

What survived from the PLANAFLORO Project: Angiosperms of Rondônia State, Brazil

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ABSTRACT: The Rondônia Natural Resources Management Project (PLANAFLORO) was a strategic program developed in partnership between the Brazilian Government and The World Bank in 1992, with the purpose of stimulating the sustainable development and protection of the Amazon in the state of Rondônia. More than a decade after the PLANAFORO program concluded, the aim of the present work is to recover and share the information from the long-abandoned plant collections made during the project's ecological-economic zoning phase. Most of the material analyzed was sterile, but the fertile voucher specimens recovered are listed here. The material examined represents 378 species in 234 genera and 76 families of angiosperms. Some 8 genera, 68 species, 3 subspecies and 1 variety are new records for Rondônia State. It is our intention that this information will stimulate future studies and contribute to a better understanding and more effective conservation of the plant diversity in the southwestern Amazon of Brazil.

INTRODUCTION

In early 1990, Brazilian Amazon was facing remarkably high rates of forest conversion (Laurance *et al.* 2001; INPE 2012). This was particularly true in the state of Rondônia where cattle ranching, poorly planned settlement, logging, and mining were threatening the local environments and dramatically changing the landscape (Pedlowski *et al.* 1997).

Following heavy criticism of the unsuccessful POLONOROESTE Project in the 1980s, the Brazilian Federal Government undertook a second effort to control biodiversity loss in Rondônia State. Therefore it conceived a plan in partnership with the World Bank to "implement an improved approach to natural resource management, conservation and development in the state": the Rondônia Natural Resources Management Project, also known as PLANAFLORO (World Bank 1992).

The project had an initial budget of US\$ 167 million and was implemented from 1993 to 2001. It consisted of a series of strategic activities, focusing on land use, biodiversity conservation, farming systems, and agroecological and socioeconomic zoning (World Bank 2003). PLANAFLORO is appropriately credited with several important achievements, such as the creation of conservation units and the improvement of the local transportation infrastructure. Numerous criticisms, however, were still made by national and international experts, especially social NGOs, which had extremely limited participation in the project (World Bank 1995; Rodrigues 2002). For instance, critics highlighted the increase in deforestation during the implementation of PLANAFLORO (Browder *et al.* 2008) and thereafter. From 1990 to 2000, Rondônia State lost 26,247 km² of forests, corresponding to 12.94% of its natural coverage. By 2011, it was estimated that nearly 46% or almost half of the state's forests had been lost (Euler *et al.* 2008; INPE 2012).

The PLANAFLORO Project funded botanical expeditions in different areas of the state to inventory arboreal plants with potential use in the wood industry. The aim of the present study was to recover plant specimens and data collected during PLANAFLORO's ecological-economic zoning study between 1996 and 1997 and to disseminate these data and a preliminary checklist of the angiosperm trees in Rondônia State.

MATERIALS AND METHODS

Unfortunately, the plant collections made during PLANAFLORO are dispersed. After almost 15 years neglected, less than half (870) of the originally 4000 vouchers were fertile and relatively undamaged. That material was decontaminated with a combination of 70% ethanol and 0.2% sodium hypochlorite. Then, it was frozen two times for three days, with a three-day interval, before transference to the main herbarium collection. Finally, specimens were registered, mounted, and deposited under an official voucher number at the Herbário Rondoniense - João Geraldo Kuhlmann (RON) of the Federal University of Rondônia (UNIR). The vouchers are available digitally at the RON website (<http://www.ron.unir.br>).

To gather the information from the specimens, all available labels and identification lists were used. Collection sites, when specified, included protected areas, riparian zones, highways and farms, although we only mention here the entire municipality (Figure 1). Some specimens collected by Hamilton S. Pereira, however, lacked crucial information about site or date of collection and were only included to indicate new records for Rondônia State [see Table 1, tagged as (?)]. In addition, further information on date of collection, common name, and collector name and number were also recovered, when possible. The collector names were Araújo J., Eloísio Vinha, Dirlei (DRL), Marco Antonio, Martins, F. Almeida, L. Prestes and Hamilton S. Pereira.

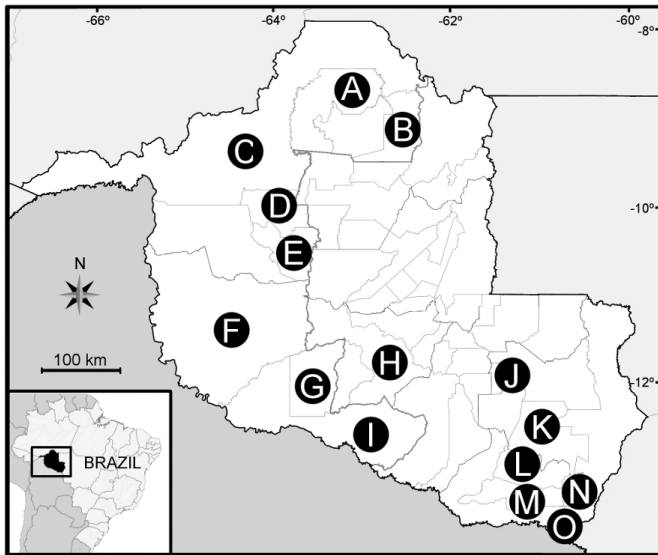


FIGURE 1. State of Rondônia, Brazil, showing the municipalities where field collections were carried out by PLANAFLORO during the 1990s. Sites were as follows: (a) Candeias do Jamari, (b) Cujubim, (c) Porto Velho, (d) Buritit, (e) Campo Novo de Rondônia, (f) Guajará Mirim, (g) São Francisco do Guaporé, (h) São Miguel do Guaporé, (i) Costa Marques, (j) Primavera de Rondônia, (k) Chupinguaia, (l) Corumbiara, (m) Cerejeiras, (n) Colorado do Oeste, and (o) Cabixi.

For the checklist, we have included only fertile vouchers, i.e. bearing flower or fruits (Figure 2A). Sterile material was deposited in a secondary collection (Figure 2B) under different voucher numbers [ex: RON e1721, *Abarema jupunba* (Willd.) Britton & Killip], also available online.

Plant determination was carried out in 1997 by Nelson de Araújo Rosa, of the Museu Paraense Emílio Goeldi (MPEG). Burseraceae was revised by Douglas Daly (NYBG), while Peraceae was revised by Narcísio C. Bigio (UNIR). In addition, species names were double-checked against Tropicos (<http://www.tropicos.org>) and The Plant List 2010 (<http://www.theplantlist.org>) websites to avoid nomenclatural confusion. New records for the region were based on the online Lista de Espécies da Flora do Brasil 2012 (<http://floradobrasil.jbrj.gov.br/>) and the Herbário Virtual da Flora e dos Fungos (INCT- HVFF) (<http://inct.splink.org.br>) websites. Finally, voucher duplicates were sent to the CEN, IAN, INPA, MG, and RB herbaria (acronyms according to Holmgren *et al.* 1990).

RESULTS AND DISCUSSION

We recorded 378 species distributed in 234 genera and 76 families of angiosperms (see Table 1). The most species-rich families found were Annonaceae (21 spp.), Leguminosae - Caesalpinioideae (21 spp.), and Moraceae (19 spp.), followed by Euphorbiaceae and Rubiaceae, each with 18 spp. (Figure 3). The remaining families, which made up 75% of the species, each presented 17 species or fewer, and ca. 42% of these were each represented by a single species. *Casearia* (Salicaceae) (9 spp.), *Protium* (Burseraceae), and *Inga* (Leguminosae - Mimosoideae) (8 spp.) were the richest genera, followed by *Guarea* (Meliaceae) and *Miconia* (Melastomataceae) each with 7 species (Figure 4).

Our results showed 72 new records for Rondônia State, including 8 genera, 68 species, 3 subspecies, and 1 variety. Approximately 20% of the specimens recovered

from PLANAFLORO collections constituted new records, underscoring the lack of knowledge of the local Flora. For example, common species occurring in the state, like caranaí (*Lepidocaryum tenue* Mart.) or the fig tree *Ficus maxima* Mill. (pers. obs.) were not found in the database of the Brazilian Flora 2012 for Rondônia.

The PLANAFLORO Project aimed specifically to inventory arboreal species (World Bank 1992). Curiously, though, we found some characteristically herbaceous families, such as Commelinaceae and Costaceae. We can argue that these species were collected, because they were abundant inside the collection sites. Likewise, these species could have been perceived as economically important, regardless of their wood potential. The reason behind this, however, is still unclear.

To mention some of the herbs and shrubs collected, we found a *Heliconia* (*Heliconia rostrata* Ruiz & Pav., Heliconiaceae), a cactus (*Selenicereus* sp., Cactaceae), and grasses (*Lasiacis ligulata* Hitchc. & Chase and *Olyra latifolia* L., Poaceae). But, due to the bad conservation status and the lack of reproductive parts on these specimens which would allow an identification confirmation, we decided to exclude these records from our checklist.

Although records occurred in diverse municipalities, few species were found in more than one collection site. The most frequently collected species was *Fusaea longifolia* (Aubl.) Saff. (Annonaceae), found in six different sites. Comparisons with the Flora of the neighbor state of Acre, Brazil (Daly & Silveira 2008), showed that 239 species occur on both states, representing over 60% of the species listed here [see Table 1, tagged as (♦)].

In addition, some economically important trees have been observed in Rondônia but are not yet represented on the new checklist, including big-leaf mahogany (*Swietenia macrophylla* King) and cedar (*Cedrela odorata* L.). On the contrary, other common species were found, like jatobá (*Hymenaea courbaril* L., Leguminosae - Caesalpinioideae), Pará rubber [*Hevea brasiliensis* (Willd. ex A. Juss.) Müll. Arg., Euphorbiaceae], and *Copaifera* spp. (Leguminosae - Caesalpinioideae), already reported as native species from Rondônia State by some surveys (Curi 2000; Bentes-Gama *et al.* 2008). This suggests that the material recovered from PLANAFLORO, although informative, could still be incomplete for the studied area.

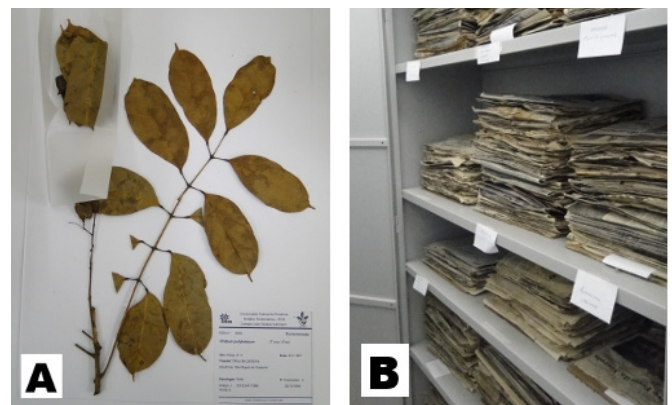


FIGURE 2. PLANAFLORO botanical collections deposited at the Herbário Rondoniense (RON). (A) *Protium polybotryum* (Turcz.) Engl., a new record for Rondônia and one of the few fertile vouchers found in reasonable conservation status. (B) The sterile collection is formed by more than 3000 vouchers. Specimens present only leaves and wood samples.

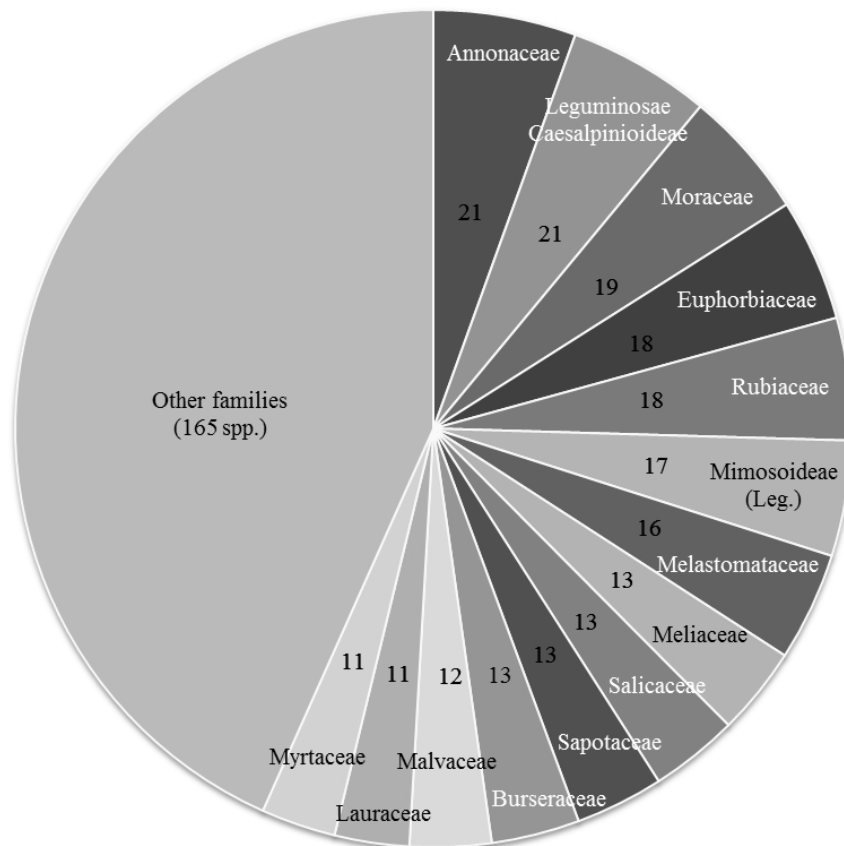


FIGURE 3. Most speciose families of angiosperms found in the PLANAFLORO collections. These presented from 21 (Annonaceae and Leguminosae - Caesalpinioideae) to 11 (Myrtaceae and Lauraceae) species. The remaining 62 families corresponded to 82% of total families and 166 species.

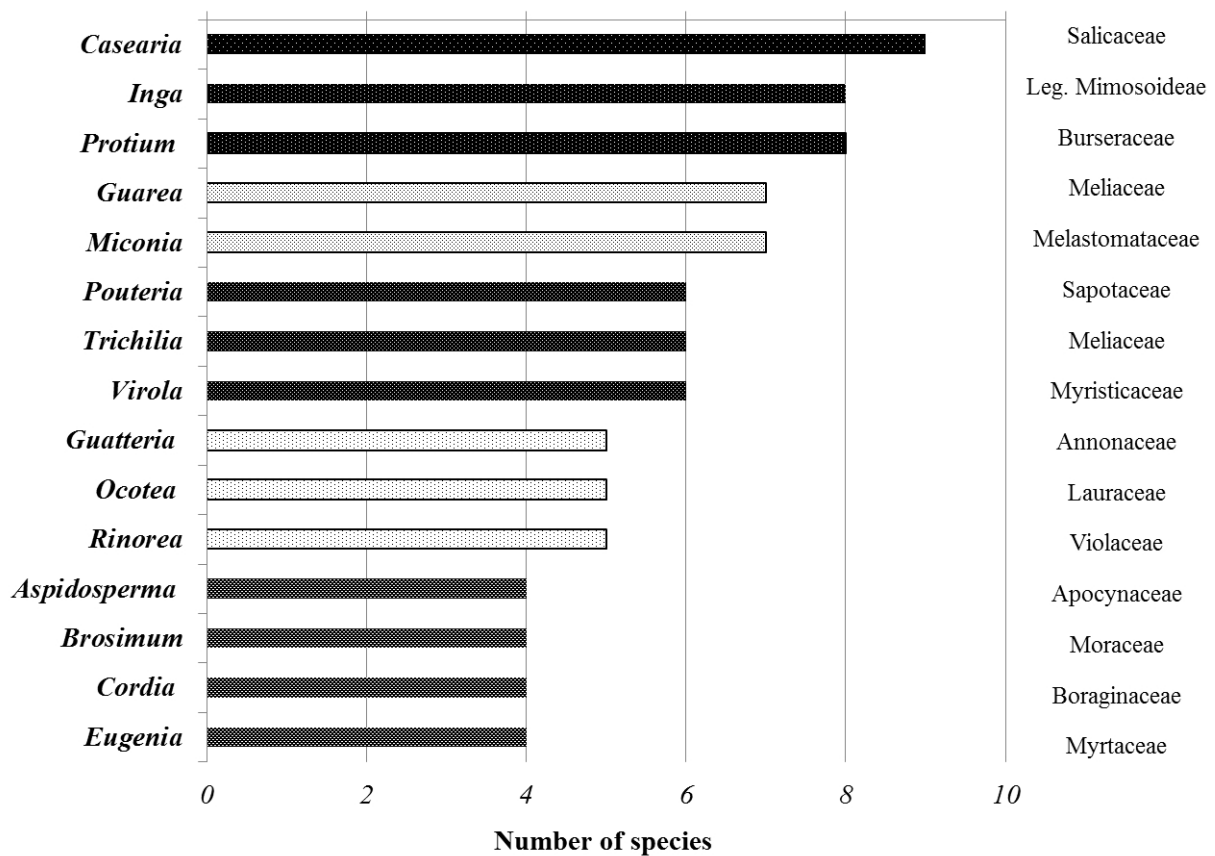


FIGURE 4. Richest genera found in the PLANAFLORO collections. Note that the most representative genera did not belong to the richest families. All genera presented less than 10 species and more than half of the 234 genera presented only one species.

After the PLANAFLORO Project ended, local authorities produced a technical report on vegetation cover, as part of the ecological-economic zoning study (SEDAM 2007). The majority of the specimens were sent to the MG herbarium, while Poaceae and Asteraceae specimens were sent to the IBGE-DF and to the SPF herbarium, respectively. We have found specimens stored at the MG herbarium that were collected at the same sites in Rondônia State between 1996 and 1997. However, the field data for these have different collector names and dates different from those registered in our study. It is possible that these specimens belong to PLANAFLORO collections as well, but future surveys will be necessary to answer this question. Therefore, our list of plant species of Rondônia seems to be the first attempt to associate PLANAFLORO collections to a herbarium, making the plant information available publicly.

It is important to consider that forests of Rondônia have been under continuous human pressure over the past decades. While Pacaás Novos in Guajará Mirim (Figure 1F) is now officially conserved as a National Park, other forests in the state that were collection sites have been degraded

or converted (Ribeiro *et al.* 2005). For instance, the zones of impact along the BR-319 and BR-421 highways, where Dirlei (DRL) and H. S. Pereira collected, have been seriously degraded by human activities (Euler *et al.* 2008). Nevertheless, since information about the local diversity in Rondônia is scarce (Brandon *et al.* 2005) and no effective survey has attended to the urgent need for a full inventory of local species, the data provided in this work is still of great value.

Remote and isolated areas, such as indigenous territories or agricultural frontiers, are usually overlooked by scientific research, and sadly, Rondônia State is not an exception. As daunting as the task might appear, however, the data from an intensive inventory of the botanical diversity of southwestern Brazilian Amazon can be used as an important tool to conserve its forests and plant diversity in the face of severe development pressures and unsustainable management of plant resources. We hope that this work will stimulate other flora-related studies in Rondônia in the near future, and perhaps it will constitute the first step toward a complete Flora of Rondônia.

TABLE 1. List of angiosperms from Rondônia State, Brazil. Some records are missing due to incomplete information on labels or determination lists. New records are discriminated in taxonomic level. (*): voucher number of the specimen deposited at the Herbário Rondoniense (RON). (?): voucher collected by Hamilton S. Pereira lacking information on site of collection. (♦): species which also occurs in the neighbor state of Acre, Brazil.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
Achariaceae			
<i>Carpotroche longifolia</i> (Poepp.) Benth. (♦)	e	3753	
<i>Lindackeria latifolia</i> Benth.	e	3759	
<i>Lindackeria paludosa</i> (Benth.) Gilg (♦)	e	4159	
Anacardiaceae			
<i>Spondias mombin</i> L.	c	3963	
<i>Tapirira guianensis</i> Aubl. (♦)	c	3954	
Annonaceae			
<i>Anaxagorea phaeocarpa</i> Mart. (♦)	d, n/o	3723, 3679	
<i>Anaxagorea</i> sp.	l	3996	
<i>Annona ambotay</i> Aubl. (♦)	e	4137	
<i>Annona montana</i> Macfad. (♦)	d	4104	
<i>Bocageopsis multiflora</i> (Mart.) R.E. Fr.	j	3776	
<i>Duguetia calycina</i> Benoist	c	2534	species
<i>Duguetia flagellaris</i> Huber	d	3722/4090	
<i>Duguetia lepidota</i> (Miq.) Pulle	(?)	3836	species
<i>Ephedranthus</i> sp.	m	4037	
<i>Fusaea longifolia</i> (Aubl.) Saff. (♦)	c, d, f, h, j, m	3890, 4067, 3952, 2547, 3787, 4016	
<i>Guatteria discolor</i> R.E. Fr. (♦)	c	2632	
<i>Guatteria poeppigiana</i> Mart.	e	3766	species
<i>Guatteria recurvisepala</i> R.E. Fr. (♦)	d	4077	
<i>Guatteria schomburgkiana</i> Mart.	n/o	3695	
<i>Guatteria cf. olivacea</i> R.E. Fr. (♦)	d	3719	species
<i>Guatteria</i> sp.	l	3981	
<i>Onychopetalum amazonicum</i> R.E. Fr.	c	2543/2599	
<i>Oxandra riedeliana</i> R.E. Fr. (♦)	c, n/o	3965, 3701	
<i>Oxandra xylopioides</i> Diels (♦)	c, d, e	2541, 3712, 4119	
<i>Oxandra</i> sp.	d	4068	
<i>Unonopsis guatterioides</i> (A.DC.) R.E. Fr. (♦)	d	4106/4107	
<i>Xylopia amazonica</i> R.E. Fr.	d	4105	
<i>Xylopia benthamii</i> R.E. Fr. (♦)	e	4133	
<i>Xylopia cuspidata</i> Diels (♦)	d	3720/3721	
<i>Xylopia multiflora</i> R.E. Fr. (♦)	(?)	3842	
Apocynaceae			
<i>Aspidosperma carapanauba</i> Pichon	d	4062	
<i>Aspidosperma multiflorum</i> A. DC.	m	4026	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Aspidosperma nitidum</i> Benth. ex Müll. Arg.	c	2556	species
<i>Aspidosperma rigidum</i> Rusby (♦)	a/b	2510	
<i>Lacmellea floribunda</i> (Poeppig.) Benth.	c	2520	species
<i>Macoubea guianensis</i> Aubl. (♦)	(?)	3830	
<i>Rauvolfia pentaphylla</i> (Huber) Ducke	n	3906	
<i>Tabernaemontana angulata</i> Mart. ex Müll. Arg.	e	3760	
<i>Tabernaemontana linkii</i> A.DC. (♦)	f	2584	
<i>Tabernaemontana undulata</i> Vahl	c	2528	
<i>Tabernaemontana</i> sp.	h	2623	
Araceae			
<i>Heteropsis flexuosa</i> var. <i>flexuosa</i> (Kunth) G.S.Bunting (♦)	e	4122	
Araliaceae			
<i>Schefflera morototoni</i> (Aubl.) Maguire, Steyerl. & Frodin (♦)	k	3803	
sp. 1	h	2621	
sp. 2	d	4047	
Arecaceae			
<i>Bactris</i> sp.	l	4010	
<i>Geonoma</i> sp.	l	3997/4003	
<i>Lepidocaryum tenue</i> var. <i>gracile</i> (Mart.) A.J.Hend. (♦)	c	3962	variety
Asteraceae			
<i>Hebeclinium macrophyllum</i> (L.) DC. (♦)	l	3984/3990	
Bignoniaceae			
<i>Handroanthus barbatus</i> (E.Mey.) Mattos	c, e	3877, 4138	
<i>Handroanthus heptaphyllus</i> Mattos	i	3931	species
<i>Jacaranda copaia</i> (Aubl.) D. Don (♦)	a/b	2515	
<i>Jacaranda glabra</i> (DC.) Bureau & K.Schum. (♦)	m	4019	
Bixaceae			
<i>Bixa arborea</i> Huber	(?)	4187	
<i>Cochlospermum orinocense</i> (Kunth) Steud. (♦)	e	4163	
Boraginaceae			
<i>Cordia alliodora</i> (Ruiz & Pav.) Oken (♦)	a/b	2517	
<i>Cordia exaltata</i> Lam. (♦)	e	3752	
<i>Cordia nodosa</i> Lam. (♦)	d, e	3733, 4145	
<i>Cordia tetrandra</i> Aubl. (♦)	c	3956	
Burseraceae			
<i>Crepidospermum goudotianum</i> (Tul.) Triana & Planch. (♦)	d, n/o	4070, 3696	
<i>Protium decandrum</i> (Aubl.) Marchand	c	3881	
<i>Protium krukovii</i> Swart (♦)	c, n	3818, 3895	
<i>Protium polybotryum</i> (Turcz.) Engl.	h	2609	
<i>Protium rhynchophyllum</i> Rusby (♦)	l	3977	species
<i>Protium robustum</i> (Swart) D.M. Porter (♦)	c	2502	
<i>Protium sagotianum</i> Marchand (♦)	f, k	3943, 3798	
<i>Protium tenuifolium</i> (Engl.) Engl.	d, n/o	3732, 3700	
<i>Protium trifoliolatum</i> Engl.	(?)	4179	
<i>Tetragastris altissima</i> (Aubl.) Swart (♦)	a/b, d	2516, 4061	
<i>Tetragastris panamensis</i> (Engl.) Kuntze (♦)	f	3944	
<i>Trattinnickia burserifolia</i> Mart. (♦)	(?)	3834	
<i>Trattinnickia glaziovii</i> Swart (♦)	a/b	2511	
Calophyllaceae			
<i>Calophyllum brasiliense</i> Cambess. (♦)	j	3774	genus
<i>Caraipa densifolia</i> Mart. (♦)	k	3805	
Cannabaceae			
<i>Trema micrantha</i> (L.) Blume (♦)	m	4041	
<i>Trema</i> sp.	i, k	3935, 1596	
Capparaceae			
<i>Capparis frondosa</i> Jacq..	d	4085	species
Caricaceae			
<i>Jacaratia spinosa</i> (Aubl.) A. DC. (♦)	f, m	2577, 4030	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
Caryocaraceae			
<i>Caryocar glabrum</i> Pers. (♦)	c	3819	
<i>Caryocar microcarpum</i> Ducke	m	4021	
<i>Caryocar villosum</i> (Aubl.) Pers.	(?)	3866	
<i>Caryocar</i> sp.	(?)	3829	
Celastraceae			
<i>Cheiloclinium cognatum</i> (Miers) A.C. Sm. (♦)	c, d, n/o	2633, 4053, 3688	
<i>Goupia glabra</i> Aubl.	k	3793	
<i>Maytenus guyanensis</i> Klotzsch ex Reissek	c	3822	
Chrysobalanaceae			
<i>Hirtella hispidula</i> Miq. (♦)	e	4123	
<i>Hirtella racemosa</i> Lam. (♦)	e, h, l	3740, 2608, 3994	
<i>Licania licaniiiflora</i> (Sagot) S.F. Blake (♦)	(?)	3831	species
<i>Licania octandra</i> (Hoffmanns. ex Roem. & Schult.) Kuntze (♦)	g	2624	
<i>Licania sclerophylla</i> (Hook.f.) Fritsch (♦)	m	4017	
Clusiaceae			
<i>Chrysochlamys weberbaueri</i> Engl. (♦)	d	3714/4065	
<i>Garcinia brasiliensis</i> Mart.	e, l	4149, 4008	species
<i>Garcinia macrophylla</i> Mart. (♦)	l	4013	
<i>Garcinia madruno</i> (Kunth) Hammel (♦)	f	2568	species
<i>Moronobea coccinea</i> Aubl.	(?)	3843	
<i>Symphonia globulifera</i> L.f. (♦)	c	3955	
<i>Tovomita brasiliensis</i> (Mart.) Walp.	c, d	2595, 4109	
<i>Tovomita umbellata</i> Benth.	c	2562	species
<i>Tovomitidium speciosum</i> (Ducke) Ducke	(?)	3826	genus
Combretaceae			
<i>Buchenavia guianensis</i> Alwan & Stace	c	2600	
Commelinaceae			
<i>Dichorisandra hexandra</i> (Aubl.) Kuntze ex Hand.-Mazz. (♦)	m	4043	
<i>Dichorisandra</i> sp.	l	4015	
Costaceae			
<i>Chamaecostus congestiflorus</i> (Rich. ex Gagnep.) C. Specht & D.W. Stev.	h	2617	species
Elaeocarpaceae			
<i>Sloanea garckeana</i> K. Schum. (♦)	c	3966	species
Erythroxylaceae			
<i>Erythroxylum anguifugum</i> Mart.	i, n/o	3930, 3707	
Euphorbiaceae			
<i>Acalypha cuneata</i> Poepp. (♦)	n/o	3703	
<i>Acalypha diversifolia</i> Jacq. (♦)	e	4136	
<i>Acalypha macrostachya</i> Jacq. (♦)	e	4135	
<i>Actinostemon amazonicus</i> Pax. & K. Hoffm. (♦)	f	2585	
<i>Alchornea schomburgkii</i> Klotzsch (♦)	i	3928	
<i>Alchorneopsis floribunda</i> (Benth.) Müll.Arg. (♦)	c, f	3812, 3937	
<i>Aparisthmium cordatum</i> Baill. (♦)	d, f	4060, 3942	
<i>Caryodendron amazonicum</i> Ducke (♦)	d	4057	genus
<i>Conceveiba guianensis</i> Aubl. (♦)	n	3897	
<i>Croton cajucara</i> Benth.	m	4040	
<i>Croton</i> sp.	l	3980	
<i>Dodecastigma amazonicum</i> Ducke (♦)	c	2630	
<i>Dodecastigma integrifolium</i> (Lanj.) Lanj. & Sandwith	c	2531/2505	
<i>Hevea brasiliensis</i> (Willd. ex A. Juss.) Müll. Arg. (♦)	(?)	3828	
<i>Mabea occidentalis</i> Benth.	c	3961	
<i>Mabea piriri</i> Aubl. (♦)	a/b	2509	
<i>Pausandra trianae</i> (Müll.Arg.) Baill. (♦)	e	4129	
<i>Sapium marmieri</i> Huber (♦)	e, n/o	3748, 3690	
<i>Sapium pallidum</i> (Müll.Arg.) Huber (♦)	c	3873	
sp. 1	d	4050	
Gesneriaceae			
<i>Drymonia coccinea</i> (Aubl.) Wiehler (♦)	d	3717	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
Humiriaceae			
<i>Endopleura uchi</i> (Huber) Cuatrec. (♦)	(?)	4176	
Hypericaceae			
<i>Vismia lateriflora</i> Ducke (♦)	f	2567	species
<i>Vismia</i> sp.	c	2592	
Lauraceae			
<i>Aiouea laevis</i> (Nees ex Mart.) Kosterm	c, f	2501, 2588	
<i>Aniba canelilla</i> (Kunth) Mez (♦)	k	3809	
<i>Endlicheria</i> cf. <i>sericea</i> Nees	c	2554	species
<i>Licaria</i> cf. <i>pachycarpa</i> (Meisn.) Kosterm.	m	4035	species
<i>Licaria</i> sp.	n	3894	
<i>Misanteca</i> cf. <i>martiniana</i> (Mez) Lundell	n/o	3684	species
<i>Nectandra cuspidata</i> Nees (♦)	j	3786	
<i>Ocotea canaliculata</i> (Rich.) Mez	f	2589/3939	species
<i>Ocotea cujumary</i> Mart. (♦)	f	3945	
<i>Ocotea glomerata</i> (Nees) Mez	c	2602	species
<i>Ocotea guianensis</i> Aubl. (♦)	n/o	3709	
<i>Ocotea tomentella</i> Sandwith	k	3795	species
<i>Ocotea</i> sp.	c	2544	
Lecythidaceae			
<i>Bertholletia excelsa</i> Bonpl. (♦)	h	2610	
<i>Cariniana micrantha</i> Ducke (♦)	c	2561	
<i>Couratari macrosperma</i> A.C. Sm. (♦)	c, d	2565, 4054	
<i>Couratari multiflora</i> (Sm.) Eyma	k	3810	
<i>Eschweilera decolorans</i> Sandwith	(?)	3827	species
<i>Eschweilera pedicellata</i> (Rich.) S.A. Mori (♦)	a/b	2518	
<i>Gustavia hexapetala</i> (Aubl.) Smith (♦)	e	3744/4165	
<i>Gustavia poeppigiana</i> O. Berg (♦)	d, e	3715, 4143	
Leguminosae - Caesalpinioideae			
<i>Apuleia leiocarpa</i> (Vogel) J.F. Macbr. (♦)	c, e	3880, 3743	
<i>Bauhinia unguolata</i> L. (♦)	k	3806	
<i>Campsiandra comosa</i> var. <i>laurifolia</i> (Benth.) Cowan	c	3876	
<i>Copaifera langsdorffii</i> Desf.	d	4087	
<i>Copaifera multijuga</i> Hayne	e	3767	
<i>Crudia amazonica</i> Spruce ex Benth.	c	3958	
<i>Cynometra marginata</i> Benth.	c	2507	species
<i>Cynometra spruceana</i> var. <i>spruceana</i> Benth.	f	3946	species
<i>Hymenaea courbaril</i> L. (♦)	(?)	3841	
<i>Hymenaea oblongifolia</i> Huber (♦)	c	2527	
<i>Macrobium acaciifolium</i> (Benth.) Benth. (♦)	f	2575	
<i>Macrobium angustifolium</i> (Benth.) R.S. Cowan	c, f	2506, 2576	species
<i>Macrobium campestre</i> Huber (♦)	c	3815	
<i>Macrobium limbatum</i> Spruce ex Benth. (♦)	c	2549	species
<i>Peltogyne paniculata</i> Benth.	(?)	3868	
<i>Peltogyne paniculata</i> subsp. <i>paniculata</i> (Benth.) M.F. Silva	c	2553	subspecies
<i>Poeppigia procera</i> C. Presl (♦)	c, e, j, n/o	2533, 4112, 3781, 3697	
<i>Tachigali paniculata</i> Aubl. (♦)	(?)	3872	
<i>Tachigali</i> cf. <i>multijuga</i> Benth.	n/o	3694	species
<i>Tachigali</i> cf. <i>rugosa</i> (Mart. ex Benth.) Zarucchi & Pipoly	d	4079	species
<i>Tachigali</i> cf. <i>setifera</i> (Ducke) Zarucchi & Herend.	j	3778	
<i>Zollernia paraensis</i> Huber	h	2620	
Leguminosae - Mimosoideae			
<i>Abarema jupunba</i> (Willd.) Britton & Killip (♦)	c, n/o	2503, 3711	
<i>Enterolobium schomburgki</i> (Benth.) Benth. (♦)	e	3742	
<i>Inga alba</i> (Sw.) Willd. (♦)	c	2524	
<i>Inga capitata</i> Desv. (♦)	c	2540	
<i>Inga flagelliformis</i> (Vell.) Mart.	c	2596	
<i>Inga ingoides</i> (Rich.) Willd. (♦)	d	4086	
<i>Inga pilosula</i> (Rich.) J.F. Macbr.	e	4141	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Inga sertulifera</i> DC. (♦)	h	2615	
<i>Inga thibaudiana</i> DC. (♦)	k, m	3800, 4031	
<i>Inga</i> cf. <i>ruiziana</i> G.Don (♦)	n/o	3699	
<i>Inga</i> sp.	d, e	4076, 4124	
<i>Parkia multijuga</i> Benth. (♦)	c	2521	
<i>Parkia nitida</i> Miq. (♦)	c	2550	
<i>Parkia</i> cf. <i>gigantocarpa</i> Miq.	c	2537/2545	species
<i>Pseudopiptadenia psilostachya</i> (DC.) Brenan (♦)	c	2522	
<i>Senegalia</i> sp.	d	4084	
<i>Stryphnodendron pulcherrimum</i> (Willd.) Hochr. (♦)	c	2591	
<i>Zygia inaequalis</i> (Willd.) Pittier (♦)	d	3725	
sp. 1	n/o	3686	
Leguminosae - Papilionoideae			
<i>Acosmium nitens</i> (Vogel) Yakovlev	i	3929	
<i>Andira inermis</i> (W. Wright) Kunth ex DC. (♦)	i	3934	
<i>Dinizia excelsa</i> Ducke	a/b	2512	
<i>Ormosia excelsa</i> Benth.	c	3816/3969	
<i>Ormosia paraensis</i> Ducke	m	4028	
<i>Swartzia arborescens</i> (Aubl.) Pittier (♦)	h	2616	
<i>Swartzia flaemingii</i> var. <i>psilonema</i> (Harms) R.S. Cowan	d	4096	species and variety
<i>Swartzia racemosa</i> Benth.	c	3967	species
<i>Swartzia</i> cf. <i>laxiflora</i> Bong. ex Benth. (♦)	c	3813	
<i>Taralea oppositifolia</i> Aubl. (♦)	c	3875/3964	
Linaceae			
<i>Hebepetalum humiriifolium</i> (Planch.) Benth.	n	3905	
<i>Roucheria columbiana</i> Hallier f.	c	3885	species
Loganiaceae			
<i>Potalia amara</i> Aubl. (♦)	m	4027	species
Lythraceae			
<i>Physocalymma scaberrimum</i> Pohl (♦)	k, n/o	1591, 3689	
Malpighiaceae			
<i>Byrsonima aerugo</i> Sagot	c	3886	species
<i>Byrsonima altissima</i> DC.	m	4039	species
<i>Byrsonima</i> sp.	i, l	3936, 3986	
sp. 1	f	3951	
Malvaceae			
<i>Apeiba albiflora</i> Ducke	d, m	3734, 4025	
<i>Apeiba echinata</i> Gaertn.	c, f	2504, 3947	
<i>Apeiba glabra</i> Aubl. (♦)	e	4150	species
<i>Ceiba crispiflora</i> (Kunth) Ravenna	a/b	2514	species
<i>Eriotheca globosa</i> (Aubl.) A. Robyns (♦)	k	3794	
<i>Helicteres pentandra</i> L.	d	4080	
<i>Heliocarpus americanus</i> L. (♦)	l	4004	
<i>Luehea speciosa</i> Willd.	e	4153	species
<i>Matisia cordata</i> Bonpl. (♦)	e	4147	species
<i>Matisia ochrocalyx</i> K. Schum. (♦)	c, e	2539, 3756	
<i>Matisia</i> sp.	n/o	3698	
<i>Mollia lepidota</i> Spruce ex Benth.	n/o	3685	
<i>Theobroma speciosum</i> Willd. ex Spreng. (♦)	d	4095	
Marantaceae			
<i>Monotagma secundum</i> (Petersen) Schum.	d	3729	species
Marcgraviaceae			
<i>Norantea guianensis</i> Aubl.	h	2548	
Melastomataceae			
<i>Acinodendron burchellii</i> (Triana) Kuntze	n/o	3705	genus
<i>Bellucia aequiloba</i> Pilg. (♦)	c	2536	species
<i>Graffenrieda rupestris</i> Ducke (♦)	n	3901	species
<i>Henriettella ovata</i> Cogn.	f	2579	
<i>Loreya strigosa</i> Gleason (♦)	d	4069	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Meriania urceolata</i> Triana	c	2629	
<i>Miconia affinis</i> DC. (♦)	d	4078	
<i>Miconia kappleri</i> Naudin	m	4190	species
<i>Miconia minutiflora</i> (Bonpl.) DC.	(?)	4173	
<i>Miconia mirabilis</i> (Aubl.) L.O. Williams	n/o	3706	species
<i>Miconia poeppigii</i> Triana (♦)	f, k	2578, 3799	
<i>Miconia prasina</i> (Sw.) DC.	c	3821	
<i>Miconia tomentosa</i> (Rich.) D. Don ex DC. (♦)	e, m	4116, 4189	
<i>Miconia</i> sp.	c	2601	
<i>Mouriri brachyanthera</i> Ducke	e, j	3741, 3788	
<i>Mouriri collocarpa</i> Ducke	j	3790	
<i>Mouriri guianensis</i> Aubl.	e, j	3769, 3782	
Meliaceae			
<i>Guarea gomma</i> Pulle (♦)	k	3804	
<i>Guarea grandifolia</i> DC. (♦)	e	4118	
<i>Guarea guidonia</i> (L.) Sleumer (♦)	l, m	3972, 4038	
<i>Guarea kunthiana</i> A. Juss. (♦)	d, n	4089, 3900	
<i>Guarea pubescens</i> (Rich.) A. Juss. (♦)	d, n/o	4045, 3687	
<i>Guarea silvatica</i> C.DC. (♦)	d	4044	
<i>Guarea velutina</i> A.Juss.	e	4142	
<i>Trichilia cipo</i> (A. Juss) C. DC. (♦)	c, d	2631, 4088	
<i>Trichilia martiana</i> C. DC.	h	2552	
<i>Trichilia pleeana</i> (A. Juss.) C. DC. (♦)	k, n/o	1594, 3683	
<i>Trichilia quadrijuga</i> Kunth (♦)	h, k	2611, 3801	
<i>Trichilia septentrionalis</i> C. DC.	d, l	4093, 3971	
<i>Trichilia</i> cf. <i>micrantha</i> Benth. (♦)	d	4049	
<i>Trichilia</i> sp.	d, e	4099, 4114	
Menispermaceae			
<i>Abuta grandifolia</i> (Mart.) Sandwith (♦)	f	2573	
Monimiaceae			
<i>Mollinedia lanceolata</i> Ruiz & Pav. (♦)	l	4000	species
Moraceae			
<i>Bagassa guianensis</i> Aubl.	l, n/o	4011, 3704	
<i>Brosimum acutifolium</i> subsp. <i>interjectum</i> C.C. Berg	f	3941	species and subspecies
<i>Brosimum lactescens</i> (S. Moore) C.C. Berg (♦)	(?)	3835	
<i>Brosimum potabile</i> Ducke (♦)	(?)	3865	
<i>Brosimum rubescens</i> Taub. (♦)	c	3814	
<i>Castilla ulei</i> Warb. (♦)	e	4157	
<i>Clarisia ilicifolia</i> (Spreng.) Lanj. & Rossberg (♦)	m	4029	
<i>Ficus insipida</i> Willd. (♦)	e	3751	
<i>Ficus maxima</i> Mill. (♦)	n/o	3691	species
<i>Ficus paraensis</i> (Miq.) Miq. (♦)	h	2604	
<i>Helicostylis pedunculata</i> Benoist	d	4064	species
<i>Helicostylis tomentosa</i> (Poepp. & Endl.) Rusby (♦)	j	3772	
<i>Naucleopsis caloneura</i> (Huber) Ducke (♦)	a/b, c, e, h	2513, 2598, 4158, 2614	species
<i>Naucleopsis oblongifolia</i> (Kuhl.) Carauta (♦)	c	3970	species
<i>Perebea mollis</i> subsp. <i>mollis</i> (Poepp. & Endl.) Huber (♦)	c	2563	
<i>Pseudolmedia laevigata</i> Trécul (♦)	c, d	3959, 3716	
<i>Pseudolmedia laevis</i> (Ruiz & Pav.) J.F. Macbr. (♦)	c, d, f	2542, 4075, 3938	
<i>Sorocea guilleminiana</i> Gaudich. (♦)	a/b	2508	
<i>Sorocea muriculata</i> Miq. (♦)	e	4160	
Myristicaceae			
<i>Campsoneura ulei</i> Warb. (♦)	d, f	4082, 2572	
<i>Iryanthera juruensis</i> Warb. (♦)	c, d, e, j	2627, 4081, 4131, 3779	
<i>Iryanthera macrophylla</i> (Benth.) Warb. (♦)	(?)	3833	
<i>Osteophloeum platyspermum</i> (Spruce ex A. DC.) Warb. (♦)	(?)	3847/3853	
<i>Virola calophylla</i> (Spruce) Warb. (♦)	e	4130	
<i>Virola elongata</i> (Benth.) Warb. (♦)	m	4024	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Virola mollissima</i> (Poepp. ex A. DC.) Warb. (♦)	c, k	3957, 3802	
<i>Virola sebifera</i> Aubl. (♦)	d, m	4072, 4023	
<i>Virola surinamensis</i> (Rol. ex Rottb.) Warb. (♦)	(?)	3857/3864	
<i>Virola theiodora</i> (Spruce ex Benth.) Warb.	(?)	3837	
Myrtaceae			
<i>Calyptranthes crebra</i> McVaugh (♦)	c	2525	
<i>Calyptranthes macrophylla</i> O.Berg (♦)	d, e	4073, 4121	species
<i>Calyptranthes</i> cf. <i>pullei</i> Burret ex Amshoff	f	2582	species
<i>Eugenia anastomosans</i> DC.	c	2625	
<i>Eugenia flavescens</i> DC.	l	3979	
<i>Eugenia lambertiana</i> DC.	e	4120	
<i>Eugenia puniceifolia</i> (Kunth) DC.	i	3933	
<i>Myrcia bracteata</i> (Rich.) DC. (♦)	d	3731	
<i>Myrcia</i> cf. <i>eximia</i> DC.	c	3968	
<i>Myrcia</i> cf. <i>splendens</i> (Sw.) DC. (♦)	c, f, m	3891, 2566, 4020	
<i>Myrciaria</i> cf. <i>floribunda</i> (H. West ex Willd.) O. Berg (♦)	h	2619	
Nyctaginaceae			
<i>Guapira</i> sp.	d	3739	
<i>Neea</i> sp.	d	4056	
Olacaceae			
<i>Aptandra tubicina</i> (Poepp.) Benth. ex Miers (♦)	c, f	3878, 2580	
<i>Brachynema ramiflorum</i> Benth.	d	4055	
<i>Dulacia candida</i> (Poepp.) Kuntze (♦)	j	3775	
<i>Heisteria acuminata</i> (Humb. & Bonpl.) Engl. (♦)	e	4161/4162	
<i>Heisteria barbata</i> Cuatrec. (♦)	c	2532	
<i>Heisteria duckei</i> Sleumer (♦)	f	2590	
<i>Heisteria laxiflora</i> Engl. (♦)	c, e	2557, 2635	
Opiliaceae			
<i>Agonandra brasiliensis</i> Miers ex Benth. & Hook. f. (♦)	m	4022	
Peraceae			
<i>Pera bicolor</i> (Klotzsch) Müll. Arg.	(?)	4188	
<i>Pera distichophylla</i> (Mart.) Bail.	f	2586	
<i>Pera eiteniorum</i> Bigio & Secco	m, n/o	4018, 3693	
<i>Pera glabrata</i> (Schott) Poepp. ex Baill. (♦)	e, f	3749, 2587	
Phyllanthaceae			
<i>Amanoa guianensis</i> Aubl.	k	3807	
<i>Hieronyma alchorneoides</i> Allemão var. <i>alchorneoides</i>	l	3998	
<i>Phyllanthus</i> sp.	j	3785	
<i>Richeria</i> sp.	n	3893	
Picramniaceae			
<i>Picramnia latifolia</i> Tul. (♦)	f	3948	
Piperaceae			
<i>Piper anonifolium</i> Kunth	m	4034	
<i>Piper</i> sp.	k, l	2634, 3985	
Polygonaceae			
<i>Symmeria paniculata</i> Benth. (♦)	c	3884	
Primulaceae			
<i>Clavija lancifolia</i> Desf. (♦)	e	4144	
<i>Cybianthus guyanensis</i> subsp. <i>pseudoicacoreus</i> (Miq.) Pipoly	c	2628	subspecies
Proteaceae			
<i>Roupala</i> sp.	e	4117	
Putranjivaceae			
<i>Drypetes</i> sp.	c, l	2538, 4007	
Quiinaceae			
<i>Lacunaria jenmanii</i> (Oliv.) Ducke	c	3892	
<i>Quiina paraensis</i> Pires (♦)	e	4125	
Rhizophoraceae			
<i>Cassipourea guianensis</i> Aubl.	d	4083	
<i>Cassipourea peruviana</i> Alston	c	2559	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Sterigmapetalum obovatum</i> Kuhl.	j	3789	
Rubiaceae			
<i>Alibertia bertierifolia</i> K. Schum. (♦)	f	2569	
<i>Amaioua corymbosa</i> Kunth (♦)	n/o	3708	
<i>Amaioua</i> sp.	c, i	2597, 3953	
<i>Calycophyllum spruceanum</i> (Benth.) Hook. f. ex K. Schum. (♦)	n/o	3692	species
<i>Capirona decorticans</i> Spruce (♦)	d	4059	
<i>Carapichea ipecacuanha</i> (Brot.) L. Andersson	i	3932	species
<i>Chassalia subspicata</i> K. Schum.	h	2607	genus
<i>Cordia macrophylla</i> (K. Schum.) Kuntze	l, n	3992, 3899	species
<i>Coussarea hirticalyx</i> Standl. (♦)	(?)	4178	species
<i>Coussarea</i> cf. <i>macrophylla</i> (Mart.) Müll. Arg.	e	4140	species
<i>Coussarea</i> sp.	c	2535	
<i>Dialypetalanthus fuscescens</i> Kuhl. (♦)	d, j, l	4052, 3780, 3982	
<i>Duroia</i> sp.	h, l	2606, 4009	
<i>Faramea glandulosa</i> Poepp. & Endl. (♦)	d	4101	species
<i>Faramea</i> sp.	f	3949	
<i>Genipa americana</i> L. (♦)	c	2523	
<i>Genipa</i> sp.	l	4012	
<i>Hamelia</i> sp.	l	4001	
<i>Isertia hypoleuca</i> Benth. (♦)	f	2571	
<i>Psychotria poeppigiana</i> Müll. Arg. (♦)	d	3724	
<i>Psychotria</i> cf. <i>racemosa</i> Rich. (♦)	(?)	4172	
<i>Psychotria</i> sp.	d, e	3713, 4051	
<i>Randia armata</i> (Sw.) DC. (♦)	e	4139	
<i>Rudgea</i> sp.	d	4100	
<i>Stachyarrhena acuminata</i> Standl. (♦)	(?)	4186	
<i>Tocoyena</i> cf. <i>brasiliensis</i> Mart.	f	2570	species
Rutaceae			
<i>Conchocarpus ucayalinus</i> (Huber) Kallunki & Pirani (♦)	d	4058	
<i>Dictyoloma vandellianum</i> A. Juss.	k	3808	
<i>Galipea trifoliata</i> Aubl. (♦)	h	2622	
<i>Galipea</i> sp.	l	3995	
<i>Metrodorea flavida</i> K. Krause (♦)	c, d, i, l	2626, 4098, 3927, 3983	
<i>Zanthoxylum rhoifolium</i> Lam. (♦)	m	4033	
<i>Zanthoxylum</i> cf. <i>gardneri</i> Engl.	n/o	3710	species
<i>Zanthoxylum</i> sp.	e, l	3764, 3991	
Salicaceae			
<i>Casearia decandra</i> Jacq. (♦)	j, n	3783, 3896	
<i>Casearia gossypiosperma</i> Briq. (♦)	n, n/o	3898, 3680	
<i>Casearia grandiflora</i> Cambess.	c	2555	
<i>Casearia guianensis</i> (Aubl.) Urb. (♦)	e	3746	species
<i>Casearia javitensis</i> Kunth (♦)	c	2564	
<i>Casearia mariquitensis</i> Kunth (♦)	d	3730	
<i>Casearia negrensis</i> Eichler	d	4046	
<i>Casearia pitumba</i> Sleumer (♦)	h	2603	
<i>Casearia ulmifolia</i> Vahl ex Vent.	j, n/o	3784, 3681	
<i>Hasseltia floribunda</i> Kunth (♦)	e	4155/4156	
<i>Laetia procera</i> (Poepp.) Eichler (♦)	(?)	3832	
<i>Pleuranthodendron lindenii</i> (Turcz.) Sleumer (♦)	d	4094	genus
Sapindaceae			
<i>Allophylus floribundus</i> (Poepp. & Endl.) Radlk. (♦)	e	4152/4154	
<i>Cupania</i> sp.	l	3974	
<i>Paullinia pinnata</i> L.	l	4005	
<i>Talisia retusa</i> R.S. Cowan (♦)	c	3883	
Sapotaceae			
<i>Chrysophyllum argenteum</i> subsp. <i>auratum</i> (Miq.) T.D. Penn. (♦)	c	2546	species and subspecies
<i>Chrysophyllum lucentifolium</i> subsp. <i>pachycarpum</i> Pires & T.D. Penn. (♦)	(?)	4166	
<i>Chrysophyllum</i> sp.	n	3902	

TABLE 1. CONTINUED.

SPECIES/FAMILY	AREA	*VOUCHER	NEW RECORD
<i>Manilkara huberi</i> (Ducke) Standl.	c	2551	
<i>Micropholis guyanensis</i> (A.DC.) Pierre (♦)	c	3874	
<i>Micropholis venulosa</i> (Mart. & Eichler) Pierre (♦)	k	3792	
<i>Planchonella</i> sp.	l	4014	genus
<i>Pouteria cladantha</i> Sandwith (♦)	(?)	3848	
<i>Pouteria elegans</i> (A. DC.) Baehni	c	3728	
<i>Pouteria eugeniifolia</i> (Pierre) Baehni	d	4071	species
<i>Pouteria gongrijpii</i> Eyma	(?)	4174	species
<i>Pouteria macrophylla</i> (Lam.) Eyma (♦)	l, m	4002, 4036	species
<i>Pouteria torta</i> subsp. <i>tuberculata</i> (Sleumer) T.D. Penn. (♦)	c	2558	subspecies
<i>Sarcaulus brasiliensis</i> (A.DC.) Eyma (♦)	(?)	4182	genus
Simaroubaceae			
<i>Simaba orinocensis</i> Kunth (♦)	c	3882	
Siparunaceae			
<i>Siparuna cervicornis</i> Perkins (♦)	h	2612	species
<i>Siparuna decipiens</i> (Tul.) A. DC. (♦)	e, f	3765, 2574	
<i>Siparuna guianensis</i> Aubl. (♦)	c, f	3888, 2583	
<i>Siparuna thecaphora</i> (Poepp. & Endl.) A. DC. (♦)	e	4115	
<i>Siparuna</i> sp.	e	4113	
Solanaceae			
<i>Brunfelsia</i> sp.	l	3988	
<i>Lycianthes sancti-caroli</i> (H. Winkl.) Bitter	l	3989	species
<i>Solanum endopogon</i> (Bitter) Bohs (♦)	d	3736	
<i>Solanum</i> cf. <i>leucocarpon</i> Dunal (♦)	m	4032	
<i>Solanum</i> sp.	l	3987	
Staphyleaceae			
<i>Turpinia occidentalis</i> (Sw.) G.Don (♦)	c, d, e, l, n	2519, 4063, 3755, 3993, 3903	
Styracaceae			
<i>Styrax guianensis</i> Aubl.	e	3762	species
Ulmaceae			
<i>Ampelocera edentula</i> Kuhl. (♦)	e	4164	
Urticaceae			
<i>Pourouma bicolor</i> subsp. <i>bicolor</i> Mart. (♦)	f	3940	
<i>Pourouma guianensis</i> Aubl. (♦)	n	3904	
<i>Pourouma velutina</i> Mart. ex Miq.	k	3796/3797	
<i>Pourouma</i> cf. <i>minor</i> Benoist (♦)	e	4151	
<i>Urera caracasana</i> (Jacq.) Gaudich. ex Griseb. (♦)	e	4148	
<i>Urera laciniata</i> Wedd. (♦)	d	3718	species
Violaceae			
<i>Leonia cymosa</i> Mart. (♦)	d, e	4111, 3754	
<i>Leonia glycyarpa</i> Ruiz & Pav. (♦)	c, j	2593, 3777	
<i>Rinorea flavescens</i> (Aubl.) Kuntze (♦)	c	2560	
<i>Rinorea lindeniana</i> (Tul.) Kuntze (♦)	e	4126/4127	
<i>Rinorea ovalifolia</i> (Britton) S.F. Blake (♦)	d	3737	
<i>Rinorea pubiflora</i> (Benth.) Sprague & Sandwith (♦)	h	2613/2618	
<i>Rinorea racemosa</i> (Mart.) Kuntze (♦)	(?)	4168	
<i>Rinoreocarpus ulei</i> (Melch.) Ducke (♦)	e	3761	
Vochysiaceae			
<i>Qualea acuminata</i> Spruce ex Warm. (♦)	c	2526	
<i>Qualea dinizii</i> Ducke	(?)	3851	
<i>Qualea grandiflora</i> Mart. (♦)	n/o	3682	
<i>Vochysia surinamensis</i> Stapf	(?)	3870	
<i>Vochysia vismiifolia</i> Spruce ex Warm.	c	3820	
Zingiberaceae			
<i>Renealmia monosperma</i> Miq. (♦)	h	2605	species

ACKNOWLEDGMENTS: This work was supported by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and is part of the “REFLORA/CNPq Project: Integração, qualificação e disponibilização dos dados relacionados com coletas botânicas na Amazônia brasileira” coordinated by Michael J. G. Hopkins. In addition, this work would not be possible without the help of Antônio Laffayette da Silveira, who held the collection during the past 10 years. Finally, we would also like to thank the staff of the Herbário Rondoniense (RON) and the kind support of the Federal University of Acre-New York Botanical Garden collaborative research program, which sent a work party to RON funded by the JRS Biodiversity Foundation.

LITERATURE CITED

- Bentes-Gama, M.M., N.S. Pereira, P.H.S. Capelasso, A.K.D. Salman and A.H. Vieira. 2008. *Espécies arbóreas nativas com potencial para recuperação de áreas alteradas em Rondônia*. Porto Velho: Embrapa Rondônia. 29 pp.
- Brandon, K., G.A.B. Fonseca, A.B. Rylands and J.M.C. Silva. 2005. Conservação brasileira: desafios e oportunidades. *Megadiversidade* 1(1): 7–13.
- Browder, J.O., M.A. Pedlowski and R. Walker. 2008. Revisiting Theories of Frontier Expansion in the Brazilian Amazon: A Survey of the Colonist Farming Population in Rondônia's Post-frontier, 1992–2002. *World Development* 36(8): 1469–1492.
- Centro de Referência em Informação Ambiental, CRIA. 2012. Accessible at <http://www.cria.org.br/>. Captured on 20 July 2013.
- Curi, W.J. 2000. *Fortalecimento do setor madeireiro*. Porto Velho: Federação das Indústrias do Estado de Rondônia, FIERO/SEBRAE. 164 pp.
- Daly, D.C. and M. Silveira. 2008. *First Catalogue of the Flora of Acre, Brazil/Primeiro Catálogo da Flora do Acre, Brasil*. Rio Branco: PRINTAC/EDUFAC. 421 pp.
- Euler, A., B. Millikan, E.B. Brito, I.B. Cardozo, J.P. Leroy, L. Caminha, M.I. Hargreaves, R.V. Motta, S. Cunha, S. Matias, V. Alves and V. Glass. 2008. *O Fim Da Floresta? – A Devastação das Unidades de Conservação e Terras Indígenas no Estado de Rondônia*. Rondônia: Grupo de Trabalho Amazônico, GTA Rondônia. 62 pp.
- Holmgren, P.K., N.H. Holmgren and L.C. Barnett. 1990. *Index herbariorum. Part I: The herbaria of the world*. 8^o Ed. New York: New York Botanical Garden. 693 pp.
- INPE. 2012. *Projeto Prodes – Monitoramento da Floresta Amazônica Brasileira por Satélite: Taxas anuais do desmatamento 1988 até 2011*. Accessible at <http://www.obt.inpe.br/prodes/>. Captured on 25 February 2012.
- Laurance, W.F., A.K.M. Albernaz and C. Costa. 2001. Is deforestation accelerating in the Brazilian Amazon? *Environmental Conservation* 28(4): 305–311.
- Lista de Espécies da Flora do Brasil. 2012. Accessible at <http://floradobrasil.jbrj.gov.br/2012>. Captured on 8 February 2013.
- Pedlowski, M.A., V.H. Dale, E.A.T. Matricardi and E.P. S. Filho. 1997. Patterns and impacts of deforestation in Rondônia, Brazil. *Landscape and Urban Planning* 38: 149–157.
- Ribeiro, B., A. Veríssimo and K. Pereira. 2005. O Avanço do Desmatamento sobre as Áreas Protegidas em Rondônia. *O Estado da Amazônia* 6: 1–4.
- Rodrigues, M.G.M. 2002. Redes Transnacionais de Advocacia Pública: Estratégias e Impactos – O Projeto Planaflores e o Painel de Inspeção do Banco Mundial. *Contexto Internacional* 24(1): 73–128.
- SEDAM. 2007. *Zoneamento Socioeconômico-Ecológico do Estado de Rondônia: Um Instrumento de Gestão Ambiental a Serviço do Desenvolvimento Sustentável de Rondônia*. Porto Velho: Secretaria de Estado do Desenvolvimento Ambiental do Governo do Estado de Rondônia. 323 pp.
- The Plant List. 2010. Version 1. Published on the Internet. Accessible at <http://www.theplantlist.org>. Captured on 12 October 2012.
- Tropicos.org 2012. Missouri Botanical Garden. Accessible at <http://www.tropicos.org>. Captured on 09 October 2012.
- World Bank. 1992. *Brazil - Rondonia Natural Resource Management Project*. Washington DC: World Bank. 94 pp.
- World Bank. 1995. *Request for Inspection of Rondonia Natural Resources Management Project (Loan No. 3444-BR) – Additional Review by the Inspection Panel*. Washington DC: World Bank. 126 pp.
- World Bank. 2003. *Implementation Completion Report (CPL-34440) on a Loan in the Amount of US\$ 167.0 Million to the Federative Republic of Brazil for a Rondonia Natural Resources Management Project (Loan 3444-BR)*. Washington DC: World Bank. 69 pp.

RECEIVED: February 2013

ACCEPTED: December 2013

PUBLISHED ONLINE: February 2014

EDITORIAL RESPONSIBILITY: Angelo Gilberto Manzatto