent, Trinidad, and Venezuela.

39. *Rhyacopsyche bulbosa* Wasmund and Holzenthal, 2007

Rhyacopsyche bulbosa: Wasmund and Holzenthal 2007: 8 [Type locality: Brazil, Rio de Janeiro, Nova Friburgo, municipal water supply, 950 m; holotype depository: MZSP;

male] – Dumas et al. 2009: 366 [checklist; distribution].

Sites in Itatiaia massif: SA 04.

Distribution: Brazil (MG, RJ, SP).

40. *Rhyacopsyche dikrosa* Wasmund and Holzenthal, 2007

Rhyacopsyche dikrosa: Wasmund and Holzenthal 2007: 11 [Type locality: Brazil, São Paulo, Pedregulho, 140 km NE Ribeirão Preto; holotype depository: MZSP; male] – Dumas et al. 2009: 366 [checklist; distribution].

Sites in Itatiaia massif: PE 01, PE 02, PE 03, PE 04, and SA 03.

Distribution: Brazil (MG, SP).

41. *Rhyacopsyche hagenii* Müller, 1879

Rhyacopsyche hagenii: Müller 1879: 143 [Type locality: Brazil; holotype depository: unknown; case] – Thienemann 1905a: 287 [male; larva] – Müller 1921: 525 [larva] – Ulmer 1957: 172, 187 [bibliography; key to larvae] – Angrisano 1995b: 509 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Wasmund and Holzenthal 2007: 6 [male; female; distribution] – Dumas et al. 2009: 367 [checklist].

Sites in Itatiaia massif: CB 04, CB 06, CB 07, CB 12, PE 01, PE 02, PE 04, and PE 05.

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

LEPTOCERIDAE

42. *Grumichella rostrata* Thienemann, 1905

Grumichella rostrata: Thienemann 1905b: 537 [Type locality: not designated [probably Brazil, Santa Catarina, Gruta dos Macacos, near Blumenau – see Holzenthal 1988b]; holotype depository: unknown; pupa; case] – Thienemann 1909: 41, 42, 125 [larva; pupa] –

Holzenthal 1988b: 93 [male; female; larva; pupa] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Dumas et al. 2009: 368 [checklist].

Sites in Itatiaia massif: AI 04, CB 12, PE 02, PE 03, PE 05, PR 12, and PR 14.

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

43. *Nectopsyche aureovittata* Flint, 1983

Nectopsyche aureovittata: Flint 1983: 74 [Type locality: Argentina, Pcia. Misiones, Rio Iguazú, Camp Nañdu; holotype depository: USNM; male] – Almeida and Marinoni 2000: 349 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Dumas et al. 2009: 368 [checklist].

Sites in Itatiaia massif: PR 12, PR 14, SA 01, SA 03, and SA 04.

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

44. *Nectopsyche bruchi* (Navás, 1920)

Nectopsyche bruchi: Navás 1920: 66 [Type locality: Argentina, Monte Veloz, estancia Barreto; holotype depository: MACN; male; in *Leptocella*] – Flint 1972: 243 [diagnosis; distribution] – Flint 1974b: 127 [comb. nov., as *Nectopsyche bruchi*] – Flint 1982: 55 [redescription; distribution] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Dumas et al. 2009: 368 [checklist; distribution].

Sites in Itatiaia massif: PE 01.

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

45. *Nectopsyche fuscomaculata* Flint, 1983

Nectopsyche fuscomaculata: Flint 1983: 73 [Type locality: Argentina, Pcia. Misiones, Arroyo Liso, 8 km W General Güemes;

holotype depository: USNM; male] – Almeida and Marinoni 2000: 349 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 12 [checklist] – Dumas et al. 2009: 368 [checklist; distribution].

Sites in Itatiaia massif: CB 12, PE 01, and PE 05.

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

46. *Nectopsyche muhni* (Navás, 1916)

Nectopsyche muhni: Navás 1916b: 68 [Type locality: Argentina, Santa Fé; holotype depository: MZBS; female; in *Leptocella*] – Schmid 1949: 388 [male] – Flint 1974b: 127 [comb. nov., as *Nectopsyche muhni*] – Flint 1982: 58 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 368 [checklist; distribution].

Leptocella fulvocapilla: Navás 1922: 399 [Type locality: Argentina, La Plata, Palo Blanco; holotype depository: MACN; male] – Flint 1972: 243 [to synonymy].

etodes pretiosella: Banks 1924: 447 [Type locality: Peru, Yurimaguas; holotype depository: MCZN; female] – Flint 1982: 58 [to synonymy].

Leptocella bridarollia: Navás 1930: 75 [Type locality: Argentina, Santa Fé; holotype depository: ISMA; female] – Flint 1982: 58 [to synonymy].

Sites in Itatiaia massif: CB 06, PE 02, and PR 12.

Distribution: Argentina, Bolivia, Brazil (MG, RJ), Ecuador, Guyana, Paraguay, Peru, Surinam, and Venezuela.

47. *Nectopsyche ortizi* Holzenthal, 1995

Nectopsyche ortizi: Holzenthal 1995: 73 [Type locality: Costa Rica, Limón, Parque Nacional Tortuguero, Río Tortuguero, 3.5 Km S Tortuguero, 10.509°N 83.504°W; holotype depository: USNM; male; in *gemma* group] – Flint 1974b: 129 [male; as *N. gemma*, nec Müller 1880] – Almeida and Marinoni 2000: 349 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 369 [checklist].

Sites in Itatiaia massif: AI 04, CB 07, CB 12, PE 02, PE 04, PE 05, and PR 09.

Distribution: Argentina, Brazil (MG, PA, PR, RJ, SP), Costa Rica, Guyana, Mexico, Panama, Paraguay, Peru, Surinam, and Venezuela.

48. *Nectopsyche punctata* (Ulmer, 1905)

Nectopsyche punctata: Ulmer 1905b: 75 [Type locality: Brazil, [Minas Gerais], Santa Rita [Santa Rita de Jacutinga municipality], Boquero, Rio Preto; holotype depository: NHMW; male; in *Leptocella*] – Flint 1966: 9 [male; lectotype] – Flint 1974b: 127 [comb. nov., as *Nectopsyche punctata*] – Flint 1991: 94 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 369 [checklist; distribution].

Leptocella fenestrata: Banks 1913: 237 [Type locality: Panama, Lino; holotype depository: MCZN; male] – Flint 1966: 9 [to synonymy].

Leptocella spegazzinia: Navás 1920: 69 [Type locality: Paraguay, Río Paraguay; holotype depository: MZBS; male] – Flint 1981: 34 [to synonymy].

Leptocella ambitiosa: Navás 1933: 118 [Type locality: Argentina, Santa Fé; holotype depository: MZBS; male] – Schmid 1949: 386 [to synonymy with *N. mixta*] – Flint 1966: 9 [to synonymy].

Sites in Itatiaia massif: CB 11, PE 03, SA 02, and SA 03.

Distribution: Argentina, Bolivia, Brazil (MG, PA, RJ, SP), Colombia, Costa Rica, Ecuador, Guyana, Mexico, Panama, Paraguay, Peru, Surinam, and Venezuela.

49. *Nectopsyche separata* (Banks, 1920)

Nectopsyche separata: Banks 1920: 353 [Type locality: Brazil, Santa Catarina; holotype depository: MCZN; male; in *Leptocella*] – Flint 1967: 22 [male; lectotype] – Flint 1972: 242 [distribution] – Flint 1974b: 127 [comb. nov., as *Nectopsyche separata*] – Almeida and Marinoni 2000: 349 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 369 [checklist].

Leptocella graphica: Navás 1932: 65 [Type locality: Brazil, Rio de Janeiro, Barão Homem de Melo [currently Itatiaia municipality]; holotype depository: DEIC; male] – Flint 1982: 59 [to synonymy].

Sites in Itatiaia massif: CB 15, PE 04, PR 04, PR 07, PR 08, PR 09, PR 10, and SA 02.

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

50. *Neoathripsodes anomalus* Holzenthal, 1989

Neoathripsodes anomalus: Holzenthal 1989: 31 [Type locality: Brazil, Rio de Janeiro, Km 17, 18 Km S Teresópolis; holotype depository: MZSP; male] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] –

Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 369 [checklist].

Sites in Itatiaia massif: AI 06, AI 08, CB 13, CB 20, PE 05, and SA 03.

Distribution: Brazil (MG, RJ).

51. *Notalina (Neotalina) hamiltoni* Holzenthal, 1986

Notalina hamiltoni: Holzenthal 1986: 67 [Type locality: Brazil, São Paulo, [Salesópolis municipality], E.B. Boracéia; holotype depository: MZSP; male] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 370 [checklist; distribution] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 04, and PE 04.

Distribution: Brazil (MG, RJ, SP).

52. *Notalina (Neotalina) morsei* Holzenthal, 1986

Notalina morsei: Holzenthal 1986: 63 [Type locality: Brazil, Minas Gerais, Serra do Cipó; holotype depository: MZSP; male] – Calor, Holzenthal and Amorim 2007: 42 [phylogeny; distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Calor and Froehlich 2008: 46 [larva; pupa] – Dumas et al. 2009: 370 [checklist].

Sites in Itatiaia massif: CB 06, CB 07, CB 11, CB 12, CB 13, CB 15, PE 01, PE 04, PE 05, PR 09, PR 12, SA 03, and SA 04.

Distribution: Brazil (MG, RJ, SP).

53. *Triplectides gracilis* (Burmeister, 1839)

Triplectides gracilis: Burmeister 1839: 921 [Type locality: Brazil, Nova Friburgo; holotype depository: MLUH – type destroyed; male; in *Mystacides*] – Ulmer 1905a: 27 [redescription of male type; comb. nov., as

Triplectides gracilis] – Mosely 1936: 96 [male] – Holzenthal 1988c: 195 [Neotype: Brazil, Rio de Janeiro, Nova Friburgo, municipal water supply; neotype depository: USNM; male; female; redescription; distribution] – Almeida and Marinoni 2000: 349 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 370 [checklist].

Mystacides princeps: Burmeister 1839: 921 [Type locality: Brazil, Rio de Janeiro, Nova Friburgo; holotype depository: MLUH – type destroyed; male] – Ulmer 1905a: 27 [to synonymy].

Tetracentron ramulorus: Müller 1921: 541 [Type locality: Brazil, Santa Catarina; holotype depository: unknown; larva; pupa] – Holzenthal 1988c: 195 [to synonymy].

Sites in Itatiaia massif: AI 04, AI 06, CB 07, CB 08, CB 11, CB 12, CB 13, CB 16, CB 21, PE 01, PE 03, PE 04, PR 03, PR 05, PR 09, PR 10, PR 12, PR 14, SA 03, and SA 05. Distribution: Argentina, Brazil (ES, MG, PR, RJ, SC, SP), Paraguay, and Surinam.

54. *Triplectides itatiaia* Dumas and Nessimian, 2010

Triplectides itatiaia: Dumas and Nessimian 2010b: 949 [Type locality: Brazil, Rio de Janeiro, Itatiaia, Parque Nacional do Itatiaia, Rio Tapera, 22°26'59.64" S 44°36'19.39" W, 794 m; holotype depository: DZRJ; male].

Sites in Itatiaia massif: CB 08, and CB 20. Distribution: Brazil (RJ).

55. *Triplectides misionensis* Holzenthal, 1988

Triplectides misionensis: Holzenthal 1988c: 198 [Type locality: Argentina, Misiones, Arroyo Piray Guazú, N San Pedro; holotype

depository: USNM; male] – Blahnik, Paprocki and Holzenthal: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 371 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 06, and SA 05. Distribution: Argentina, and Brazil (MG, PR, RJ, SC, SP).

56. *Triplectides neotropicus* Holzenthal, 1988

Triplectides neotropicus: Holzenthal 1988c: 200 [Type locality: Venezuela, Territorio Federal Amazonas, camp IV, Cerro de la Neblina, 0°58'N 65°57'W; holotype depository: USNM; male] – Blahnik, Paprocki and Holzenthal: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 371 [checklist; distribution] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: CB 07. Distribution: Brazil (MG, RJ, SP), and Venezuela.

57. *Triplectides ultimus* Holzenthal, 1988

Triplectides ultimus: Holzenthal 1988c: 205 [Type locality: Brazil, Rio de Janeiro, Itatiaia; holotype depository: MZSP; male; female] – Blahnik, Paprocki and Holzenthal: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 371 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 04, AI 08, AI 09, AI 10, CB 15, PR 03, PR 14, and SA 03. Distribution: Brazil (MG, RJ).

LIMNEPHILIDAE**58. *Antarctoecia brasiliensis* Huamantínco and Nessimian, 2003**

Antarctoecia brasiliensis: Huamantínco and Nessimian 2003: 226 [Type locality: Brazil, Minas Gerais, Itamonte, Rio Aiuruoca, 22°20'9.28"S 44°41'6.06"W, 1860 m; holotype depository: DZRJ; male; female] – Huamantínco and Nessimian 2004a: 2 [larva; pupa] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist].

Sites in Itatiaia massif: AI 01, AI 02, and AI 04.

Distribution: Brazil (MG).

ODONTOCERIDAE**59. *Anastomoneura guahybae* Huamantínco and Nessimian, 2004**

Anastomoneura guahybae: Huamantínco and Nessimian 2004b: 282 [Type locality: Brazil, Minas Gerais, Itamonte, Rio Aiuruoca, 22°20'9.28"S 44°41'6.06"W, 1860 m; holotype depository: DZRJ; male; female] – Dumas and Nessimian 2006: 45 [larva; pupa; distribution].

Sites in Itatiaia massif: AI 04, AI 08, AI 09, and AI 11.

Distribution: Brazil (MG).

60. *Barypenthus concolor* Burmeister, 1839

Barypenthus concolor: Burmeister 1839: 929 [Type locality: Brazil, Rio de Janeiro, Nova Friburgo; holotype depository: MLUH – type destroyed; male] – Ulmer 1905a: 22 [male] – Paprocki and Holzenthal 2002: 224 [redescription; male; wings; biology] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 371 [checklist].

Barypenthus rufipes: Burmeister 1839: 929 [Type locality: Brazil, Rio de Janeiro, Nova

Friburgo; holotype depository: MLUH – type destroyed; male] – Ulmer 1905a: 20 [male] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Musarna aperiens: Walker 1860: 178 [Type locality: South America; holotype depository: BMNH; female] – Ulmer 1905a: 23 [to synonymy] – Betten and Mosely 1940: 222 [type female; redescription] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Musarna interclusus: Walker 1860: 178 [Type locality: Brazil; holotype depository: BMNH; female] – Betten and Mosely 1940: 222 [female; redescription] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Musarna claudens: Walker 1860: 179 [Type locality: Brazil; holotype depository: BMNH; male] – Betten and Mosely 1940: 222 [male; redescription] – Flint 1969: 24 [larva; pupa; distribution] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Barypenthus ferrugineus: Navás 1934: 171 [Type locality: Brazil, Rio de Janeiro, Barão Homem de Melo [currently Itatiaia municipality]; holotype depository: DEIC; male] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Barypenthus chysopus: Navás 1934: 172 [Type locality: Brazil, Rio de Janeiro, Barão Homem de Melo [currently Itatiaia municipality]; holotype depository: DEIC; male] – Paprocki and Holzenthal 2002: 225 [to synonymy].

Sites in Itatiaia massif: CB 11, CB 14, CB 15, CB 17, CB 18, CB 21, PR 03, PR 12, and PR 14.

Distribution: Brazil (MG, RJ, SP).

61. *Marilia aiuruoca* Dumas and Nessimian, 2009

Marilia aiuruoca: Dumas and Nessimian 2009: 344 [Type locality: Brazil, Minas Gerais, Itamonte, Rio Aiuruoca, 22°20'9.28"S 44°41'6.06"W, 1860 m; holotype depository: DZRJ; male; female].

Sites in Itatiaia massif: CB 03, CB 19, AI 04, AI 06, PR 09, PR 12, and PR 14. Distribution: Brazil (MG, RJ).

62. *Marilia huamantincoae* Dumas and Nessimian, 2009

Marilia huamantincoae: Dumas and Nessimian 2009: 345 [Type locality: Brazil, Rio de Janeiro, Itatiaia, Maromba, Escorrega do Maromba, Rio Preto, 22°19'48.81"S 44°36'53.94"W, 1357 m; holotype depository: DZRJ; male; female].

Sites in Itatiaia massif: PE 01, PE 04, and PR 13. Distribution: Brazil (RJ).

63. *Marilia major* Müller, 1880

Marilia major: Müller 1880: 127 [Type locality: Brazil, Santa Catarina; holotype depository: unknown; case] – Ulmer 1905a: 25 [male] – Blahnik, Paprocki and Holzenthal: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas and Nessimian 2009: 347 [female; distribution].

Sites in Itatiaia massif: CB 02, AI 04, PR 06, PR 09, PR 10, and PR 12. Distribution: Brazil (MG, PR, RJ, SC).

PHILOPOTAMIDAE**64. *Alterosa beckeri* Blahnik, 2005**

Alterosa beckeri: Blahnik 2005: 14 [Type locality: Brazil, Rio de Janeiro, Itatiaia, 2100 m; holotype depository: MZSP; male; in *sanctipauli* group] – Dumas et al. 2009: 361

[checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 06, CB 20, and PR 12.

Distribution: Brazil (MG, RJ).

65. *Alterosa escova* Blahnik, 2005

Alterosa escova: Blahnik 2005: 21 [Type locality: Brazil, São Paulo, small stream on São Paulo Route 247, 11 km SE Bananal, 22°45.684'S, 44°23.190'W, 675 m; holotype depository: MZSP; male; in *marinonii* group] – Dumas et al. 2009: 361 [checklist].

Sites in Itatiaia massif: CB 11.

Distribution: Brazil (RJ, SP).

66. *Alterosa falcata* Blahnik, 2005

Alterosa falcata: Blahnik 2005: 22 [Type locality: Brazil, Minas Gerais, Ibitipoca, sitio of Anestis Papadopoulos, cachoeira, 21°43.441'S 43°54.537'W, 1125 m; holotype depository: MZSP; male; in *falcata* group] – Dumas et al. 2009: 361 [checklist].

Sites in Itatiaia massif: CB 15, CB 21, PE 01, PE 04, PR 12, PR 14, and SA 05. Distribution: Brazil (MG, RJ, SP).

67. *Alterosa flinti* Blahnik, 2005

Alterosa flinti: Blahnik 2005: 26 [Type locality: Brazil, Espírito Santo, 24 km SE Santa Teresa, 280 m; holotype depository: MZSP; male; in *marinonii* group] – Dumas et al. 2009: 361 [checklist].

Sites in Itatiaia massif: PE 01, PE 02, and PE 04.

Distribution: Brazil (ES, RJ).

68. *Alterosa itatiaiae* Blahnik, 2005

Alterosa itatiaiae: Blahnik 2005: 35 [Type locality: Brazil, Rio de Janeiro, Parque

Nacional Itatiaia, Rio Campo Belo, trail to Veu da Noiva, 22°25.706'S 44°37.171'W, 1310 m; holotype depository: MZSP; male; in *sanctipauli* group] – Dumas et al. 2009: 362 [checklist].

Sites in Itatiaia massif: CB 07, CB 08, CB 11, CB 12, CB 20, CB 21, and PE 01. Distribution: Brazil (RJ).

69. *Alterosa truncata* Blahnik, 2005

Alterosa truncata: Blahnik 2005: 21 [Type locality: Brazil, Minas Gerais, [São Gonçalo do Rio Abaixo municipality], Estação Ecológica de Peti, Córrego Brucutu, 19°52.995'S 43°22.452'W; holotype depository: MZSP; male; in *sanctipauli* group] – Dumas et al. 2009: 362 [checklist; distribution].

Sites in Itatiaia massif: SA 03. Distribution: Brazil (MG, RJ, SP).

70. *Chimarra (Curgia) beckeri* Flint, 1998

Chimarra beckeri: Flint 1998: 19 [Type locality: Brazil, Rio de Janeiro, Mangaratiba; holotype depository: MZSP; male, in *morio* group] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 362 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 08, CB 07, CB 08, CB 16, PE 01, PE 02, PE 03, and PE 04. Distribution: Brazil (MG, RJ).

71. *Chimarra (Chimarrita) camella* Blahnik, 1997

Chimarra camella: Blahnik 1997: 219 [Type locality: Brazil, Minas Gerais, Serra do Cipó, Km 116; holotype depository: MZSP; male; in *simpliciforma* group] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki,

Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 362 [checklist].

Sites in Itatiaia massif: CB 07, CB 15, PE 01, and PE 04.

Distribution: Brazil (MG, RJ, SP).

72. *Chimarra (Chimarrita) camura* Blahnik, 1997

Chimarra camura: Blahnik 1997: 222 [Type locality: Brazil, Rio de Janeiro, Km 54 26 Km E Nova Friburgo; holotype depository: MZSP; male; female; in *simpliciforma* group] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 362 [checklist].

Sites in Itatiaia massif: CB 07, CB 09, PE 01, PE 02, PE 05, and PR 03.

Distribution: Brazil (RJ, SP).

73. *Chimarra (Curgia) froehlichii* Flint, 1998

Chimarra froehlichii: Flint 1998: 16 [Type locality: Brazil, Rio de Janeiro, Km 54, 26 Km E Nova Friburgo; holotype depository: MZSP; male; in *morio* group] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 363 [checklist].

Sites in Itatiaia massif: CB 06, CB 07, CB 12, CB 16, CB 19, CB 20, CB 21, and PR 12. Distribution: Brazil (ES, MG, RJ, SP).

74. *Chimarra (Chimarrita) kontilos* Blahnik, 1997

Chimarra kontilos: Blahnik 1997: 227 [Type locality: Brazil, Espírito Santo, Caixa d'Água, Santa Teresa; holotype depository: MZSP; male; female; in *simpliciforma* group] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and

Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 363 [checklist].

Sites in Itatiaia massif: CB 11, CB 12, CB 13, CB 15, CB 20, CB 22, PE 01, and PE 02.
Distribution: Brazil (ES, MG, RJ, SP).

75. *Chimarra (Curgia) morio* Burmeister, 1839

Chimarra morio: Burmeister 1839: 911 [Type locality: Brazil; holotype depository: ZIUH – type lost; female; in *Chimarrha*] – Flint 1998: 14 [male; redescription; variation; distribution; in *morio* group] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 363 [checklist].

Chimarra martinmoselyi: Botosaneanu 1980: 98 [replacement name for *Chimarra moselyi* Ross, 1956: 50, 71, preoccupied by *Chimarra moselyi* Denning, 1947: 25; Type locality: Argentina [sic, recte Brazil], Rio de Janeiro, Petrópolis; holotype depository: BMNH; male] – Flint 1998: 14 [to synonymy].

Sites in Itatiaia massif: PE 01, and PE 05.
Distribution: Brazil (BA, PR, RJ, SC, SP).

76. *Chimarra (Otarra) odonta* Blahnik, 2002

Chimarra odonta: Blahnik 2002: 85 [Type locality: Brazil, São Paulo, [Salesópolis municipality], E.B. Boracéia; holotype depository: MZSP; male; female] – Paprocki, Holzenthal and Blahnik 2004: 14 [checklist] – Dumas et al. 2009: 364 [checklist] – Dumas et al. 2010: 8 [distribution].

Sites in Itatiaia massif: AI 04, CB 12, CB 20, CB 21, PE 01, PE 04, PR 03, and SA 03.
Distribution: Brazil (MG, RJ, SP).

POLYCENTROPODIDAE

77. *Cernotina puri* Dumas and Nessimian, 2011

Cernotina puri: Dumas and Nessimian 2011: 32 [Type locality: Brazil, Rio de Janeiro, Itatiaia, Penedo, tributary of Rio Palmital, 22°25'40.0"S 44°32'46.0"W, 584 m; holotype depository: DZRJ; male].

Sites in Itatiaia massif: PE 05.
Distribution: Brazil (RJ).

78. *Nyctiophylax (Nyctiophylax) neotropicalis* Flint, 1971

Nyctiophylax neotropicalis: Flint 1971: 28 [Type locality: Colombia, Cundinamarca, Rio Sumapaz Gorge, E of Melgar; holotype depository: USNM; male] – Flint 1974b: 39 [distribution] – Angrisano 1994: 138 [distribution] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 16 [checklist] – Dumas et al. 2009: 360 [checklist] – Dumas et al. 2010: 9 [distribution].

Sites in Itatiaia massif: CB 06, PE 04, and PR 14.

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

79. *Polycentropus fluminensis* Hamilton and Holzenthal, 2011

Polycentropus fluminensis: Hamilton and Holzenthal 2011: 16 [Type locality: Brazil, Rio de Janeiro, Km 17, 18 Km S of Teresópolis, 1180 m; holotype depository: USNM; male].

Sites in Itatiaia massif: AI 06, and CB 14.
Distribution: Brazil (MG, RJ).

80. *Polycentropus inusitatus* Hamilton and Holzenthal, 2011

Polycentropus inusitatus: Hamilton and Holzenthal 2011: 48 [Type locality: Brazil, Rio de Janeiro [sic, recte Minas Gerais], [Itamonte municipality], Brejo da Lapa; holotype depository: USNM; male].

Sites in Itatiaia massif: Minas Gerais, Itamonte, Brejo da Lapa – see Hamilton and Holzenthal 2011.
Distribution: Brazil (MG).

81. *Polycentropus itatiaia* Hamilton and Holzenthal, 2011

Polycentropus itatiaia: Hamilton and Holzenthal 2011: 30 [Type locality: Brazil, Rio de Janeiro, Itatiaia, Parque Nacional do Itatiaia, trib. to Rio Taquaral, 22°26.688'S 44°36.464'W, 1320 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: PE 01.
Distribution: Brazil (MG, RJ).

82. *Polycentropus rosalyae* Hamilton and Holzenthal, 2011

Polycentropus rosalyae: Hamilton and Holzenthal 2011: 42 [Type locality: Brazil, São Paulo, Parque Estadual de Campos de Jordão, Rio Galharda, 22°41.662'S 45°27.783'W, 1530 m; holotype depository: MZSP; male].

Sites in Itatiaia massif: AI 04, and CB 02.
Distribution: Brazil (MG, RJ).

83. *Polycentropus urubici* Holzenthal and Almeida, 2003

Polycentropus urubici: Holzenthal and Almeida 2003: 26 [Type locality: Brazil, Paraná, Telêmaco Borba, Reserva Samuel Klabin, 24°17'S 50°37'W, 750 m; holotype depository: DZUP; male] – Paprocki, Holzenthal and Blahník 2004: 16 [checklist] – Dumas et al. 2010: 9 [distribution].

Sites in Itatiaia massif: AI 04, and AI 08.
Distribution: Brazil (MG, PR, SC).

84. *Polyplectropus alatespinus* Chamorro-Lacayo and Holzenthal, 2010

Polyplectropus alatespinus: Chamorro-Lacayo and Holzenthal 2010: 52 [Type locality: Brazil, Minas Gerais, Parque Estadual do Ibitipoca, Córrego dos Macacos, 21°42'33"S 44°53'36"W, 1360 m; holotype depository: MZSP; male; female; in *annulicornis* group].

Sites in Itatiaia massif: CB 03, and CB 07.
Distribution: Brazil (MG, RJ, SP).

85. *Polyplectropus annulicornis* Ulmer, 1905

Polyplectropus annulicornis: Ulmer 1905: 91 [Type locality: Brazil, Rio Grande do Sul; holotype depository: NMW; female] – Flint 1966: 4 [lectotype; male; female] – Chamorro-Lacayo and Holzenthal 2010: 56 [male; female; distribution; in *annulicornis* group].

Sites in Itatiaia massif: PE 01, and PE 04.
Distribution: Brazil (PR, RJ, RS, SC).

86. *Polyplectropus brasiliensis* Chamorro-Lacayo and Holzenthal, 2010

Polyplectropus brasiliensis: Chamorro-Lacayo and Holzenthal 2010: 78 [Type locality: Brazil, Rio de Janeiro, Nova Friburgo, municipal water supply, 950 m; holotype depository: MZSP; male; in *bredini* group].

Sites in Itatiaia massif: CB 07.
Distribution: Brazil (RJ, SP).

87. *Polyplectropus hystricosus* Chamorro-Lacayo and Holzenthal, 2010

Polyplectropus hystricosus: Chamorro-Lacayo and Holzenthal 2010: 60 [Type locality:

Brazil, Minas Gerais, Parque Parque Nacional do Caparaó, Rio Caparaó, Vale Verde, 20°25'02"S 41°50'46"W, 1100 m; holotype depository: MZSP; male; in *annulicornis* group].

Sites in Itatiaia massif: CB 04, PR 12, and PR 14.

Distribution: Brazil (RJ, MG).

XIPHOCENTRONIDAE

88. *Xiphocentron (Antillotrichia) steffeni* (Marlier, 1964)

Xiphocentron steffeni: Marlier 1964: 6 [Type locality: Brazil, São Paulo, Boraceia; holotype depository: ISBN; male; in *Melanotrichia*] – Schmid 1982: 114 [comb. nov., as *Xiphocentron steffeni*] – Paprocki, Holzenthal and Blahnik 2004: 16 [checklist] – Dumas et al. 2009: 361 [checklist; distribution] – Dumas et al. 2010: 9 [distribution].

Sites in Itatiaia massif: AI 04, CB 15, PE 03, and PE 04.

Distribution: Brazil (MG, RJ, SP).

Additional records

The species records listed below were kindly provided by Dr. Ralph W. Holzenthal and Dr. Roger J. Blahnik, both of University of Minnesota, Minnesota, USA. The specimens are deposited in the University of Minnesota Insect Collection (UMSP), Minnesota, USA.

HYDROBIOSIDAE

89. *Atopsyche (Atopsaura) acahuana* Schmid, 1989

Atopsyche acahuana: Schmid 1989: 117 [Type locality: Brazil, Ed. ES [Espírito Santo], 15 Km SE Santa Teresa, Fazenda Santa Clara; holotype depository: MZSP; male; in *longipennis* group] – Blahnik, Paprocki and Holzenthal 2004: 4 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 7

[checklist] – Dumas et al. 2009: 364 [checklist].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo (22°27'02"S 44°36'49"W), 1300 m – UMSP. Distribution: Brazil (ES, RJ).

HYDROPSYCHIDAE

90. *Smicridea (Rhyacophylax) radula* Flint, 1974

Smicridea radula: Flint 1974c: 36 [Type locality: Costa Rica, San José, Río General, Pacuse; holotype depository: NMNH; male; female].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo (22°27'02"S 44°36'49"W), 1300 m – UMSP. Distribution: Brazil (RJ), Costa Rica, El Salvador, Guatemala, Honduras, Mexico, and Panama.

91. *Smicridea (Rhyacophylax) iguazu* Flint, 1983

Smicridea iguazu: Flint 1983: 60 [Type locality: Argentina, Pcia. Misiones, Río Iguazú, Camp Nañdu; holotype depository: NMNH; male] – Marinoni and Almeida 2000: 286 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 9 [checklist] – Dumas et al. 2009: 359 [checklist].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Taquaral (22°27'15"S 44°36'34"W), 1300 m; PNI, Rio Campo Belo (22°27'02"S 44°36'49"W), 1300 m – UMSP. Distribution: Argentina, and Brazil (MG, PR, RJ, SC).

LEPTOCERIDAE**92. *Nectopsyche pantosticta* Flint, 1983**

Nectopsyche pantosticta: Flint 1983: 71 [Type locality: Argentina, Pcia. Misiones, Arroyo Coatí, 15 Km E San José; holotype depository: NMNH; male] – Blahnik, Paprocki and Holzenthal 2004: 5 [distribution] – Paprocki, Holzenthal and Blahnik 2004: 13 [checklist] – Dumas et al. 2009: 369 [checklist].

Sites in Itatiaia massif: Rio de Janeiro, Itatiaia municipality, PNI, Rio Campo Belo (22°27'02"S 44°36'49"W), 1300 m; PNI, Rio Campo Belo, trail to Véu da Noiva (22°25'42"S 44°37'10"W), 1310 m; PNI, tributary to Rio Taquaral (22°26'41"S 44°36'28"W), 1320 m – UMSP.

Distribution: Argentina, and Brazil (RJ, RS).

Discussion

Itatiaia massif caddisfly fauna represents a significant proportion of Brazilian known fauna. Considering that Brazil has approximately 550 described species (Santos et al. 2011), the fauna of Itatiaia massif comprises about 17% of the total number of species known from the country. This species richness is even more significant considering the minute surface area of Itatiaia massif and the total number of species found in comparison with other South American countries (Argentina, 250 spp.; Venezuela, 240 spp.; Peru, 224 spp.; Chile, 214 spp.; Colombia, 205 spp.; Surinam, 124 spp.) (Angrisano 1995b; Flint 1974b; Flint 1996; Johanson and Holzenthal 2004; Muñoz-Quesada 2000; Rojas 2006). However, it is important to emphasize that several of these countries have deficient knowledge of caddisflies fauna, with most biomes poorly sampled.

Such high species richness present in Itatiaia massif may be explained by the singular features of Mantiqueira mountain range. The mountaintops of Mantiqueira present a cold, temperate climate within a tropical zone and a temperate vegetation island surrounded by a tropical rain forest. Besides that, rocky outcrops abruptly raised from surrounding plains (inselbergs) have a strong influence on the distribution and abundance of biodiversity worldwide, being biological hotspots and supporting unique biotic communities. Moreover, these areas are characterized by high levels of endemism (Porembski et al. 1997; Porembski and Barthlott 2000). This may be attributed to three main factors that have acted at different time scales: biotic evolution in response to climatic and geological history; species adaptations to environmental constraints; and biotic exchanges with the surrounding lowlands (Sarmiento 2002).

Furthermore, 13 species are endemic to Itatiaia massif. This notable mark may reflect the fact that most distributional records of Neotropical caddisflies species are represented by incidental collections, with many species known only from the original site where they were described (Blahnik et al. 2004). However, some of these endemisms are remarkable.

A few conclusive empirical works have focused on the Southern Hemisphere biogeographical patterns (Sanmartín and Ronquist 2004; Giribet and Edgecombe 2006; Daugeron et al. 2009). Two climatic biotic provinces are recognized within Gondwana: the northern Tropical Gondwana, which includes northern South America, Africa, Madagascar, India, New Guinea, and northern Australia; and the southern Temperate Gondwana, which includes southern South

America, South Africa, Australia, Antarctica, New Caledonia, and New Zealand (Sanmartín and Ronquist 2004). In the Neotropical Trichoptera, some of these affinities are discussed by de Moor and Ivanov (2008) and Holzenthal and Blahnik (2010).

Some interesting patterns of species distribution occur in Itatiaia massif and other areas of Mantiqueira mountain range. Some endemic species encountered do not seem to be related to any other species in South America, being ancient relicts of prerule Gondwanan fauna (Flint 1976). The genus *Neoaatriplectides* Holzenthal, 1997 contains two species, one in the Mantiqueira mountain range – *N. desiderata* Dumas and Nessimian, 2009 – and other in tropical Andes – *N. froehlichii* Holzenthal, 1997. The other genera of Atripectididae, *Atripectides* Mosely, 1936 and *Hughscottiella* Ulmer, 1910, possess representatives in Australia and the Seychelles Islands, respectively (Holzenthal 1997). Therefore, the family Atripectididae contains Tropical Gondwana components. Likewise, the monobasic genera *Neoathripsodes* Holzenthal, 1989 (Leptoceridae) and *Barypenthus* Burmeister, 1839 (Odontoceridae) show affinities with South African genera (Holzenthal 1989; de Moor 1997). In contrast, Holzenthal and Blahnik (2010) recently described *Notidobiella brasiliensis* Holzenthal and Blahnik, 2010 from Parque Estadual de Campos de Jordão, a neighboring area of the Itatiaia massif at the Mantiqueira mountain range. The genus *Notidobiella* Schmid, 1955 (Sericostomatidae) has three species previously described for southern Chile, what may lead to think in a Temperate Gondwana pattern of distribution. However, the presence of two additional recently described species from Brazilian Amazon basin and Ecuador – *N. amazoniana* Holzenthal and Blahnik, 2010 and *N.*

ecuadorensis Holzenthal and Blahnik, 2010, respectively – may represent an older occurrence in the region, followed by recent dispersal from southern South America to north and its subsequent diversification (Holzenthal and Blahnik 2010).

Some other curious distributional patterns can be observed in *Antarctoecia brasiliensis* Huamantínco and Nessimian, 2003, the single species of Limnephilidae recorded from Brazil. The genus *Antarctoecia* Ulmer, 1907 shows a disjunct distribution, with *A. nordenskiöldii* (Ulmer, 1907), described from the Puna de Jujuy (Argentina) in elevations above 4,500 m, and *A. brasiliensis*, found only at Itatiaia plateau above 1,800 m. Biogeographical affinities have been recognized between the fauna and flora of southeastern Brazilian mountains and the Andean-Patagonian region (Illies 1969; Sick 1985; Safford 1999; Behling 2002). It is assumed that Brazilian southeastern mountains were colonized by Andean elements during Pleistocene glaciations, when climatic-vegetational connections between both regions were similar (Simpson-Vuilleumier 1971). During interglacial periods, those montane habitats would have retreated to cooler upland areas, explaining the isolated occurrence of some Andean-Patagonian taxa on southeastern Brazilian mountaintops (Simpson 1979; Safford 1999). Holzenthal and Blahnik (2010) claim that the distributional pattern of *Notidobiella* and *Antarctoecia*, like other with Patagonian and Neotropical distribution, are probably one and the same.

de Moor and Ivanov (2008) propose five biogeographical patterns. One of them is a two-way exchange of Neotropic and Nearctic faunas. It may be the case of *Anastomoneura guaybae* Huamantínco and Nessimian, 2004

(Odontoceridae), the only species within the genus, which larvae share more similarities with the North American genus *Nerophilus* Banks, 1899 and *Namamyia* Banks, 1905 (Dumas and Nessimian 2006).!

Itatiaia massif is located in the Atlantic Forest biome, which is classified as one of the 25 biodiversity hotspots around the world. However, less than 8% of the original forest of this biome now remains, and it occurs mostly in isolated remnants scattered throughout a landscape dominated by agricultural uses. Despite these disturbances, Atlantic Forest is still extremely rich in biodiversity, sheltering a significant proportion of total national fauna and flora, with high levels of endemism (Dean 1997; Joly and Bicudo 1998; Myers et al. 2000). Although part of Itatiaia massif is inserted in protected areas – Parque Nacional do Itatiaia and Área de Proteção Ambiental da Mantiqueira – there are constant losses of its vegetation and fauna by anthropic pressures, such as fire and livestock grazing.

The results of this study, allied with other faunistic and floristic works (Geise et al. 2004; Sendas and Araújo 2004; Ribeiro et al. 2007; Monné et al. 2009; among others), emphasize the importance of better efforts to preservation and conservation of Itatiaia massif. Furthermore, considering the degree of threat in the Atlantic Forest in this area and its high biological diversity, including that of Trichoptera, the conservation of these remnants and incentives to continue studying native species of fauna and flora are therefore highly recommended. The creation of new conservation units, or the enlargement of existing ones, is necessary to better preserve the biodiversity and to help prevent further deforestation.

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Editor's note

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References

- Angrisano EB. 1994. Contribucion al conocimiento de los Trichoptera de Uruguay. I. Familias Ecnomidae y Polycentropodidae. *Revista de la Sociedad Entomologica Argentina* 53: 129-139.
- Angrisano EB. 1995a. Insecta Trichoptera. In: Lopretto EC, Tell G, Editors. *Ecosistemas de Aguas Continentales: Metodologias para su Estudio, tomo III*. pp. 897-1401. Ediciones Sur.
- Angrisano EB. 1995b. El Orden Trichoptera en la Argentina y paises limitrofes. *Physis (Buenos Aires), Secc. B* 50(118-119): 19-25.
- Angrisano EB. 1997. Los Trichoptera del Uruguay. III. Familias Philopotamidae, Hydrobiosidae, y Glossosomatidae. *Revista de la Sociedad Entomologica Argentina* 56: 55-58.
- Almeida GL, Flint Jr OS. 2002. Five new species of *Smicridea* McLachlan (Trichoptera, Hydropsychidae) from Brazil. *Revista Brasileira de Zoologia* 19(3): 767-775.
- Almeida GL, Marinoni L. 2000. Abundância e sazonalidade das espécies de Leptoceridae (Insecta, Trichoptera) capturadas com armadilha luminosa no Estado do Paraná, Brasil. *Revista Brasileira de Zoologia* 17(2): 347-359.
- Banks N. 1913. Synopses and Descriptions of Exotic Neuroptera. *Transactions of the American Entomological Society* 39: 201-242.
- Banks N. 1920. New neuropteroid insects. *Bulletin of the Museum of Comparative Zoology* 64: 299-362.
- Banks N. 1924. Descriptions of new neuropteroid insects. *Bulletin of the Museum of Comparative Zoology* 65: 421-455.
- Barros MIA. 2003. *Caracterização da visitação, dos visitantes e avaliação do impactos ecológicos e recreativos do planalto do Parque Nacional do Itatiaia*. Master's thesis. Escola Superior de Agricultura Luiz de Queiroz/USP.
- Behling H. 2002. South and southeast Brazilian grasslands during late Quaternary times: a synthesis. *Palaeogeography, Palaeoclimatology, Palaeoecology* 177: 19-27.
- Betten C. 1934. The caddisflies or Trichoptera of New York State. *New York State Museum Bulletin* 292: 1-575.
- Betten C, Mosely ME. 1940. *The Francis Walker Types of Trichoptera in the British Museum*. British Museum.
- Blahnik RJ. 1995. New species of *Smicridea* (subgenus *Smicridea*) from Costa Rica, with a revision of the *fasciatella* complex (Trichoptera: Hydropsychidae). *Journal of North American Benthological Society* 14(1): 84-107.
- Blahnik RJ. 1997. Systematics of *Chimarrita*, a new subgenus of *Chimarra* (Trichoptera: Philopotamidae). *Systematic Entomology* 22: 199-243.
- Blahnik RJ. 2002. Systematic of *Otarrha*, a new neotropical subgenus of *Chimarra* (Trichoptera: Philopotamidae). *Systematics Entomology* 27: 65-130.

- Blahnik RJ. 2005. *Alterosa*, a new caddisfly genus from Brazil (Trichoptera: Philopotamidae). *Zootaxa* 991: 1-60.
- Blahnik RJ, Holzenthal RW. 2008. Revision of the Mexican and Central American species of *Mortoniella* (Trichoptera: Glossosomatidae: Protoptilinae). *Zootaxa* 1711: 1-72.
- Blahnik RJ, Holzenthal RW. 2011. Revision of the austral South American species of *Mortoniella* (Trichoptera: Glossosomatidae: Protoptilinae). *Zootaxa* 2851: 1-75.
- Blahnik RJ, Paprocki H, Holzenthal RW. 2004. New distribution and species records of Trichoptera from Southern and Southeastern Brazil. *Biota Neotropica* 4(1): 1-6.
- Botosaneanu L. 1980. Trichoptères adultes de Cuba colléctes par les zoologistes cubains (Trichoptera). *Mitteilungen der Münchner Entomologischen Gesellschaft* 69: 91-116.
- Botosaneanu L, Alkins-koo M. 1993. The caddis flies (Insecta: Trichoptera) of Trinidad and Tobago, West Indies. *Bulletin de l'Institute Royal des Sciences Naturelles de Belgique, Entomologie* 63: 5-45.
- Botosaneanu L, Flint Jr OS. 1982. On some Trichoptera from Northern Venezuela and Ecuador (Insecta). *Beaufortia* 32(2): 13-26.
- Burmeister EG. 1883. Vorläufige Erfassung einiger Von J.B. v. Spix und C.F.Ph v. Martius in Brasilien gesammelter Insektengruppen aus der Zoologischen Staatssammlung München, die von M. Perty bearbeitet wurden. *Spixiana* 9: 265-281.
- Burmeister EG. 1889. Der Lectotypus von *Macronema maculatum* (Pewrty, 1833) (Trichoptera: Hydropsychidae). *Spixiana* 11: 259-262.
- Burmeister H. 1839. *Habdbuch der Entomologie*. Theod. Chr. Friedr. Enslin.
- Calor AR. 2009. Considerações acerca da filogenia de Trichoptera Kirby, 1813: da análise dos dados para as hipóteses ou dos cenários para os dados. *EntomoBrasilis* 2(1): 1-10.
- Calor AR, Froehlich CG. 2008. Description of the immature stages of *Notalina morsei* Holzenthal, 1986 (Trichoptera: Leptoceridae) and an updated key to larvae of Neotropical Leptoceridae genera. *Zootaxa* 1779: 45-54.
- Calor AR, Holzenthal RW, Amorim DS. 2006. Phylogenetic analysis of *Notalina* (*Neotalina*) Holzenthal (Trichoptera: Leptoceridae), with the description of two new species from southeastern Brazil. *Zootaxa* 1131: 33-48.
- Conservation International of Brazil. 2000. Avaliação e ações prioritárias para a conservação da biodiversidade da Mata Atlântica e Campos Sulinos. MMA/SBF.
- Daugeron C, D'Haese CA, Plant AR. 2009. Phylogenetic systematics of the gondwanan *Empis macrorrhynca* group (Diptera, Empididae, Empidinae). *Systematic Entomology* 34: 635-648.
- de Moor FC. 1997. An unusual caddisfly larva from South Africa, a possible member of the Triplectidinae (Trichoptera: Leptoceridae). In: Holzenthal RW, Flint Jr OS, Editors. *Proceedings of the 8th International Symposium on Trichoptera*. pp. 323-330. Ohio Biological Survey.

- de Moor FC, Ivanov VD. 2008. Global diversity of caddiflies (Trichoptera: Insecta) in freshwater. *Hydrobiologia* 595(1): 393-407.
- Dean W. 1997. *With broadax and fireband: the destruction of the Brazilian Atlantic Forest*. University of California Press.
- Denning DG. 1947. New species of Trichoptera from United States. *Entomological News* 58: 249-257.
- Denning DG, Sykora J. 1968. Three new species of Trichoptera from Brazil. *Bëitragë zur Neotropischen Fauna* 5(3): 172-177.
- Denning DG, Resh VH, Hogue HL. 1983. New species of *Phylloicus* and a new Neotropical genus of Calamoceratidae (Trichoptera). *Aquatic Insects* 5: 181-191.
- Dumas LL, Nessimian JL. 2006. Description of the immature stages of *Anastomoneura guahybae* Huamantínco and Nessimian, 2004 (Trichoptera: Odontoceridae), with a new record for the genus and keys to larvae and pupae of Neotropical genera. *Zootaxa* 1362: 43-53.
- Dumas LL, Nessimian JL. 2008. A new species of *Neotriplectides* Holzenthal, 1997 (Insecta: Trichoptera: Atriplectididae), from Brazil, including description of the pupa of the genus. *Zootaxa* 1773: 63-68.
- Dumas LL, Nessimian JL. 2009. Description of two new species of *Marilia* Müller (Trichoptera, Odontoceridae) from Southeastern Brazil, including the description of the female of *Marilia major* Müller. *Revista Brasileira de Entomologia* 53(3): 344-348.
- Dumas LL, Nessimian JL. 2010a. A dwarfish new species of *Phylloicus* (Trichoptera: Calamoceratidae) from Southeastern Brazil. *Zoologia* 27(2): 307-312.
- Dumas LL, Nessimian JL. 2010b. A new long-horned caddisfly in the genus *Triplectides* Kolenati (Trichoptera: Leptoceridae) from the Itatiaia massif, Southeastern Brazil. *Neotropical Entomology* 39(6): 949-951.
- Dumas LL, Nessimian JL. 2011. A new species of *Cernotina* (Trichoptera, Polycentropodidae) from the Atlantic Forest, Rio de Janeiro State, Southeastern Brazil. *Revista Brasileira de Entomologia* 55(1): 31-34.
- Dumas LL, Jardim GA, Santos APM, Nessimian JL. 2009. Tricópteros (Insecta: Trichoptera) do Estado do Rio de Janeiro: Lista de espécies e novos registros. *Arquivos do Museu Nacional* 67(3-4): 355-376.
- Dumas LL, Santos APM, Jardim GA, Ferreira Jr N, Nessimian JL. 2010. Insecta, Trichoptera: New records from Brazil and other distributional notes. *Check List* 6(1): 7-9.
- Flint Jr OS. 1963. Studies of Neotropical caddis flies, I: Rhyacophilidae and Glossosomatidae (Trichoptera). *Proceedings of the United States National Museum* 114(3464): 453-493.
- Flint Jr OS. 1966. Studies of Neotropical caddis flies, II: types of some species described by Ulmer and Brauer. *Proceedings of the United States National Museum* 120(3559): 1-21.
- Flint Jr OS. 1967. Studies of Neotropical caddis flies, V: types of the species described

by Banks and Hagen. *Proceedings of the United States National Museum* 123(3619): 1-37.

Flint Jr OS. 1971. Studies of Neotropical caddis flies, XII: Rhyacophilidae, Glossosomatidae, Philopotamidae, and Psychomyiidae from the Amazon Basin (Trichoptera). *Amazoniana* 3(1): 1-67.

Flint Jr OS. 1972. Studies of Neotropical caddis flies, XIV: on a collection from Northern Argentina. *Proceedings of the Biological Society of Washington* 85(17): 223-248.

Flint Jr OS. 1974a. Studies of Neotropical caddis flies, XVIII: new species of Rhyacophilidae and Glossosomatidae (Trichoptera). *Smithsonian Contributions to Zoology* 169: 1-30.

Flint Jr OS. 1974b. Studies of Neotropical caddis flies, XV: the Trichoptera of Surinam. *Studies on the Fauna of Surinam and other Guianas* 14(55): 1-151.

Flint Jr OS. 1974c. Studies of Neotropical caddis flies, XVII: the genus *Smicridea* from North and Central America (Trichoptera: Hydropsychidae). *Smithsonian Contributions to Zoology* 167: 1-65.

Flint Jr OS. 1976. A preliminary report of studies on neotropical Trichoptera. In: Malicky H, Editor. *Proceedings of the 1st International Symposium on Trichoptera*. pp. 47-48. Dr. W. Junk Publishers, The Hague.

Flint Jr OS. 1978. Studies of Neotropical caddis flies, XXII: Hydropsychidae of the Amazon Basin (Trichoptera). *Amazoniana* 6: 373-421.

Flint Jr OS. 1981. Studies of Neotropical caddis flies, XXVIII: the Trichoptera of Río Limon basin, Venezuela. *Smithsonian Contributions to Zoology* 330: 1-60.

Flint Jr OS. 1982. Trichoptera of the Area Platense. *Biologia Acuatica* 2: 1-70.

Flint Jr OS. 1983. Studies of Neotropical caddis flies, XXXIII: new species from Austral South America (Trichoptera). *Smithsonian Contributions to Zoology* 377: 1-100.

Flint Jr OS. 1991. Studies of Neotropical caddis flies, XLV: the taxonomy, phenology, and faunistics of the Trichoptera of Antioquia, Colombia. *Smithsonian Contributions to Zoology* 520: 1-113.

Flint Jr OS. 1996. The Trichoptera collected on the expeditions to Parque Manu, Madre de Dios, Peru. In: Wilson DE, Sandoval A, Editors. *Manu: The Biodiversity of Southeastern Peru*. pp. 369-430. Smithsonian Institution Press.

Flint Jr OS. 1998. Studies of Neotropical caddis flies, LIII: a taxonomic revision of the subgenus *Curgia* of the genus *Chimarra* (Trichoptera: Philopotamidae). *Smithsonian Contributions to Zoology* 594: 1-131.

Flint Jr OS. 2008. Studies of Neotropical caddis flies, LXI: new species of *Leptonema* Guérin (Trichoptera: Hydropsychidae). *Transactions of the American Entomological Society* 110(2): 456-469.

Flint Jr OS, Bueno-Soria J. 1982. Studies of Neotropical caddis flies, XXXII: the immature stages of *Macronema variipene* Flint and Bueno, with the division of *Macronema* by the resurrection of *Macrostemum*

- (Trichoptera: Hydropsychidae). *Proceedings of the Biological Society of Washington* 95(2): 358-370.
- Flint Jr OS, Denning DG. 1989. Studies of Neotropical caddis flies, XLI: new species and records of *Austrotinodes* (Trichoptera: Psychomyiidae). *Pan-Pacific Entomologist* 65(2): 108-122.
- Flint Jr OS, Holzenthal RW, Harris SC. 1999. *Catalog of the Neotropical caddisflies (Insecta: Trichoptera)*. Ohio Biological Survey.
- Flint Jr OS, McAlpine F, Ross HH. 1987. A revision of the genus *Leptonema* Guérin (Trichoptera: Hydropsychidae: Macronematinae). *Smithsonian Contributions to Zoology* 450: 1-193.
- Geise L, Pereira LG, Bossi DEP, Bergallo HG. 2004. Pattern of elevational distribution and richness of non-volants mammals in Itatiaia National Park and its surroundings, in Southeastern Brazil. *Brazilian Journal of Biology* 64(3B): 599-612.
- Giribet G, Edgecombe GD. 2006. The importance of looking at small-scale patterns when inferring Gondwanan biogeography: a case study of the centipede *Paralamyctes* (Chilopoda, Lithobiomorpha, Henicopidae). *Biological Journal of the Linnean Society* 89: 65-78.
- Guérin FEM. 1843. Insects. In: *Iconographie du Règne Animal du Cuvier*. J.B. Baillière.
- Hagen H. 1861. *Synopsis of the Neuroptera of North America*. Smithsonian Miscellaneous Collections.
- Hamilton SW, Holzenthal RW. 2011. Twenty-four new species of *Polycentropus* (Trichoptera, Polycentropodidae) from Brazil. *Zookeys* 76: 1-53.
- Harris SC, Holzenthal RW. 1994. Hydroptilidae (Trichoptera) of Costa Rica and Neotropics: systematics of the genus *Byrsopteryx* Flint (Stactobiini). *Journal of the New York Entomological Society* 102: 154-192.
- Holzenthal RW. 1986. The Neotropical species of *Notalina*, a southern group of long-horned caddisflies (Trichoptera: Leptoceridae). *Systematic Entomology* 11: 61-73.
- Holzenthal RW. 1988a. Catalogo Sistemático de los Tricópteros de Costa Rica (Insecta: Trichoptera). *Brenesia* 29: 51-82.
- Holzenthal RW. 1988b. Studies on Neotropical Leptoceridae (Trichoptera), VIII: the genera *Atanatolica* Mosely and *Grumichella* Müller (Triplectidinae: Grumichellini). *Transactions of the American Entomological Society* 114: 71-127.
- Holzenthal RW. 1988c. Systematics of Neotropical *Triplectides* (Trichoptera: Leptoceridae). *Annals of the Entomological Society of America* 81(2): 187-208.
- Holzenthal RW. 1989. Studies in Neotropical Leptoceridae (Trichoptera), IX: a new genus and species from Southeastern Brazil. *Aquatic Insects* 11(1): 29-32.
- Holzenthal RW. 1995. The caddisfly genus *Nectopsyche*: new gemma group species from Costa Rica and the Neotropics (Trichoptera: Leptoceridae). *Journal of the North American Benthomological Society* 14(1): 61-83.

- Holzenthal RW. 1997. The caddisfly (Trichoptera) family Atriplectididae in the Neotropics. In: Holzenthal RW, Flint Jr OS, Editors. *Proceedings of the 8th International Symposium on Trichoptera*. pp. 157-165. Ohio Biological Survey.
- Holzenthal RW, Almeida GL. 2003. New species of Polycentropodidae (Trichoptera) from Southeastern Brazil. *Proceedings of the Entomological Society of Washington* 105(1): 22-29.
- Holzenthal RW, Blahnik RJ. 2010. Systematics of the Neotropical caddisfly genus *Notidobiella* Schmid (Trichoptera, Sericostomatidae), with the description of 3 new species. *Zookeys* 71: 23-47.
- Holzenthal RW, Flint Jr OS. 1995. Studies of Neotropical caddis flies, LI: systematics of the Neotropical genus *Contulma* (Trichoptera: Anomalopsychidae). *Smithsonian Contributions to Zoology* 575: 1-59.
- Holzenthal RW, Harris SC. 1992. Hydroptilidae (Trichoptera) of Costa Rica: the genus *Oxyethira* Eaton. *Journal of the New York Entomological Society* 100(1): 155-177.
- Holzenthal RW, Blahnik RJ, Prather AL, Kjer KM. 2007. Order Trichoptera Kirby, 1813 (Insecta), Caddisflies. *Zootaxa* 1668: 639-698.
- Huamantincó AA, Nessimian JL. 2003. A new species of *Antarctoecia* Ulmer, 1907 (Trichoptera: Limnephilidae) from Southeastern Brazil. *Aquatic Insects* 25(3): 225-231.
- Huamantincó AA, Nessimian JL. 2004a. Description of the larva and pupa of *Antarctoecia brasiliensis* Huamantincó and Nessimian, 2003 (Trichoptera; Limnephilidae). *Zootaxa* 490: 1-8.
- Huamantincó AA, Nessimian JL. 2004b. A new Neotropical genus and species of Odontocerinae (Trichoptera: Odontoceridae) from Southeastern Brazil. *Aquatic Insects* 26(3/4): 281-288.
- Huamantincó AA, Dumas LL, Nessimian JL. 2005. Description of larva and pupa of *Phylloicus abdominalis* Ulmer, 1905 (Trichoptera: Calamoceratidae). *Zootaxa* 1039: 19-26.
- IBAMA. 1994. *Plano de ação emergencial para o Parque Nacional do Itatiaia*. M.M.A. Instituto Brasileiro de Desenvolvimento Florestal, IBAMA.
- IBDF. 1982. *Plano de Manejo do Parque Nacional do Itatiaia*. M.M.A. Instituto Brasileiro de Desenvolvimento Florestal, IBDF/FBCN.
- Illies J. 1969. Biogeography and ecology of Neotropical freshwater insects, especially those from running waters. In: Fittkau EJ, Illies J, Klinge H, Schwabe GH, Siolli H, Editors. *Biogeography and Ecology of South America*, volume 2. pp. 685-708. Monograph Biology Dr. W. Junk, The Hague.
- Jacquemart S. 1962. Deux Trichopteres nouveaux du Bresil. *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie* 38(12): 1-10.
- Johanson KA. 2002. Systematic revision of American *Helicopsyche* of the subgenus *Feropsyche* (Trichoptera: Helicopsychidae). *Insect Systematic and Evolution* 60: 1-147.

- Johanson KA, Holzenthal RW. 2004. Thirteen new species and new distribution records of *Helicopsyche* (*Feropsyche*) Johanson from Venezuela (Trichoptera: Helicopsychidae). *Zootaxa* 711: 1-40.
- Joly CA, Bicudo CE. 1998. *Biodiversidade do Estado de São Paulo, Brasil: síntese do conhecimento do final do século XX, volume 2 e 6*. Fapesp.
- Kjer KM, Blahnik RJ, Holzenthal RW. 2001. Phylogeny of Trichoptera (Caddisflies): Characterization of signal and noise within multiple datasets. *Systematic Biology* 50(6): 781-816.
- Kjer KM, Blahnik RJ, Holzenthal RW. 2002. Phylogeny of caddisflies (Insecta, Trichoptera). *Zoologica Scripta* 31: 83-91.
- Magro TC. 1999. *Impactos do uso público em uma trilha no planalto do parque Nacional do Itatiaia*. Ph.D. Thesis. Escola de Engenharia de São Carlos/USP.
- Marinoni, L., Almeida GL. 2000. Abundância e sazonalidade das espécies de Hydropsychidae (Insecta, Trichoptera) capturadas em armadilha luminosa no Estado do Paraná, Brasil. *Revista Brasileira de Zoologia* 17(1): 282-299.
- Marlier G. 1964. Sur trois Trichoptères nouveaux recueillis en Amérique du Sud par le Professeur J. Illies. *Bulletin Institut Royal des Sciences Naturelles de Belgique* 40(6): 1-15.
- Monné ML, Monné MA, Mermudes JRM. 2009. Inventário das espécies de Cerambycinae (Insecta, Coleoptera, Cerambycidae) do Parque Nacional do Itatiaia, RJ, Brasil. *Biota Neotropica* 9(3): 283-312.
- Morse JC. 1997. Phylogeny of Trichoptera. *Annual Review of Entomology* 42: 427-450.
- Morse JC. 2011. The Trichoptera world checklist. *Zoosymposia* 5: 372-380.
- Mosely ME. 1933. *A revision of the genus Leptonema*. British Museum.
- Mosely ME. 1936. A revision of the Triplectidinae, a subfamily of the Leptoceridae (Trichoptera). *Transactions of the Royal Entomological Society of London* 85: 91-130.
- Mosely ME. 1939a. The Brazilian Hydroptilidae (Trichoptera). *Novitates Zoologicae* 41: 217-239.
- Mosely ME. 1939b. *Leptonema pallidum* Guérin (Trichoptera). *Annals and Magazine of Natural History* 4(11): 310-314.
- Müller F. 1879. Notes on the case of some south Brazilian Trichoptera. *Transactions of the Entomological Society of London* 1879: 131-144.
- Müller F. 1880. Sobre as casas construídas pelas larvas de insectos Trichopteros da Província de Santa Catharina. *Arquivos do Museu Nacional* 3: 99-134, 210-214.
- Müller F. 1921. Briefe und noch nicht veröffentlichte Abhandlungen aus dem Nachlass. In: Möller, Editor. *Fritz Müller: Werke, Briefe und Leben*. pp. 383-642. G. Fisher.

- Muñoz-Quesada F. 2000. Especies del Orden Trichoptera (Insecta) en Colombia. *Biota Colombiana* 1(3): 267-288.
- Myers N, Mittermier RA, Mittermier CG, Fonseca GAB, Kent J. 2000. Biodiversity hotspots for conservation priorities. *Nature* 403: 853-858.
- Navás RPL. 1916a. Neurópteros Sudamericanos. Tercera Serie. *Brotéria, Série Zoológica* 14: 14-35.
- Navás RPL. 1916b. Neuroptera Nova Americana. Series I, II. *Memoire della Pontificia Accademia de Ciencias y Artes de Barcelona, Tercera Epoca* 13: 393-366.
- Navás RPL. 1920. Insectos Sudamericanos (1^a, 2^a y 3^a serie). *Annales de la Sociedad Científica Argentina* 90: 33-72.
- Navás RPL. 1922. Insectos nuevos o poco conocidos. *Memoirias de la Real Academia de Ciencias y Artes de Barcelona, Tercera Epoca* 17: 383-400.
- Navás RPL. 1927. Neuropteren, Megalopteren, Plecopteren und Trichopteren aus dem Deutsche Entomologischen Institut (Berlin-Dahlem). *Entomologischen Mitteilungen* 16: 37-43.
- Navás RPL. 1930. Insectos Neotrópicos, 6^a serie (1). *Revista Chilena de Historia Natural* 34: 62-75.
- Navás RPL. 1932. Insectos Suramericanos, Quinta Serie. *Revista de la Academia de Ciencias de Madrid* 29: 53-66.
- Navás RPL. 1933. Insectos de la Argentina. *Revista de la Academia de Ciencias Excultas, Físico-Químicas y Naturales de Zaragoza* 16: 87-120.
- Navás RPL. 1934. Insectos Suramericanos, Novena Serie. *Revista de la Academia de Ciencias de Madrid* 31: 155-184.
- Nessimian JL, Dumas LL. 2010. Description of the immature stages of *Leptonema tridens* (Insecta: Trichoptera: Hydropsychidae) from southeastern Brazil with notes on its biology. *Zoologia* 27(3): 465-471.
- Oliveira LG, Froehlich CG. 1996. Natural History of the Three Hydropsychidae (Trichoptera, Insecta) in a "Cerrado" Stream from Northeastern São Paulo, Brazil. *Revista Brasileira de Zoologia* 13(3): 755-762.
- Paprocki H, Holzenthal RW. 2002. A review of the brazilian genus *Barypenthus* Burmeister (Trichoptera: Odontoceridae). In: Dathe HH, Editor. *Proceedings of 10th International Symposium on Trichoptera*. pp. 223-230. Nova Supplementa Entomologica 15.
- Paprocki H, Holzenthal RW, Blahnik RJ. 2004. Checklist of the Trichoptera (Insecta) of Brazil I. *Biota Neotropica* 4(1): 1-22.
- Perty JAM. 1830-1834. *Insecta Brasiliensia*. In: Martius KFP, Editor. *Delectus Animalium Articulatorum*. Impresis Editoris.
- Pes AMO, Hamada N, Nessimian JL. 2005. Chaves de identificação de larvas para famílias e gêneros de Trichoptera (Insecta) da Amazônia Central, Brasil. *Revista Brasileira de Entomologia* 49(2): 181-204.
- Pictet FJ. 1836. Description de quelques nouvelles espèces de Névrópteres du Musée de Genève. *Mémoires de la Societé de*

Physique et d'Histoire Naturelle de Genève 7: 399-404.

Porembski S, Barthlott W. 2000. *Inselbergs: Biotic Diversity of Isolated Rock Outcrops in Tropical and Temperate Regions*. Ecological Studies 146. Springer-Verlag.

Porembski S, Seine R, Barthlott W. 1997. Inselberg vegetation and the biodiversity of granite outcrops. *Journal of the Royal Society of Western Australia* 80: 193-199.

Prather AL. 2003. Revision of the Neotropical caddisfly genus *Phylloicus* (Trichoptera: Calamoceratidae). *Zootaxa* 275: 1-214.

Rambur MP. 1842. *Histoire Naturelle des Insectes Névroptères*. Librairie Encyclopédique de Roret.

Resh VH, Rosenberg DM. 1984. *The Ecology of Aquatic Insects*. Praeger Publishers.

Ribeiro KT, Medina BMO, Scarano FR. 2007. Species composition and biogeographic relations of the rock outcrop flora on the high plateau of Itatiaia, SE-Brazil. *Revista Brasileira de Botânica* 30(4): 623-639.

Robertson DR, Holzenthal RW. 2011. Revision of the Neotropical caddisfly genus *Itauara* Müller, 1888 (Trichoptera, Glossosomatidae). *Zookeys* 114: 41-100.

Rojas FA. 2006. Estado de conocimiento de los Trichoptera de Chile. *Gayana* 70(1): 65-71.

Ross HH. 1944. The caddis flies, or Trichoptera, of Illinois. *Illinois Natural History Survey Bulletin* 23(1): 1-326.

Ross HH. 1956. *Evolution and classification of the Mountain Caddisflies*. University of Illinois Press.

Sanmartín I, Ronquist F. 2004. Southern hemisphere biogeography inferred by event-based models: plant versus animal patterns. *Systematic Biology* 53: 216-243.

Santos APM, Nessimian JL. 2010. Description of a new species of *Byrsopteryx* (Trichoptera: Hydroptilidae) from Rio de Janeiro State, Brazil, including its immature stages. *Zootaxa* 2668: 44-54.

Santos APM, Henriques-Oliveira AL, Nessimian JL. 2009. New species and records of *Oxyethira* Eaton (Trichoptera: Hydroptilidae) from Amazonas State, Brazil. *Zootaxa* 2169: 35-44.

Santos APM, Dumas LL, Jardim GA, Nessimian JL. 2011. Brazilian Caddisflies: Checklist and Bibliography. Available online, sites.google.com/site/braziliancaddisflies

Safford HD. 1999. Brazilian páramos I. An introduction to the physical environment and vegetation of the campos de altitude. *Journal of Biogeography* 26: 693-712.

Sarmiento FO. 2002. Human drivers of landscape change: treelines dynamics in neotropical montology. *Ecotropicos* 15: 129-146.

Schmid F. 1949. Les Trichoptères de la Collection Navás. *Eos* 25: 305-426.

Schmid F. 1982. La famille des Xiphocentronides (Trichoptera: Annulipalpia). *Memoires de la Société Entomologique du Canada* 121: 1-125.

- Schmid F. 1984. Essai d'évaluation de la faune mondiale des Trichoptères. In: Morse JC, Editor. *Proceedings of the 4th International Symposium on Trichoptera*. pp. 337. Dr. W. Junk Publishers, Series Entomologica 30.
- Schmid F. 1989. Les hydrobiosides (Trichoptera, Annulipalpia). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique, Entomologie* 59: 1-154.
- Sendas FA, Araújo AFB. 2004. Inventário preliminar dos répteis do Parque Nacional do Itatiaia (PNI), Rio de Janeiro. *Revista Universidade Rural, Série Ciências da Vida, Seropédica, RJ, EDUR* 24(2): 151-157.
- Sick H. 1985. Observations on the Andean-Patagonian component of southeastern Brazil's avifauna. *Ornithological Monographs* 36: 233-237.
- Simpson BB. 1979. Quaternary biogeography of the high montane regions of South America. In: Duellman WE, Editor. *The South American Herpetofauna: its Origin, Evolution, and Dispersal*. pp. 157-188. University of Kansas.
- Simpson-Vuilleumier B. 1971. Pleistocene changes in the fauna and flora of South America. *Science* 173: 771-780.
- Thienemann A. 1905a. Trichopterenstudien II. *Rhyacopsyche hageni* Fr. Müller. *Zeitschrift für Wissenschaftliche Insektenbiologie* 1: 287-289.
- Thienemann A. 1905b. Biologie der Trichopteren-Puppe. *Zoologische Jahrbuch, Abteilungen für Systematik, Geographie und Biologia der Terre* 22: 489-574.
- Thienemann A. 1909. Thricopterenstudien V. Über die Metamorphose einiger Sudamerikanischer Trichopteren. *Zeitschrift für Wissenschaftliche Insektenbiologie* 5: 37-42, 125-132.
- Thomson RE, Holzenthal RW. 2010. New Neotropical species of the genus *Austrotinodes* Schmid (Trichoptera: Ecnomidae). *Zootaxa* 2437: 38-50.
- Ulmer G. 1905a. Zur Kenntniss aussereuropäische Trichopteren. *Stettiner Entomologische Zeitung* 66: 1-119.
- Ulmer G. 1905b. Neue und wenig bekannte aussereuropäische Trichopteren, hauptsächlich aus dem Wiener Museum. *Annalen des kaiserlich-königlich naturhistorischen Hofmuseums* 20: 59-98.
- Ulmer G. 1907a. Trichopteren. *Collections Zoologiques du Baron Edm. De Selys Longchamps* 6(1): 1-102.
- Ulmer G. 1907b. Monographie der Macronematinae. *Collections Zoologiques du Baron Edm. De Selys Longchamps* 6(2): 1-121.
- Ulmer G. 1907c. Neue Trichopteren. *Notes from the Leyden Museum* 29: 1-53.
- Ulmer G. 1913. Verzeichnis der südamerikanischen Trichopteren, mit bemerkungen über einzelne Arten. *Deutsche Entomologische Zeitschrift* 1913: 383-414.
- Ulmer G. 1957. Köcherfliegen (Trichopteren) von den Sunda Inseln. Teil III. *Archiv für Hydrobiologie* 23: 109-470.
- Ururahy JCC, Collares JER, Santos MM, Barreto RAA. 1983. Folhas SF.23/24 Rio de

Janeiro/ Vitória; geologia, geomorfologia, pedologia, vegetação e uso potencial da terra. In: *As regiões fitoecológicas, sua natureza e seus recursos econômicos. Estudo fitogeográfico*. Projeto RADAMBRASIL.

Walker F. 1852. *Catalogue of the Specimens of Neuropterous Insects in the Collection of the British Museum. Part I: Phryganides-Perlides*. British Museum.

Walker F. 1860. Characters of Undescribed Neuroptera in the Collection of W.W. Saunders, Esq., F.R.S., etc. *Transactions of the Entomological Society of London* 5(2): 176-199.

Wallace AR. 1876. *The geographical distribution of animals: with a study of the relations of living and extinct faunas as elucidating the past changes of the Earth's surface*. Macmillan London.

Wasmund AM, Holzenthal RW. 2007. A revision of the Neotropical caddisfly genus *Rhyacopsyche*, with the description of 13 new species (Trichoptera: Hydroptilidae). *Zootaxa* 1634: 1-59.

Weidner H. 1964. Die Entomologischen Sammling des Zoologischen Staatsinstitut und Zoologischen Museums Hamburg. *Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut* 62: 55-100.

Wiggins GB. 1996. *Larvae of the North American Caddisfly Genera (Trichoptera)*. University of Toronto Press.

Table 1. Sampling sites in Rio Aiuruoca drainage sub-basin.

Code	State / Municipality	Locality	Coordinates	Altitude (m)
AI 01	MG / Itamonte	Vargem Grande, Rio Aiuruoca	21° 18' 31.6" S 44° 41' 53.3" W	1450
AI 02	MG / Itamonte	Brejo da Lapa	22° 21' 33.5" S 44° 44' 14.6" W	2092
AI 03	MG / Itamonte	Small tributary of Rio Aiuruoca	22° 21' 41.0" S 44° 42' 26.5" W	2237
AI 04	MG / Itamonte	Rio Aiuruoca	22° 20' 56.9" S 44° 41' 06.6" W	1860
AI 05	MG / Itamonte	Small tributary of Rio Aiuruoca	22° 20' 37.0" S 44° 41' 32.9" W	1834
AI 06	MG / Itamonte	Small crenal stream	22° 19' 45.0" S 44° 40' 41.7" W	1947
AI 07	MG / Itamonte	Tributary of Rio Aiuruoca	22° 19' 56.7" S 44° 40' 58.9" W	1865
AI 08	MG / Itamonte	Small tributary of Rio Aiuruoca	22° 19' 38.6" S 44° 40' 37.9" W	1898
AI 09	MG / Itamonte	Stream	22° 19' 41.3" S 44° 40' 19.5" W	2043
AI 10	MG / Itamonte	Small stream	22° 19' 33.8" S 44° 40' 05.3" W	2060
AI 11	MG / Itamonte	Stream	22° 19' 37.2" S 44° 40' 12.4" W	2062

Table 2. Sampling sites in Rio Campo Belo drainage sub-basin.

Code	State / Municipality	Locality	Coordinates	Altitude (m)
CB 01	RJ / Resende	PNI, small tributary of Rio Campo Belo	22°22'39.6"S 44°41'37.2"W	2322
CB 02	RJ / Resende	PNI, Rio Campo Belo near Abrigo Rebouças	22°23'08.0"S 44°40'43.4"W	2550
CB 03	RJ / Resende	PNI, Rio Campo Belo	22°23'11.3"S 44°40'40.1"W	2365
CB 04	RJ / Resende	PNI, small tributary of Rio Campo Belo	22°23'22.0"S 44°40'25.5"W	2346
CB 05	RJ / Resende	PNI, Córrego Agulhas Negras	22°23'01.2"S 44°40'03.7"W	2400
CB 06	RJ / Itatiaia	PNI, Rio Campo Belo	22°27'17.3"S 44°36'37.5"W	705
CB 07	RJ / Itatiaia	PNI, Rio Taquaral	22°27'08.6"S 44°36'35.0"W	747
CB 08	RJ / Itatiaia	PNI, Rio Tapera	22°26'59.6"S 44°36'19.4"W	794
CB 09	RJ / Itatiaia	PNI, small tributary of Rio Campo Belo	22°27'11.5"S 44°36'15.0"W	789
CB 10	RJ / Itatiaia	PNI, small tributary of Rio Campo Belo in the track to Lago Azul	22°27'08.4"S 44°36'41.0"W	790
CB 11	RJ / Itatiaia	PNI, small tributary of Rio Campo Belo near Lago Azul	22°27'08.7"S 44°36'57.1"W	823
CB 12	RJ / Itatiaia	PNI, Rio Campo Belo, Lago Azul	22°27'02.4"S 44°36'52.0"W	804
CB 13	RJ / Itatiaia	PNI, small stream near park entrance	22°27'35.6"S 44°35'58.4"W	698
CB 14	RJ / Itatiaia	PNI, Córrego Simon	22°25'55.0"S 44°36'25.0"W	1149
CB 15	RJ / Itatiaia	PNI, Córrego Simon near small dam	22°26'11.4"S 44°36'19.6"W	1054
CB 16	RJ / Itatiaia	PNI, tributary of Rio Campo Belo	22°26'43.8"S 44°36'26.6"W	900
CB 17	RJ / Itatiaia	PNI, small tributary of Rio Campo Belo	22°25'50.4"S 44°37'16.4"W	998
CB 18	RJ / Itatiaia	PNI, small stream close to main park track	22°25'43.7"S 44°37'11.8"W	1000
CB 19	RJ / Itatiaia	PNI, Rio Campo Belo, Piscina do Maromba	22°25'46.2"S 44°37'09.7"W	957
CB 20	RJ / Itatiaia	PNI, Rio Campo Belo, track to Cachoeira Vêu da Noiva	22°25'42.0"S 44°37'11.2"W	982
CB 21	RJ / Itatiaia	PNI, Córrego do Maromba, Cachoeira Vêu da Noiva	22°25'38.2"S 44°37'05.8"W	1032
CB 22	RJ / Itatiaia	PNI, tributary of Rio Campo Belo	22°26'11.9"S 44°37'30.6"W	1036
CB 23	RJ / Itatiaia	PNI, track Vêu da Noiva to Abrigo Rebouças	22°25'46.2"S 44°37'09.7"W	1250

Table 3. Sampling sites in Rio Preto drainage sub-basin.

Code	State / Municipality	Locality	Coordinates	Altitude (m)
PR 01	RJ / Itatiaia	Visconde de Mauá, Rio Marimbondo	22°24'09.4"S 44°32'31.9"W	1025
PR 02	RJ / Itatiaia	Visconde de Mauá, Rio Marimbondo	22°21'42.2"S 44°35'13.9"W	950
PR 03	RJ / Itatiaia	Vale das Cruzes, PNI, small tributary of Rio das Cruzes	22°20'24.3"S 44°35'39.0"W	1297
PR 04	RJ / Itatiaia	Vale das Cruzes, small tributary of Rio das Cruzes	22°20'25.2"S 44°35'41.9"W	1316
PR 05	RJ / Itatiaia	Vale das Cruzes, tributary of Rio das Cruzes	22°20'10.7"S 44°34'57.5"W	1188
PR 06	RJ / Itatiaia	Vale das Cruzes, Rio das Cruzes	22°20'02.4"S 44°34'28.9"W	1132
PR 07	RJ / Itatiaia	Vale do Pavão, tributary of Córrego do Pavão	22°20'29.7"S 44°34'15.3"W	1130
PR 08	RJ / Itatiaia	Vale do Pavão, Córrego do Pavão	22°20'21.4"S 44°34'01.2"W	1105
PR 09	RJ / Itatiaia	Maringá, Rio Preto	22°19'41.2"S 44°34'44.8"W	1109
PR 10	RJ / Itatiaia	Maromba, Rio Preto	22°19'22.1"S 44°35'31.5"W	1148
PR 11	RJ / Itatiaia	Maromba, small tributary of Rio Preto	22°19'31.6"S 44°36'00.0"W	1190
PR 12	RJ / Itatiaia	Maromba, tributary of Rio Preto	22°19'67.9"S 44°36'56.8"W	1509
PR 13	RJ / Itatiaia	Maromba, Rio Preto, Escorrega	22°19'48.8"S 44°36'53.9"W	1357
PR 14	MG / Bocaina de Minas	Córrego do Morro Cavado	22°18'47.2"S 44°36'48.8"W	1240

Table 4. Sampling sites in Rio do Salto drainage sub-basin.

Code	State / Municipality	Locality	Coordinates	Altitude (m)
SA 01	RJ / Resende	Border between RJ/SP, Rio do Salto	22°26'31.5"S 44°43'53.3"W	789
SA 02	SP / Queluz	Small tributary of Rio do Salto	22°26'30.0"S 44°43'57.0"W	803
SA 03	RJ / Resende	Ribeirão do Palmital	22°25'26.1"S 44°44'22.6"W	973
SA 04	RJ / Resende	Córrego da Lapa	22°24'99.7"S 44°45'31.1"W	1298
SA 05	MG / Itamonte	Waterfall on Km 461 of BR 354 road	22°21'48.0"S 44°46'29.0"W	1555

Table 5. Sampling sites in Rio das Pedras drainage sub-basin.

Code	State / Municipality	Locality	Coordinates	Altitude (m)
PE 01	RJ / Itatiaia	Penedo, Rio das Pedras, Três Bacias	22°24'34.8"S 44°33'03.5"W	708
PE 02	RJ / Itatiaia	Penedo, Rio das Pedras, Cachoeira de Deus	22°24'59.1"S 44°32'51.4"W	627
PE 03	RJ / Itatiaia	Penedo, small tributary of Rio das Pedras	22°25'02.0"S 44°32'50.0"W	618
PE 04	RJ / Itatiaia	Penedo, Rio Palmital	22°25'34.0"S 44°32'52.0"W	637
PE 05	RJ / Itatiaia	Penedo, small tributary of Rio Palmital	22°25'41.0"S 44°32'51.0"W	601