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Check List
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Lists of Species

Check list of ground-dwelling ants (Hymenoptera: Formicidae) of the eastern Acre, Amazon, Brazil

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Abstract: The ant fauna of state of Acre, Brazilian Amazon, is poorly known. The aim of this study was to compile the species sampled in different areas in the State of Acre. An inventory was carried out in pristine forest in the municipality of Xapuri. This list was complemented with the information of a previous inventory carried out in a forest fragment in the municipality of Senador Guiomard and with a list of species deposited at the Entomological Collection of National Institute of Amazonian Research– INPA. The resulting list covered 268 species distributed in 52 genera and nine subfamilies, and records 23 species and four morphospecies for the first time in the state of Acre. Due to the large environmental heterogeneity, future inventories will be crucial to properly describe and understand ant species distribution patterns in southwestern Amazon.

Introduction

Although tropical forests represent only 7% of the planet´s surface, these ecosystems host more than a half of known species of plants and animals (Wilson 1988; May 2010). Paradoxically, a large amount of species found in tropical forests are associated with a relatively low number of inventories, limiting the knowledge about taxonomy and geographic distribution of species (Dourojeanni 1990). This fact can be found in faunistic and floristic studies in the sate of Acre, west of the Brazilian Amazon.

Several studies on plants (Silveira *et al.* 1997; Goldenberg and Meirelles 2011), mammals (Calouro 1999), birds (Whitaker and Oren 1999; Guilherme 2001; Guilherme and Borges 2011), amphibians (Lima *et al.* 2007) and some arthropod groups (Morato 2001; Villarreal-Manzanilla and Pinto-Da-Rocha 2006; Oliveira *et al.* 2009; Carvalho and Esposito 2010) suggests a large diversity and endemism in forested areas of Acre. However, the distribution of terrestrial invertebrates is relatively unknown (Morato *et al.* 2005). For example, to our knowledge, only one ant survey carried out in Acre state was published until now (Oliveira *et al.* 2009), although these insects are frequently mentioned as key-organisms to the functioning of tropical forests by changing the physical and chemical soil structure (Folgarait 1998; Moutinho *et al.* 2003, Sousa-Souto *et al.* 2007), seed dispersion (Handel and Beattie, 1990, Levey and Byrne, 1993) and control of herbivorous insect population (Dyer and Letourneau 1999).

The aim of this study was to compile the occurrences of species sampled at different areas in the state of Acre. We organized the information available from a previous inventory undertaken in a forest fragment in the municipality of Senador Guiomard (Oliveira *et al.* 2009) with a recent ant survey carried out in a pristine forest area, located at Projeto de Assentamento Agroextrativista (PAE) Chico Mendes, Xapuri, as well as ant species material kept at the Entomological Collection of Instituto Nacional de Pesquisas da Amazônia – INPA.

Material and Methods

Study Area

Ants were sampled in two areas situated in the west of the state of Acre: Fazenda Experimental Catuaba (FEC) and Projeto de Assentamento Agroextrativista (PAE) Chico Mendes (Figure 1), separated from each other by approximately 110 km. Both areas are located in a slightly undulating terrain, characterized by soil of sedimentary origin. The climate is equatorial warm and humid, with the average annual temperature around 24.5°C (maximum of 32°C). The annual rainfall varies between 1,600 mm to 2,750 mm, with two marked seasons: the dry season (< 100 mm/month) goes from July to August and the rainy season (> 300 mm/month) from May to October (Acre 2006).

Fazenda Experimental Catuaba (10°04’ S e 67°37’ W) covers an area of 1,116 ha of dense rain forest, located in the municipality of Senador Guiomard. The vegetation is “terra-firme” non-flooded rain forest with closed canopy. The understory is relatively dense and characterized by the abundance of palms trees, bamboos and lianas. The canopy height is of 30–37 m with some emergent trees reaching up to 40 m. Besides the primary forest, there are other secondary forest formations (*capoeira*) and abandoned pasture (see Oliveira *et al.* 2011, for detailed information).

Projeto de Assentamento Agroextrativista (PAE) Chico Mendes (10° 53' S e 68° 21' W) is an area of 24,898 ha (Acre 2006), located in the municipality of Xapuri, Acre, Brazil (Acre 2009). Approximately 84 families are distributed in PAE Chico Mendes. These families carry out the collection of Brazilian nuts (*Bertholletia excelsa* Kunth), latex (*Hevea brasiliensis* (Willd. Ex A. Juss) Mull. Arg.) extractivism, and some families develop the sustainable low intensity forest management (5.4m^3/ha). Approximately 90% of the area is covered by forests (Coopeagro 2001), which the principal vegetation formations are represented by open forest dominated by bamboo, open forest dominated by palms and dense rain forest (Acre 2006).

Sampling

At FEC ants were sampled using pitfall traps installed in nine plots of approximately 1 ha (90 x 80 m). Three plots were established in primary forests; three in approximately 19 years old secondary forests; and three in secondary managed forests (burned, deforested and left for regeneration since 2001). The distance between areas varied of 0.1 to 6.5 km. In each area 20 pitfalls were installed every 25 m. The traps remained in field for seven days. The samples were done from June 2001 to January 2005, totaling 2,400 pitfalls (Oliveira *et al.* 2009; 2011).

Ants were sampled in nine sustainable low intensity forest management areas at PAE Chico Mendes during August and September 2010. Areas were chosen in order to cover the different forests structures found on the settlement project. The distance between areas varied between approximately 4 km and 12 km. In each area, ants were sampled by pitfall traps (9 cm diameter plastic cup) in two 10 ha plots, totaling 18 plots (nine in managed areas and nine plots in unmanaged areas). In each plot, two 200 m-long parallel transects 50 m from each other, were established in the center of the plot. Ten pitfall traps were installed every 20 m along each transect, totalizing 360 traps (20 per plot). The pitfalls had a solution of 70% alcohol and were left open for four days before being removed.

Ants were sorted and identified using taxonomic keys (Fernández 2003; Wilson 2003; Hölldobler and Wilson 1990) and by comparison with specimens deposited at Entomological Collection of INPA, Regional Museum of Universidade Federal de Viçosa and Laboratório de Mirmecologia do Centro de Pesquisas do Cacau (CEPEC/CEPLAC). The taxa that had not been identified to a species level were named with a unique code, thus the morphotypes sampled in PAE Chico Mendes were indexed with morphotypes sampled in FEC. Voucher specimens of FEC surveys were deposited at Entomological Collection of Universidade Federal do Acre, Regional Museum of Universidade Federal de Viçosa and Centro de Pesquisas do Cacau (CPDC collection, CEPEC/CEPLAC). A full reference collection of PAE Chico Mendes was deposited in Entomology Collection of INPA and Entomological Collection of Universidade Federal do Acre.

The nomenclature followed Bolton *et al.* (2005), with subsequent amendments available at the Online Catalog of the Ants of the World (AntCat) web site (http://antcat.

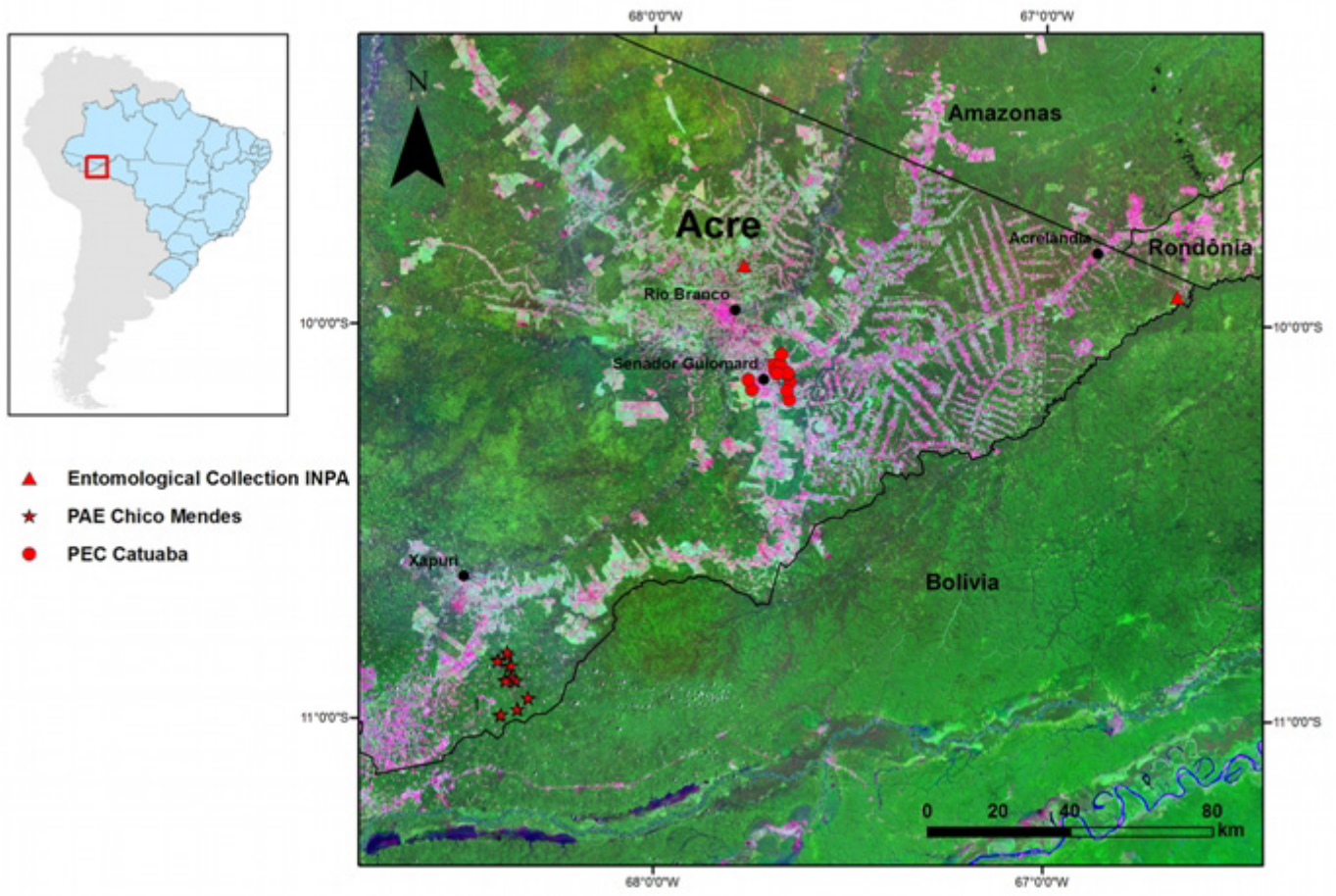

Figure 1. Map of the sampling areas and additional information about ant species distribution available for the state of Acre.

org/catalog/index).

Data analyses

Because the sampling units and pitfall trap density were different, species rarefaction curves were used to compare species richness between areas. The rarefaction curves were generated by random samples of species occurrence without replacement in Estimate S 8.20 software (Colwell 1997), using the Coleman method (Coleman 1981). As ants are colonial organisms and often use established pheromone trails, using abundance of individuals may alter diversity estimates (Longino *et al.* 2002). Therefore, the rarefaction curves were built using the species frequency instead of worker numbers (Colwell and Coddington 1994; Gotelli and Colwell 2001).

Results and Discussion

The inventory undertaken at FEC resulted in 106,018 specimens, distributed in 276 species and 57 genera, covering nine subfamilies: Myrmicinae (represented 49.6% of species sampled), Formicinae (14.5%), Ponerinae (13.0%), Dolichoderinae (6.9%), Ecitoninae (5.4%), Ectatomminae (4.7%), Pseudomyrmecinae (4.7%), Cerapachyinae (1.1%) and Paraponerinae (0.1%) (see Oliveira *et al.* 2009, 2011 for further details). At PAE Chico Mendes 16,111 ants specimens were sampled corresponding to 222 species, 44 genera and eight subfamilies: Myrmicinae (represented 55.3% of species), Ponerinae (13.9%), Formicinae (12.6%), Dolichoderinae (6.3%), Ectatomminae (6.3%), Pseudomyrmecinae (2.6%), Ecitoninae (2.5%), and Paraponerinae (0.5%). Only 23 species (10%) were sampled in all nine areas of PAE, being the most frequent: *Pheidole* (gp. Fallax) sp.1, *Ectatomma lugens* and *Pheidole gagates.*

The rarefaction curve of species tended to be asymptotic only for FEC inventory (Figure 2). This result was expected because of the larger sampling effort carried out for 3.5 years, which covered different pluviometric regimens (Oliveira *et al.* 2009, 2011). Although the rarefaction curve of PAE Chico Mendes did not show signs of stabilization, the increasing of new species ratio was similar from FEC areas (Figure 2). This suggests that, if the same amount of sampling effort was employed, the total number of species expected for PAE Chico Mendes would be similar to the number found at FEC forest systems (276 species).

The inventory undertaken at PAE recorded 22 species and four morphospecies (~11%) not registered in the previous study in FEC. The combined list presented here represents 267 species distributed in nine subfamilies (Table 1). Besides the relative large number of species, 83 morphotypes could not be compared between the inventory collections and were excluded from the list. Approximately 42% of species were sampled at both, PAE Chico Mendes and FEC (Table 1). *Pseudomyrmex unicolor* Fr. Smith, 1855 was the only species deposited at Coleção de Invertebrados do INPA, which were not sampled in FEC and PAE Chico Mendes.

As in other Amazon areas, the subfamily Myrmicinae showed a higher number of species. In soil and leaf litter ants inventories, this subfamily is normally the most frequent and diverse, probably because it comprises generalist species, specialists predators and fungus-growing ants which have different nesting habitats, such as rotting wood, soil, leaf litter and on the vegetation (Fowler *et al.* 1991). The subfamilies that harbor strictly or partially arboreal species, such as Pseudomyrmecinae (Ward 1999) and Dolichoderinae (Shattuck 1992), probably were underestimated due to the sampling methods used in our inventories. For example, among the *Pseudomyrmex* species sampled, only two (*P. termitarius* and *P. tenuis*) are terrestrial (Kempf 1960), while in the genus *Dolichoderus,* only *D. imitator* nests in the leaf litter.

Although the ant fauna of the state of Acre is still poorly understood, the number of ant inventories for the Amazon basin growed exponentially in recent decades (Benson and Harada 1988; Majer and Delabie 1994; Vasconcelos and Delabie 2000, Vasconcelos *et al.* 2001; Vasconcelos *et al.* 2003; Vasconcelos and Vilhena 2006; Santos *et al.* 2008; Donoso and Ramón 2009; Harada and Ketelhut 2009; Souza *et al.* 2012). We expect this study help to stimulate new ant inventories in state of Acre, which is crucial to properly describe and understand the ant species distribution patterns in the southwestern Amazon.

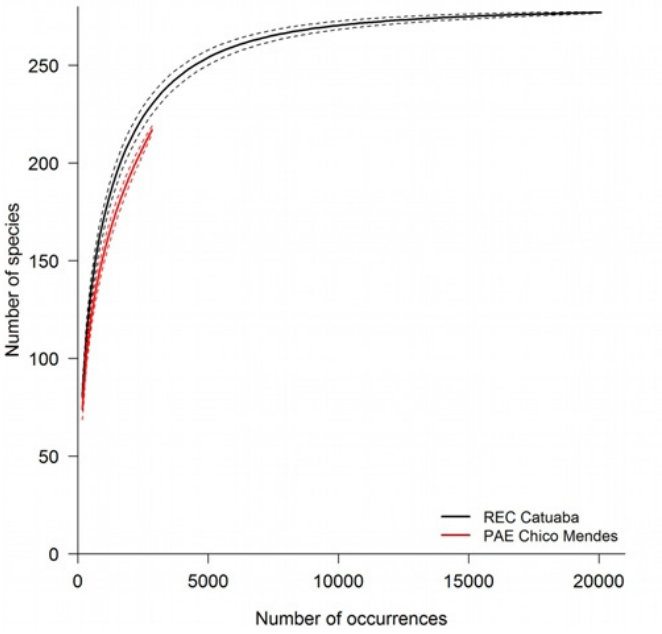

Figure 2. Ant incidence-based rarefaction curves for two sampling areas in eastern Acre. The dotted lines represent the 95% confidence interval around the average.

Table 1. Ant species collected in Projeto de Assentamento Agroextrativista (PAE) Chico Mendes and Fazenda Experimental Catuaba (FEC), state of Acre, Brazil

SUBFAMILY	SPECIES	PAE CHICO MENDES	FEC
Ceraphachyinae	*Acanthostichus femoralis* Kusnezov, 1962		X
	Acanthostichus quadratus Emery, 1895		X
	Cerapachys splendens Borgmeier, 1957		X
Dolichoderinae	*Azteca chartifex* Forel, in Emery,1896	X	X
	Dolichoderus attelaboides (Fabricius, 1775)	X	X
	Dolichoderus bidens (Linnaeus, 1758)		X
	Dolichoderus bispinosus (Olivier, 1792)	X	X
	Dolichoderus decollatus Fr. Smith, 1858		X
	Dolichoderus diversus Emery, 1894		X
	Dolichoderus ferrugineus (Forel, 1903)	X	X
	Dolichoderus gagates Emery, 1890	X	X
	Dolichoderus ghilianii Emery, 1894		X
	Dolichoderus imitator Emery, 1894	X	X
	Dolichoderus inermis MacKay, 1993		X
	Dolichoderus lutosus (Fr. Smith, 1858)	X	X
	Dolichoderus quadridenticulatus (Roger, 1862)		X
	Dolichoderus rugosus (Fr. Smith, 1858)	X	X
	Dolichoderus voraginosus MacKay, 1993		X
	Linepithema neotropicum Wild, 2007		X
Ecitoninae	*Eciton burchellii* (Westwood, 1842)		X
	Eciton hamatum (Fabricius, 1782)		X
	Eciton mexicanum Roger, 1863	X	X
	Eciton quadriglume (Halidey, 1836)		X
	Eciton rapax Fr. Smith, 1855		X
	Labidus coecus (Latreille, 1802)	X	X
	Labidus praedator (Fr. Smith, 1858)	X	X
	Labidus spininodis (Emery, 1890)	X	X
	Neivamyrmex carettei (Forel, 1913)		X
	Neivamyrmex diana (Forel, 1912)		X
	Neivamyrmex gibbatus Borgmeier, 1953		X
	Neivamyrmex orthonotus (Borgmeier, 1933)		X
	Neivamyrmex pilosus (Fr. Smith, 1858)		X
	Nomamyrmex esenbecki (Westwood, 1842)		X
	Nomamyrmex hartigi (Westwood, 1842)		X
Ectatomminae	*Ectatomma brunneum* Fr. Smith, 1858		X
	Ectatomma edentatum Roger, 1863	X	
	Ectatomma lugens Emery, 1894	X	X
	Ectatomma permagnum Forel, 1908		X
	Ectatomma suzanae Almeida, 1986	X	X
	Ectatomma tuberculatum (Oliver, 1792)	X	X
	Gnamptogenys acuminata (Emery, 1896)	X	X
	Gnamptogenys annulata (Mayr, 1887)	X	X
	Gnamptogenys falcifera Kempf, 1967		X
	Gnamptogenys haenschi Emery, 1902		X
	Gnamptogenys horni (Santschi, 1929)	X	X
	Gnamptogenys mediatrix Brown, 1958	X	X
	Gnamptogenys striatula Mayr, 1884	X	X
	Gnamptogenys sulcata (Fr. Smith, 1858)	X	X
Formicinae	*Acropyga guianensis* Weber, 1944	X	X
	Brachymyrmex admotus Mayr, 1887	X	X
	Brachymyrmex gaucho Santschi, 1917	X	X
	Brachymyrmex heeri Forel, 1874		X
	Brachymyrmex patagonicus Mayr, 1868		X
	Camponotus (Myrmaphaenus) sp.1	X	X
	Camponotus (Myrmaphaenus) sp.2	X	X
	Camponotus (Myrmaphaenus) sp.3		X
	Camponotus (Myrmaphaenus) sp.4		X

Table 1. ***Continued.***

SUBFAMILY	SPECIES	PAE CHICO MENDES	FEC
Formicinae	*Camponotus (Myrmobrachys)* sp.1		X
	Camponotus (TanaemyrmeX) sp.1	X	X
	Camponotus (TanaemyrmeX) sp.2		X
	Camponotus atriceps (Fr. Smith, 1858)	X	X
	Camponotus bidens Mayr, 1870		X
	Camponotus blandus (Fr. Smith, 1858)		X
	Camponotus cacicus Emery, 1903	X	X
	Camponotus claviscapus Forel, 1899	X	
	Camponotus crassus Mayr, 1862	X	X
	Camponotus depressus Mayr, 1866	X	X
	Camponotus fastigatus Roger, 1863		X
	Camponotus femoratus (Fabricius, 1804)	X	X
	Camponotus latangulus Roger, 1863	X	X
	Camponotus leydigi Forel, 1886		X
	Camponotus mirabilis Emery, 1903		X
	Camponotus nidulans (Fr. Smith, 1860)	X	
	Camponotus novogranadensis Mayr, 1870	X	X
	Camponotus punctulatus minutior Forel, 1886	X	X
	Camponotus rectangularis Emery, 1890		X
	Camponotus renggeri Emery, 1894		X
	Camponotus rufipes (Fabricius, 1775)		X
	Camponotus sericeiventris (Guérin-Méneville, 1838)	X	X
	Camponotus sexguttatus (Fabricius, 1793)		X
	Camponotus pr. *atriceps*		X
	Camponotus trapezoideus Mayr, 1870	X	X
	Gigantiops destructor (Fabricius, 1804)	X	X
	Nylanderia fulva (Mayr, 1862)	X	
	Nylanderia guatemalensis (Forel, 1885)	X	X
	Paratrechina longicornis (Latreille, 1802)		X
Myrmicinae	*Acromyrmex coronatus* (Fabricius, 1804)	X	X
	Acromyrmex subterraneus brunneus (Forel, 1912)	X	
	Apterostigma acre Lattke, 1997		X
	Apterostigma peruvianum Wheeler, 1925		X
	Apterostigma pr. *andense*		X
	Apterostigma (gr. Pilosum) sp.	X	
	Apterostigma turgidum Lattke, 1997		X
	Atta cephalotes (Linnaeus, 1758)	X	X
	Atta laevigata (Fr. Smith, 1858)	X	X
	Atta sexdens (Linnaeus, 1758)		X
	Basiceros betschi (Perrault, 1988)	X	X
	Basiceros iheringhi (Emery, 1887)		X
	Basiceros militaris (Weber, 1950)	X	
	Basiceros pr. *iheringhi*		X
	Carebara urichi (Wheeler, 1922)		X
	Cephalotes atratus (Linnaeus, 1758)	X	X
	Cephalotes clypeatus (Fabricius, 1804)	X	
	Cephalotes maculatus (Fr. Smith, 1876)	X	X
	Cephalotes minutus (Fabricius, 1804)		X
	Cephalotes opacus Santschi, 1920		X
	Cephalotes pallidoides De Andrade, 1999		X
	Cephalotes pavonii (Latreille, 1809)		X
	Cephalotes pusillus (Klug, 1824)		X
	Cephalotes spinosus (Mayr, 1862)	X	X
	Crematogaster brasiliensis Mayr, 1878	X	
	Crematogaster carinata Mayr, 1862	X	
	Crematogaster crinosa Mayr, 1862		X
	Crematogaster erecta Mayr, 1866	X	X

Table 1. ***Continued.***

SUBFAMILY	SPECIES	PAE CHICO MENDES	FEC
	Crematogaster flavosensitiva Longino, 2003	X	
	Crematogaster limata Fr. Smith, 1858	X	X
	Crematogaster longispina Emery, 1890		X
	Crematogaster nigropilosa Mayr, 1870		X
	Crematogaster rochai Forel, 1903	X	X
	Crematogaster pr. *crucis*		X
	Crematogaster stollii Forel, 1885	X	X
	Crematogaster tenuicula Forel, 1904	X	X
	Cyphomyrmex cornutus Kempf, 1968		X
	Cyphomyrmex faunulus Wheeler, 1925		X
	Cyphomyrmex laevigatus Weber, 1938	X	X
	Cyphomyrmex major Forel, 1901		X
	Cyphomyrmex peltatus Kempf, 1966	X	X
	Cyphomyrmex (gr. Rimosus) sp.	X	
	Cyphomyrmex transversus Emery, 1894	X	X
	Daceton armigerum (Latreille, 1802)	X	X
	Hylomyrma balzani (Emery, 1894)	X	X
	Hylomyrma immanis Kempf, 1973	X	X
	Megalomyrmex ayri Brandão, 1990		X
	Megalomyrmex balzani Emery, 1894	X	
	Megalomyrmex goeldii Forel, 1912	X	
	Megalomyrmex leoninus Forel, 1885		X
	Megalomyrmex pr. *leoninus*		X
	Megalomyrmex weyrauchi Kempf, 1970	X	X
	Monomorium floricola (Jerdon, 1851)		X
	Mycetarotes parallelus (Emery, 1906)		X
	Mycetarotes senticosus Kempf, 1960		X
	Mycocepurus goeldii (Forel, 1893)	X	X
Myrmicinae	*Mycocepurus smithii* (Forel, 1893)	X	X
	Ochetomyrmex neopolitus Fernandez, 2003		X
	Ochetomyrmex semipolitus Mayr, 1878	X	X
	Pheidole aciculata Wilson, 2003	X	X
	Pheidole astur Wilson, 2003	X	X
	Pheidole bruesi Wheeler, 1911	X	X
	Pheidole bufo Wilson, 2003	X	X
	Pheidole capillata Emery, 1906	X	X
	Pheidole deima Wilson, 2003	X	X
	Pheidole fallax Mayr, 1870	X	X
	Pheidole fimbriata Roger, 1863	X	X
	Pheidole flavifrons Wilson, 2003		X
	Pheidole fracticeps Wilson, 2003	X	
	Pheidole gagates Wilson, 2003	X	X
	Pheidole infernalis Wilson, 2003		X
	Pheidole jeannei Wilson, 2003	X	X
	Pheidole lancifer Wilson, 2003		X
	Pheidole leonina Wilson, 2003	X	X
	Pheidole leptina Wilson, 2003	X	X
	Pheidole micridis Wilson, 2003		X
	Pheidole oxyops Forel, 1908	X	X
	Pheidole radoszkowskii Mayr, 1884	X	X
	Pheidole schwarzmaieri Borgmeier, 1939		X
	Pheidole pr. *fimbriata*	X	
	Pheidole (gr. Diligens) sp.1	X	X
	Pheidole (gr. Diligens) sp.2	X	X
	Pheidole (gr. Diligens) sp.3		X
	Pheidole (gr. Diligens) sp.4	X	X
	Pheidole (gr. Diligens) sp.5	X	X

Table 1. ***Continued.***

SUBFAMILY	SPECIES	PAE CHICO MENDES	FEC
	Pheidole (gr. Diligens) sp.6	X	X
	Pheidole (gr. Diligens) sp.7		X
	Pheidole (gr. Diligens) sp.8		X
	Pheidole (gr. Fallax) sp.1	X	X
	Pheidole (gr. Fallax) sp.2		X
	Pheidole (gr. Fallax) sp.3		X
	Pheidole (gr. Fallax) sp.4	X	X
	Pheidole (gr. Fallax) sp.5	X	X
	Pheidole (gr. Fallax) sp.6		X
	Pheidole (gr. Fallax) sp.7		X
	Pheidole (gr. Flavens) sp.1	X	X
	Pheidole (gr. Flavens) sp.2		X
	Pheidole (gr. Flavens) sp.3		X
	Pheidole (gr. Flavens) sp.4		X
	Pheidole (gr. Flavens) sp.5		X
	Pheidole (gr. Flavens) sp.6		X
	Pheidole (gr. Tristis) sp.1	X	X
	Pheidole (gr. Tristis) sp.2		X
	Pheidole stigma Wilson, 2003	X	X
	Pogonomyrmex abdominalis Santschi, 1929		X
	Procryptocerus pictipes Emery, 1896		X
	Rogeria belti Mann, 1922		X
	Rogeria bruchi Santschi, 1922		X
Myrmicinae	*Rogeria foreli* Emery, 1894		X
	Solenopsis geminata (Fabricius, 1804)	X	X
	Solenopsis invicta Buren, 1972	X	X
	Solenopsis virulens (Fr. Smith, 1858)	X	X
	Strumigenys subedentata Mayr, 1887	X	X
	Strumigenys alberti Forel, 1893		X
	Strumigenys appretiata (Borgmeier, 1954)		X
	Strumigenys beebei (Wheeler, 1915)	X	X
	Strumigenys depressiceps Weber, 1934		X
	Strumigenys eggersi Emery, 1890	X	X
	Strumigenys elongata Roger, 1863		X
	Strumigenys trinidadensis Wheeler, 1922	X	
	Strumigenys trudifera Kempf *and* Brown, 1969	X	
	Tapinoma melanocephalum (Fabricius, 1793)	X	
	Tetramorium bicarinatum (Nylander, 1846)		X
	Trachymyrmex cornetzi (Forel, 1912)	X	X
	Trachymyrmex farinosus (Emery, 1894)		X
	Trachymyrmex ixyodus Mayhé-Nunes *and* Brandão, 2007		X
	Trachymyrmex opulentus (Mann, 1922)	X	X
	Trachymyrmex relictus Borgmeier, 1934		X
	Trachymyrmex ruthae Weber, 1937	X	X
	Tranopelta gilva Mayr, 1866		X
	Tranopelta sp.1	X	
	Wasmannia auropunctata (Roger, 1863)	X	X
	Wasmannia rochai Forel, 1912		X
Paraponerinae	*Paraponera clavata (Fabricius, 1775)*	X	X
	Anochetus bispinosus (Fr. Smith, 1858)	X	X
	Anochetus diegensis Forel, 1912	X	
	Anochetus targionii Emery, 1894		X
	Centromyrmex brachycola (Roger, 1861)		X
Ponerinae	*Leptogenys unistimulosa* Roger, 1863	X	X
	Odontomachus bauri Emery, 1892	X	X
	Odontomachus biumbonatus Brown, 1976	X	X
	Odontomachus brunneus (Patton, 1894)		X

Table 1. ***Continued.***

SUBFAMILY	SPECIES	PAE CHICO MENDES	FEC
	Odontomachus chelifer (Latreille, 1802)	X	
	Odontomachus haematodus (Linnaeus, 1758)	X	X
	Odontomachus hastatus (Fabricius, 1804)	X	
	Odontomachus mayi Mann, 1912		X
	Odontomachus meinerti Forel, 1905	X	X
	Odontomachus opaciventris Forel, 1899	X	
	Pachycondyla apicalis (Latreille, 1802)	X	X
	Pachycondyla carinulata (Roger, 1861)		X
	Pachycondyla commutata (Roger, 1860)	X	X
	Pachycondyla constricta (Mayr, 1884)	X	X
	Pachycondyla crassinoda (Latreille, 1802)	X	X
	Pachycondyla ferruginea (Fr. Smith, 1858)		X
Ponerinae	*Pachycondyla foetida* (Linnaeus, 1758)		X
	Pachycondyla harpax (Fabricius, 1804)	X	X
	Pachycondyla holmgreni (Wheeler, 1925)		X
	Pachycondyla inversa (Fr. Smith, 1858)		X
	Pachycondyla laevigata (Fr. Smith, 1858)		X
	Pachycondyla marginata (Roger, 1861)	X	X
	Pachycondyla mesonotalis (Santschi, 1923)	X	X
	Pachycondyla sitgma (Fabricius, 1804)	X	
	Pachycondyla pr. *magnifica*		X
	Pachycondyla unidentata Mayr, 1862	X	
	Pachycondyla verenae (Forel, 1922)	X	X
	Platythyrea angusta Forel, 1901		X
	Platythyrea sinuata (Roger, 1860)	X	X
	Simopelta jeckylli (Mann, 1916)		X
	Pseudomyrmex curacaensis (Forel, 1912)	X	X
	Pseudomyrmex elongatus (Mayr, 1870)		X
	Pseudomyrmex gracilis (Fabricius, 1804)		X
	Pseudomyrmex laevigatus (Fr. Smith, 1877)		X
	Pseudomyrmex oculatus (Fr. Smith, 1855)	X	X
	Pseudomyrmex pupa (Forel, 1911)		X
Pseudomyrmecinae	*Pseudomyrmex sericeus* (Mayr, 1870)		X
	Pseudomyrmex (gr. Pallidus*)* sp.1	X	X
	Pseudomyrmex (gr. Pallidus) sp.2		X
	Pseudomyrmex (gr. Pallidus) sp.3		X
	Pseudomyrmex tenuis (Fabricius, 1804)	X	X
	Pseudomyrmex termitarius (Fr. Smith, 1855)		X
	Pseudomyrmex triplarinus (Weddell, 1850)		X

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Literature Cited

Acre. 2006. *Zoneamento Ecológico-Econômico do Acre Fase II: documento Síntese-escala 1: 250.000.* Rio Branco: Governo do Estado do Acre, Programa Estadual de Zoneamento Ecológico-Econômico do Estado do Acre. 356 p.

Acre. 2009. *Manejo Florestal Comunitário do Estado do Acre.* Rio Branco: Governo do Estado do Acre, Secretaria Estadual de Florestas, Secretaria Estadual de Florestas.

Benson, W. and A.Y. Harada, 1988. Local diversity of tropical and temperate ant faunas (Hymenoptera, Formicidae). *Acta Amazonica* 18: 275-289.

Bolton, B., G. Alpert, P.S. Ward and P. Naskrecki. 2005. *Bolton's catalogue of ants of the world - 1758-2005.* Harvard University Press, CD-Room.

Calouro, A.M. 1999. Riqueza de mamíferos de grande e médio porte do Parque Nacional da Serra do Divisor (Acre, Brasil). *Revista Brasileira de Zoologia* 16(2): 459-470.

Carvalho, F.S. and M.C. Esposito. 2010. A New Species of *Bricelochlorops* Paganelli and the First Record of *Urubambina rufa* (Duda) (Diptera: Chloropidae) from Brazil. *Neotropical Entomology* 39(5): 742-745.

Coleman, B.D. 1981. On random placement and species-area relations. *Mathemat Biosciences* 54: 191-215.

Coopeagro. 2001. *Plano de Desenvolvimento Sustentável do Projeto de Assentamento Chico Mendes, Município de Epitaciolândia.* Epitaciolândia, Acre: Coopeagro.

Colwell, R. 1997. *EstimateS: Statistical estimation of species richness and shared species from samples. Version 7.5. User's guide and application published online.* Electronic Database accessible at http://viceroy.eeb.uconn.edu/estimates. Captured on 25 april 2011.

Colwell, R.K. and J.A. Coddington. 1994. *Estimating terrestrial biodiversity through extrapolation. Philosophical Transactions of the Royal Society (Series B)* 345: 101- 118.

Danoso, D.A. and G. Ramón. 2009. Composition of a high diversity leaf litter ant community (Hymenoptera: Formicidae) from an Ecuadorian pre-montane rainforest. *Ann. soc. entomol. Fr.* 45(4): 487-499.

Dourojeanni, M.J. 1990. Entomology and biodiversity conservation in Latin America. *American Entomologist* 36(2): 88-93.

Dyer, L.A. and D.K. Letourneau. 1999. Relative strengths of top-down and bottom-up forces in a tropical forest community. *Oecologia* 119: 265-274.

Fernández, F. 2003. Subfamília Formicinae; p. 299-306 *In* Fernández, F.(ed.) *Introduccion a las hormigas de la región Neotropical.* Bogotá: Instituto de Investigación de Recursos Biológicos Alexander Von Humbolt.

Folgarait, P.J. 1998. Ant biodiversity and its relationship to ecosystem functioning, a review. *Biodiversity and Conservation* 7: 1221-1244.

Fowler, H.G., J.H.C. Delabie, C.R.F. Brandão, L.C. Forte and H.L. Vasconcelos. 1991. Ecologia nutricional de formigas; p. 131-209 *In* Panizzi, A.R. and J.R.P. Parra (ed.). *Ecologia nutricional de insetos e suas implicações no manejo de pragas*. Rio de Janeiro: Manole/CNPq.

Goldenberg, R. and J. Meirelles. 2011. A New Species of *Graffenrieda* (Merianieae, Melastomataceae) with a Calyptrate Calyx. *Systematic Botany* 36(1): 119-123.

Gotelli, N.J. and R.K. Colwell. 2001. Quantifying biodiversity: procedures and pitfalls in the measurement and comparison of species richness. *Ecology Letters* 4: 379-391.

Guilherme, E. 2001. Comunidade de aves do *Campus* e Parque Zoobotânico da Universidade Federal do Acre, Brasil. *Tangara* 1(2): 57-73.

Guilherme, E. and S.H. Borges. 2011. Ornithological records from a campina/campinarana enclave on the upper Jurua River, Acre, Brazil. *Wilson Journal of Ornithology* 123(1): 24-32.

Handel, S.N. and A.J. Beattie. 1990. Seed dispersal by ants. *Scientific American* 263:76-83.

Harada, A.Y. and S.M. Ketelhut. 2009. Formigas da Reserva Ducke: um grupo ainda pouco estudado?; p. 231-248 *In* Fonseca, C.R.V., C. Magalhães, F.A. Rafael and E. Franklin (ed.). *A fauna de artrópodes da Reserva Florestal Ducke: estado atual do conhecimento taxonômico e biológico.* Manaus: Editora INPA.

Hölldobler, B. and E.O. Wilson. 1990. *The ants.* Cambridge: Belknap. 732 p.

Kempf, W.W. 1960. Estudo sobre *Pseudomyrmex* I. (Hymenoptera:Formicidae). *Revista Brasileira de Entomologia* 9: 5-32.

Levey, D.J. and M.M. Byrne. 1993. Complex ant-plant interactions: rain forest ants as secondary dispersers and post-dispersal seed predators. *Ecology* 74: 1802-1812.

Lima, A.P., D.E.A. Sanchez and J.R.D. Souza. 2007. A new Amazonian species of the frog genus *Colostethus* (Dendrobatidae) that lays its eggs on undersides of leavesl. *Copeia* (1): 114-122.

Longino, J.T., J. Coddington and R.K. Colwell. 2002. The Ant Fauna of a Tropical Rain Forest: Estimating Species Richness Three Different Ways. *Ecology* 83: 689-702.

Majer, J.D. and J.H.C. Delabie. 1994. Comparison of the ant communities of annually inundated and terra firme forests at Trombetas in the Brazilian Amazon. *Insectes Sociaux* 41: 343-359. doi: 10.1007/s00114-005-0628-y

May, R. 2010. Tropical arthropod species, more or less? *Science* 329: 41-42.

Morato, E.F. 2001. Ocorrência de *Aglae caerulea* Lepeletier *and* Serville (Hymenoptera, Apidae, Apini, Euglossina) no Estado do Acre, Brasil. *Revista Brasileira de zoologia* 18(3): 1031-1034.

Morato, E.M. and R.P. Martins. 2005. Diversidade e composição da fauna de vespas e abelhas solitárias do Estado do Acre, Amazônia Sul Ocidental; p. 11-40 *In* Drumond, P.M. (ed.). *Fauna do Acre.* Rio Branco: EDUFAC.

Moutinho, P., D.C. Nepstad and E.A. Davidson. 2003. Influence of leaf-cutting ant nests on secondary forest growth and soil properties in Amazonia. *Ecology* 84(5): 1265-1276.

Oliveira, M.A., T.M.C. Della Lucia, C.G.S. Marinho, J.H.C. Delabie and E.F. Morato, 2009. Ant Diversity in an Area of the Amazon Forest in Acre, Brazil. *Sociobiology* 54(1): 243-267.

Oliveira, M.A., T.M.C. Della Lucia, E.F. Morato, M.A. Amaro and C.G. Marinho. 2011. Vegetation structure and richness: effects on ant fauna of the Amazon – Acre, Brazil (Hymenoptera:Formicidae). *Sociobiology* 57(2): 243 - 267.

Santos, J.C., J.H.C. Delabie and G.W. Fernandes. 2008. A 15-years post evaluation of the fire effects on ant community in an area of Amazonian forest. *Revista Brasileira de Entomologia* 52(1): 82-87.

Shattuck, S.O. 1992. Generic revision of the ant subfamily Dolichoderinae (Hymenoptera: Formicidae). *Sociobiology* 21: 1-145.

Silveira, F.A., N.M.C. de Paula, I.F. Brown, H.B.N. Borges, D. Daly and L.A. Ferreira. 1997. Os "buracos negros" da diversidade. *Ciência Hoje* 22(128): 64-65.

Sousa-Souto, L., J.H. Schoereder and C.E.G.R. Schaefer. 2007. Leaf-cutting ants, seasonal burning and nutrient distribution in Cerrado vegetation. *Austral Ecology* 32(7): 758-765.

Souza, J.L.P., F.B. Baccaro, V.L. Landeiro, E. Franklin and W.E. Magnusson (2012). Trade-offs between complementarity and redundancy in the use of different sampling techniques for ground-dwelling ant assemblages. *Applied Soil Ecology* 56: 63-73..

Vasconcelos, H.L. and J.H.C. Delabie. 2000. Ground ant communities from central Amazonia forest fragments; p. 59-70. *In* Agosti, D., J.D. Majer, L.T. Alonso and T. Schultz (ed.). *Sampling Ground-dwelling Ants: Case Studies from the World's Rain Forests*. Perth: Curtin University, School of Environmental Biology Bulletin n. 18.

Vasconcelos, H.L., K.S. Carvalho and J.H.C. Delabie. 2001. Landscape modifications and ant communities; p. 199-207 *In* Bierregaard Jr., R.O., C. Gascon, T.E. Lovejoy and R.C.G. Mesquita (ed.). *Lessons from Amazonia: the Ecology and Conservation of a Fragmented Forest.* New Haven: Yale University Press.

Vasconcelos, H.L., A.C.C. Macedo and J.M.S. Vilhena. 2003. Influence of topography on the distribution of ground-dwelling ants in an Amazonian forest. *Studies on Neotropical Fauna and Environment* 38: 115-124.

Vasconcelos, H.L. and J.M.S. Vilhena. 2006. Species Turnover and Vertical Partitioning of Ant Assemblages in the Brazilian Amazon: A Comparison of Forests and Savannas. *Biotropica* 38: 100–106.

Villarreal-Manzanilla, O. and R. Pinto-Da-Rocha. 2006. Five new species of *Protimesius* from Brazil (Opiliones: Stygnidae). *Zootaxa* (1325): 219-233.

Ward, P. 1999. Systematics, biogeography and host plant associations of the *Pseudomyrmex viduus* group (Hymenoptera: Formicidae), Triplaris- and Tachigali-inhabiting ants. *Zoological Journal of the Linnean Society* 126: 451-540.

Whittaker, A. and D.C. Oren. 1999. Important ornithological records from the Rio Juruá. Western Amazonian forest bird community. *Bulletin of the British Ornithological Club* 119(4): 235-260.

Wilson, E.O. 1988. The current state of biological diversity, p. 3-18 *In* Wilson, E.O. and F.M. Peter (ed.) *Biodiversity*. Washington, Academic Press, 521 p.

Wilson, E.O. 2003. *Pheidole in the New World: a dominant, hyperdiverse ant genus.* Cambridge, Massachusetts: Havard University Press, CD-Rom, 794 p.

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