

Table S1. Specimen information for stem anatomical analyses of Nyctaginaceae. Names in bold were used for ontogenetic analysis.

*Species name, Collector/collector number (Herbarium), Locality/Collection source, Stem diameter.* Different collections and their respective information are separated by semicolons.

Taxa	Collector, collector number (Herbarium) <sup>1</sup>	Locality	Habit	Stem diameter (mm) <sup>2,3</sup>
Nyctagineae				
<b><i>Abronia fragrans</i> Nutt. Ex Hook.</b>	Douglas 2290 (FLAS)	Las Cruces, New Mexico, USA	Herb	4
<i>Abronia nealleyi</i> Standl.	Douglas 2281 (FLAS)	Eddy County, Yeso Hills, New Mexico, USA	Herb	2.5
<i>Acleisanthes acutifolia</i> Standl.	Purpus 4753 (US 842034)*	Coahuila, Mexico	Herb	2
<b><i>Acleisanthes chenopodioides</i> (A.Gray) R.A.Levin.</b>	Douglas 2289, 2293 (FLAS)	Las Cruces, New Mexico, USA	Herb	3.5
<i>Acleisanthes lanceolata</i> (Wooton) R.A.Levin	Douglas 2277 (FLAS)	Malone Mountains, Sierra Blanca, Texas, USA	Herb	3.5
<i>Acleisanthes longiflora</i> A.Gray.	Douglas 2279 (FLAS)	Malone Mountains, Sierra Blanca, Texas, USA	Herb	2
<b><i>Allionia incarnata</i> L.</b>	Nee 64124-64126 (USZ); Douglas 2276 (FLAS), 2292	Parque Nacional Amboró, Pampa Grande, Santa Cruz, Bolivia; Malone Mountains, Sierra Blanca, Texas, USA; Luna County, New Mexico, USA	Herb	5
<i>Allionia choisyi</i> Standl.	US 498327	Mesilla Valley, New Mexico, USA	Herb	4
<b><i>Anulocaulis leiosolenus</i> (Torr.) Standl. Var. <i>leiosolenus</i></b>	Douglas 2278 (FLAS)	Malone Mountains, Sierra Blanca, Texas, USA	Herb	12
<i>Boerhavia diffusa</i> L.	Pace 753 (MEXU)	Veracruz, Mexico	Herb	8
<i>Boerhavia hereroensis</i> Heimerl.	Sukhorukov 517 (MW)	Namib Desert, Karas Region, Namibia	Herb	4
<i>Boerhavia wrightii</i> A.Gray.	Douglas 2288 (FLAS)	Las Cruces, New Mexico, USA	Herb	1.5
<b><i>Commicarpus scandens</i> (L.) Standl.</b>	Acevedo-Rodríguez 16250 (US); Douglas 2291 (FLAS)	Tonalá, Oaxaca, Mexico; New Mexico, USA	Scandent-shrub	11.5
<b><i>Cyphomeris gypsophiloides</i> (M. Martens &amp; Galeotti) Standl.</b>	Douglas 2287 (FLAS)	Organ Mountains-Desert Peaks National Monument, Las Cruces, New Mexico, USA	Herb	16

<i>Mirabilis aggregata</i> (Ortega) Cav.	Pace 728 (MEXU, US)	Ixmiquilpan, Hidalgo, Mexico	Herb	12
<b><i>Mirabilis cf. albida</i> (Walter) Heimerl.</b>	Douglas 2286 (FLAS)	New Mexico, USA	Herb	4
<b><i>Mirabilis jalapa</i> L.</b>	Acevedo-Rodríguez 16480 (US)	Veracruz, Mexico	Herb	11
<b><i>Nyctaginia capitata</i> Choisy.</b>	Douglas 2282 (FLAS)	New Mexico, USA	Herb	5
<b><i>Okenia hypogea</i> Schltdl. &amp; Cham.</b>	Pace 749 (MEXU, SPF, US)	Veracruz, Mexico	Herb	5
Pisonieae				
<b><i>Grajaesia fasciculata</i> (Standl.) Miranda.</b>	Pace 765 (MEXU, SPF, US)	Chiapas, Mexico	Scandent-tree	12; trunk
<i>Guapira bracei</i> Britton	Scott 386 (USw 23138)*	Florida, United States of America	Tree	Trunk
<b><i>Guapira pernambucensis</i> (Casar.) Lundell.</b>	Cunha Neto 04-05 (HURB)	Alagoinhas, Bahia	Scandent-shrub	23
<b><i>Guapira graciliflora</i> (Mart. Ex J.A.Schmidt) Lundell.</b>	Cunha Neto 06 (HURB)	Alagoinhas, Bahia	Tree	22
<i>Guapira laxa</i> (Netto) Furlan.	Cunha Neto 08-09 (HURB)	Universidade Estadual de Feira de Santana, Feira de Santana, Bahia	Tree	15; trunk
<i>Guapira linearibracteata</i>	Gentle 481 (USw 29941)*	Belize	Tree	trunk
<i>Neea amplifolia</i>	Pace 720 (US)	Reserva Biológica La Selva, Sarapiquí, Heredia, Costa Rica	Tree	12; trunk
<i>Neea delicatula</i> Standl.	Pace 689 (US)	Reserva Biológica La Selva, Sarapiquí, Heredia, Costa Rica	Tree	15
<b><i>Neea hermafrodita</i> S. Moore</b>	Nee 64112-64113 (USZ)	Jardín Botánico Municipal de Santa Cruz de la Sierra, Santa Cruz de la Sierra, Bolivia	Tree	11.5
<i>Neea laetevirens</i> Standl.	Pace 713, 716 (US); Stern 196 (USw 16154)*	Reserva Biológica La Selva, Sarapiquí, Heredia, Costa Rica; Los Santos, Panamá.	Tree	15; trunk
<i>Neea ovalifolia</i> Spruce ex J.A. Schmidt	Feuillet 10218 (USw 42783)*	Régina, French Guiana	Tree	18.5
<i>Neea psychotrioides</i> Donn. Sm.	Pace 763 (MEXU)	Estación de Biología Tropical Los Tuxtlas, Veracruz, Mexico.	Tree	9
<b><i>Pisonia aculeata</i> L.</b>	Acevedo-Rodríguez 16549 (US)	Bonito, Mato Grosso do Sul, Brazil	Liana	23.5
<i>Pisonia fragrans</i> Dum.Cours.	Stern, 2456 (USw 35502)*	Dominican Republic	Tree	Trunk

<i>Pisonia ligustrifolia</i> Heimerl	Abbott 2251 (USw 1982)*	Hispaniola Island, Dominican Republic	Tree	21
<i>Pisonia zapallo</i> Griseb.	Nee 64110 (USZ)	Jardín Botánico Municipal de Santa Cruz de la Sierra, Santa Cruz de la Sierra, Bolivia	Tree	10
<b><i>Pisoniella arborescens</i> (Lag. &amp; Rodr.) Standl.</b>	Pace 738-739 (MEXU, SPF, US)	Alfajayucan, Hidalgo, Mexico	Liana	15.5
<b><i>Pisoniella glabrata</i> (Heimerl) Standl.</b>	Nee 64137, 64151 (USZ)	Parque Nacional Amboró, Vallegrande, Santa Cruz, Bolivia	Scandent-shrub, liana	11
Bougainvilleae				
<b><i>Belemia fucsioides</i> Pires.</b>	Farney 4887, 4888 (RB); Cunha Neto 16 (SPF), 17	Pedro Canário, Espírito Santo, Brazil	Liana	5
<b><i>Bougainvillea berberidifolia</i> Heimerl.</b>	Nee 64140 (USZ)	Parque Nacional Amboró, Comarapa, Santa Cruz, Bolivia	Shrub	18
<i>Bougainvillea campanulata</i> Heimerl.	Acevedo-Rodríguez 16772 (US); Nee 64142 (USZ)	Mato Grosso do Sul, Brazil; Parque Nacional Amboró, Comarapa, Santa Cruz, Bolivia	Shrub	22
<b><i>Bougainvillea modesta</i> Heimerl.</b>	Nee 64115 (USZ)	Jardín Botánico Municipal de Santa Cruz de la Sierra, Bolivia	Tree	20
<b><i>Bougainvillea stipitata</i> Griseb.</b>	Nee 64121 (USZ)	Parque Nacional Amboró, Samaipata, Santa Cruz, Bolivia	Tree	19
<i>Bougainvillea spectabilis</i> Willd.	Rossetto 453 (RB)	Estrada Carlos Chagas-Teófilo Otoni, Minas Gerais, Brazil	Shrub	14
<i>Phaeoptilum spinosum</i> Radlk.	Dechamps 1213 (MADw 37340)*	Mocamedes, Angola	Shrub	20
Colignonieae				
<b><i>Colignonia glomerata</i> Griseb.</b>	Nee 64157-64159 (USZ)	Parque Nacional Amboró, Samaipata, Santa Cruz, Bolivia	Liana	17
<i>Colignonia rufopilosa</i> Kuntze.	Nee 64061 (USZ)	Cochabamba, Bolivia	Liana	11
Boldoeae				
<i>Cryptocarpus pyriformis</i> Kunth	Fosberg 44705 (US 2833648)*	Galápagos	Liana	5.5
<i>Salpianthus macrodontus</i> Standl.	Annetta 3251 (US 2219249)*	Sinaloa, Mexico	Herb	6
<b><i>Salpianthus purpurascens</i> (Cav. Ex Lag.) Hook. &amp; Arn.</b>	Pace 774 (MEXU, SPF, US)	El Cobanal, Chiapas, Mexico	Shrub	20

<i>Salpianthus arenarius</i> Humb. & Bonpl. Leucastereae	Hinton 10215 (US 1893480)*	Vallecitos, Guerrero, Mexico	Shrub	3
<b><i>Andradea floribunda</i> Allemão</b>	Rossetto 445 (RB); Serviço Florestal 152 (SPFw 5033)*	Linhares, Espírito Santo, Brazil; Distrito Federal, Brazil.	Tree	21; trunk
<b><i>Leucaster caniflorus</i> (Mart.) Choisy</b>	Rossetto 447, 455 (RB)	Linhares, Espírito Santo, Brazil; Teófilo Otoni, Minas Gerais, Brazil	Liana	19
<b><i>Ramisia brasiliensis</i> Oliv.</b>	Rossetto 448 (RB); Serviço Florestal 2614 (SPFw 5035)*	Nanuque, Minas Gerais, Brazil; Minas Gerais, Brazil.	Tree	18; trunk
<b><i>Reichenbachia hirsuta</i> Spreng.</b>	Nee 64109, 64169 (USZ)	Jardín Botánico Municipal de Santa Cruz de la Sierra, Santa Cruz de la Sierra, Bolivia; Rio Grande, Santa Cruz de la Sierra, Bolivia	Shrub	13
<i>Reichenbachia colombiana</i> Stand.	Dugand 979 (SJRw 32385)*	Colombia	Shrub	35

<sup>1</sup> In this list, specimens with asterisk (\*) were obtained in the herbarium or wood collection indicated in parenthesis; the collection number is also indicated.

<sup>2</sup> Largest stem sample for one of the adult specimens analyzed for the anatomical study.

<sup>3</sup> The indication “trunk” means that a sample was obtained from the main stem at ca. 1.30 cm height.

**Collections acronyms:** FLAS, Florida Museum of Natural History; HURB, Universidade Federal do Recôncavo da Bahia; MADw (Forest Products Laboratory, Madison, WI, USA); MEXU, Universidad Nacional Autónoma de México; RB, Jardim Botânico do Rio de Janeiro; SJRW, Samuel J. Record (acquired by the Forest Products Laboratory, Madison, WI, USA) SPF and SPFw, Universidade de São Paulo; US, Smithsonian Institution; USZ, Museo de Historia Natural Noel Kempff Mercado, Universidad Autónoma Gabriel René Moreno.