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Identification of Lianas by stem anatomy and external bark

Caian S. Gerolamo, Cairo F. Figueiredo, André C. Lima, Marcelo R. Pace, Veronica Angyslossy & Gregório C.T. Ceccantini

2021

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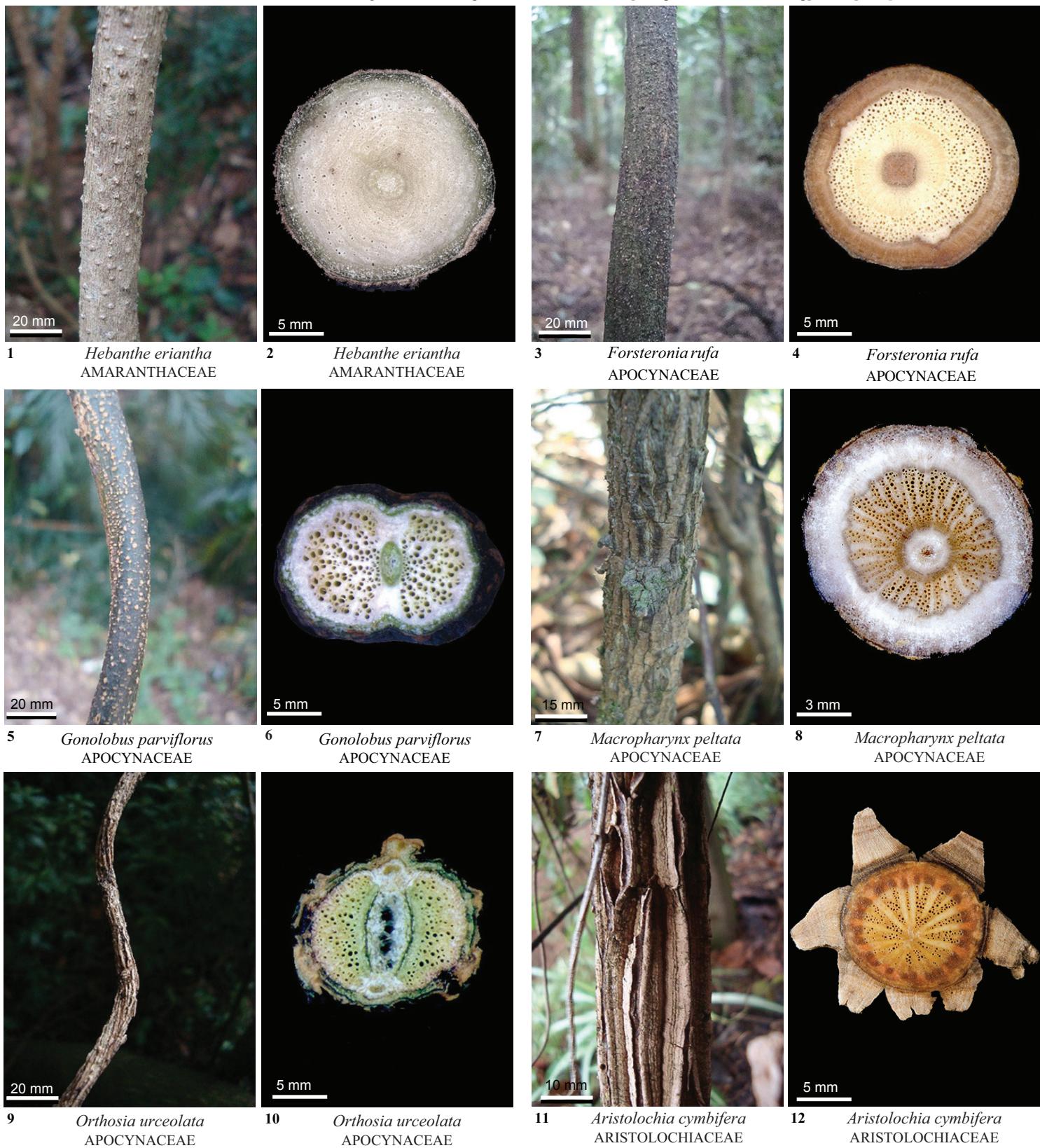
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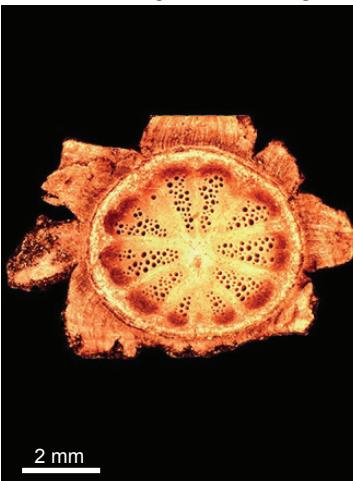
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13 *Aristolochia labiata*
ARISTOLOCHIACEAE



14 *Aristolochia labiata*
ARISTOLOCHIACEAE



15 *Cyrtocymura scorpioides*
ASTERACEAE



16 *Cyrtocymura scorpioides*
ASTERACEAE



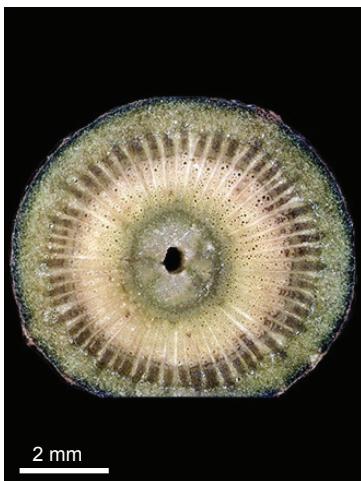
17 *Mikania cordifolia*
ASTERACEAE



18 *Mikania cordifolia*
ASTERACEAE



19 *Mikania glomerata*
ASTERACEAE



20 *Mikania glomerata*
ASTERACEAE



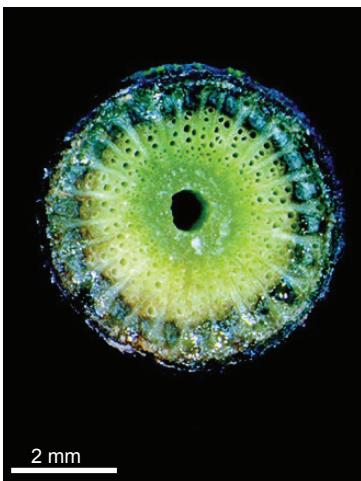
21 *Mikania hirsutissima*
ASTERACEAE



22 *Mikania hirsutissima*
ASTERACEAE



23 *Mikania involucrata*
ASTERACEAE



24 *Mikania involucrata*
ASTERACEAE

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25 *Mikania salvifolia*
ASTERACEAE



26 *Mikania salvifolia*
ASTERACEAE



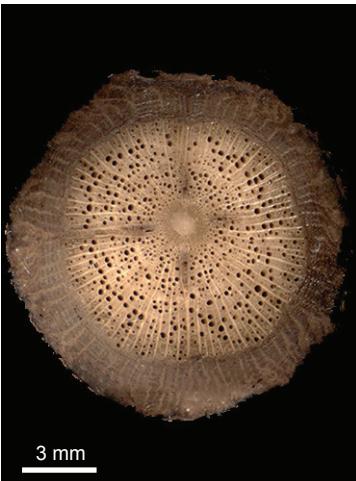
27 *Mikania triangularis*
ASTERACEAE



28 *Mikania triangularis*
ASTERACEAE



29 *Amphilophium crucigerum*
BIGNONIACEAE



30 *Amphilophium crucigerum*
BIGNONIACEAE



31 *Dolichandra unguis-cati*
BIGNONIACEAE



32 *Dolichandra unguis-cati*
BIGNONIACEAE



33 *Lundia corymbifera*
BIGNONIACEAE



34 *Lundia corymbifera*
BIGNONIACEAE



35 *Mansoa diffcilis*
BIGNONIACEAE



36 *Mansoa diffcilis*
BIGNONIACEAE

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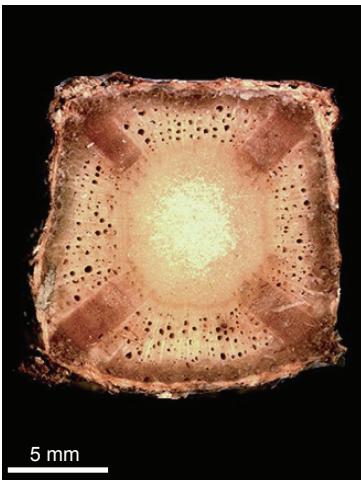
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37 *Pleonotoma tetraqueta*
BIGNONIACEAE



38 *Pleonotoma tetraqueta*
BIGNONIACEAE



39 *Pyrostegia venusta*
BIGNONIACEAE



40 *Pyrostegia venusta*
BIGNONIACEAE



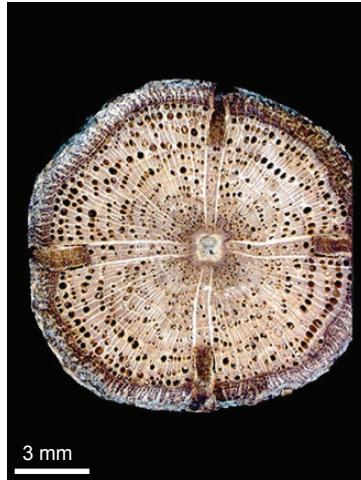
41 *Stizophyllum riparium*
BIGNONIACEAE



42 *Stizophyllum riparium*
BIGNONIACEAE



43 *Tanaecium pyramidatum*
BIGNONIACEAE



44 *Tanaecium pyramidatum*
BIGNONIACEAE



45 *Tynanthus cognatus*
BIGNONIACEAE



46 *Tynanthus cognatus*
BIGNONIACEAE



47 *Myriopus paniculatus*
BORAGINACEAE



48 *Myriopus paniculatus*
BORAGINACEAE

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49 *Ipomoea cairica*
CONVOLVULACEAE



50 *Ipomoea cairica*
CONVOLVULACEAE



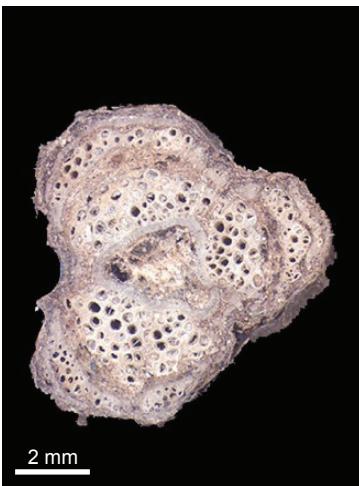
51 *Ipomoea indica*
CONVOLVULACEAE



52 *Ipomoea indica*
CONVOLVULACEAE



53 *Ipomoea saopaulista*
CONVOLVULACEAE



54 *Ipomoea saopaulista*
CONVOLVULACEAE



55 *Wilbrandia verticillata*
CUCURBITACEAE



56 *Wilbrandia verticillata*
CUCURBITACEAE



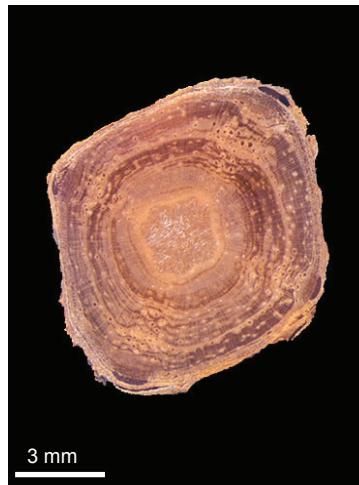
57 *Davilla rugosa*
DILLENIACEAE



58 *Davilla rugosa*
DILLENIACEAE



59 *Senegalia grandistipula*
FABACEAE



60 *Senegalia grandistipula*
FABACEAE

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61 *Canavalia picta*
FABACEAE



62 *Canavalia picta*
FABACEAE



63 *Dalbergia frutescens*
FABACEAE



64 *Dalbergia frutescens*
FABACEAE



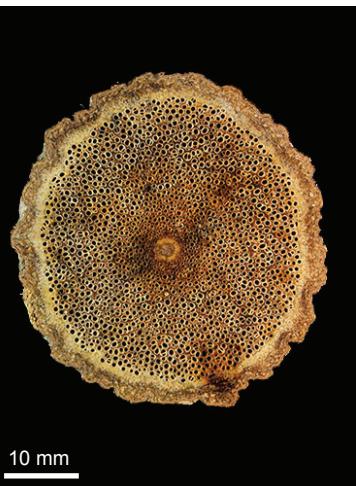
65 *Machaerium oblongifolium*
FABACEAE



66 *Machaerium oblongifolium*
FABACEAE



67 *Macropsychanthus rufescens*
FABACEAE



68 *Macropsychanthus rufescens*
FABACEAE



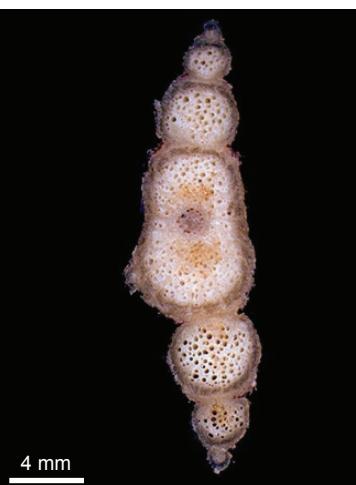
69 *Mimosa velloziana*
FABACEAE



70 *Mimosa velloziana*
FABACEAE



71 *Rhynchosia phaseoloides*
FABACEAE



72 *Rhynchosia phaseoloides*
FABACEAE

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73 *Heteropterys intermedia*
MALPIGHIACEAE



74 *Heteropterys intermedia*
MALPIGHIACEAE



75 *Mascagnia sepium*
MALPIGHIACEAE



76 *Mascagnia sepium*
MALPIGHIACEAE



77 *Cissampelos andromorpha*
MENISPERMACEAE



78 *Cissampelos andromorpha*
MENISPERMACEAE



79 *Odontocarya acuparata*
MENISPERMACEAE



80 *Odontocarya acuparata*
MENISPERMACEAE



81 *Bougainvillea glabra*
NYCTAGINACEAE



82 *Bougainvillea glabra*
NYCTAGINACEAE



83 *Passiflora alata*
PASSIFLORACEAE



84 *Passiflora alata*
PASSIFLORACEAE

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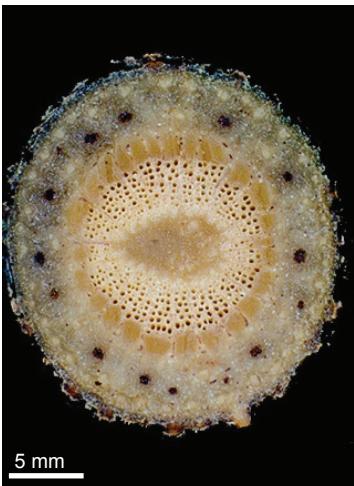
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85 *Manekia obtusa*
PIPERACEAE



86 *Manekia obtusa*
PIPERACEAE



87 *Cobaea scandens*
POLEMONIACEAE



88 *Cobaea scandens*
POLEMONIACEAE



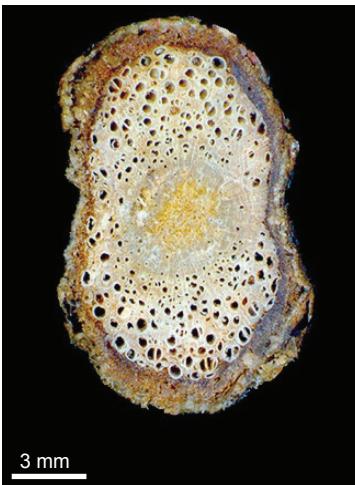
89 *Clematis campestris*
RANUNCULACEAE



90 *Clematis campestris*
RANUNCULACEAE



91 *Paullinia carpopoda*
SAPINDACEAE



92 *Paullinia carpopoda*
SAPINDACEAE



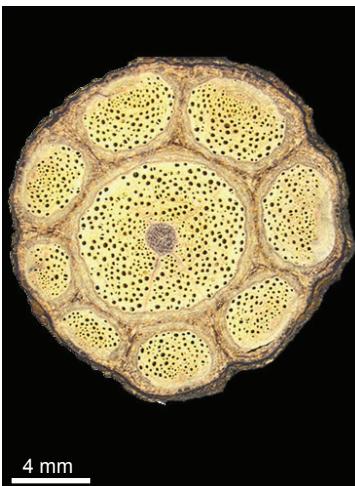
93 *Paullinia seminuda*
SAPINDACEAE



94 *Paullinia seminuda*
SAPINDACEAE



95 *Serjania multiflora*
SAPINDACEAE



96 *Serjania multiflora*
SAPINDACEAE

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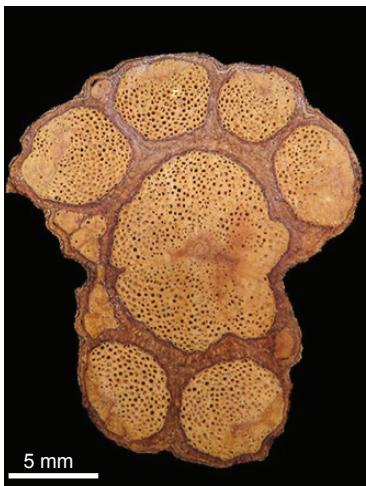
97 *Serjania communis*
SAPINDACEAE



98 *Serjania communis*
SAPINDACEAE



99 *Serjania laruotteana*
SAPINDACEAE



100 *Serjania laruotteana*
SAPINDACEAE



101 *Serjania lethalis*
SAPINDACEAE



102 *Serjania lethalis*
SAPINDACEAE



103 *Urvillea ulmacea*
SAPINDACEAE



104 *Urvillea ulmacea*
SAPINDACEAE



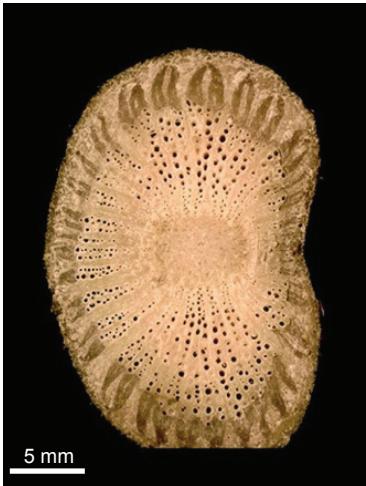
105 *Cissus tinctoria*
VITACEAE



106 *Cissus tinctoria*
VITACEAE



107 *Cissus verticillata*
VITACEAE



108 *Cissus verticillata*
VITACEAE

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Photo number	Photo author	Family	Species	Geographic Coordinates (Datum WGS84)
1	Cairo F Figueiredo	Amaranthaceae	<i>Hebanthe eriantha</i> Poir. Pedersen	23°33'48.20"S 46°43'43.20"W
2	Cairo F Figueiredo	Amaranthaceae	<i>Hebanthe eriantha</i> Poir. Pedersen	23°33'48.20"S 46°43'43.20"W
3	Cairo F Figueiredo	Apocynaceae	<i>Forsteronia rufa</i> Müll.	23°33'55.16"S 46°43'41.05"W
4	Cairo F Figueiredo	Apocynaceae	<i>Forsteronia rufa</i> Müll.	23°33'55.16"S 46°43'41.05"W
5	Cairo F Figueiredo	Apocynaceae	<i>Gonolobus parviflorus</i> Decne.	23°33'59.81"S 46°43'48.57"W
6	Cairo F Figueiredo	Apocynaceae	<i>Gonolobus parviflorus</i> Decne.	23°33'59.81"S 46°43'48.57"W
7	Cairo F Figueiredo	Apocynaceae	<i>Orthosia urceolata</i> E.Fourn.	23°33'53.40"S 46°43'43.26"W
8	Cairo F Figueiredo	Apocynaceae	<i>Orthosia urceolata</i> E.Fourn.	23°33'53.40"S 46°43'43.26"W
9	Cairo F Figueiredo	Apocynaceae	<i>Macropharynx peltata</i> (Vell.) Woodson	23°33'59.10"S 46°43'45.00"W
10	Cairo F Figueiredo	Apocynaceae	<i>Macropharynx peltata</i> (Vell.) Woodson	23°33'59.10"S 46°43'45.00"W
11	Cairo F Figueiredo	Aristolochiaceae	<i>Aristolochia cymbifera</i> Mart. E Zucc.	23°33'56.20"S 46°43'51.50"W
12	Caian S Gerolamo	Aristolochiaceae	<i>Aristolochia cymbifera</i> Mart. E Zucc.	23°33'56.20"S 46°43'51.50"W
13	Cairo F Figueiredo	Aristolochiaceae	<i>Aristolochia labiata</i> Willd.	23°33'56.63"S 46°43'53.33"W
14	Cairo F Figueiredo	Aristolochiaceae	<i>Aristolochia labiata</i> Willd.	23°33'56.63"S 46°43'53.33"W
15	Cairo F Figueiredo	Asteraceae	<i>Cyrtocymura scorpioides</i> (Lam.) H. Rob.	20°34'03.53"S 46°33'49.33"W
16	Cairo F Figueiredo	Asteraceae	<i>Cyrtocymura scorpioides</i> (Lam.) H. Rob.	20°34'03.53"S 46°33'49.33"W
17	Cairo F Figueiredo	Asteraceae	<i>Mikania cordifolia</i> (L.f.) Willd.	23°34'02.50"S 46°43'47.23"W
18	Cairo F Figueiredo	Asteraceae	<i>Mikania cordifolia</i> (L.f.) Willd.	23°34'02.50"S 46°43'47.23"W
19	Cairo F Figueiredo	Asteraceae	<i>Mikania glomerata</i> Spreng.	23°33'55.00"S 46°33'42.00"W
20	Cairo F Figueiredo	Asteraceae	<i>Mikania glomerata</i> Spreng.	23°33'55.00"S 46°33'42.00"W
21	Cairo F Figueiredo	Asteraceae	<i>Mikania hirsutissima</i> DC	20°34'02.09"S 46°33'47.67"W
22	Cairo F Figueiredo	Asteraceae	<i>Mikania hirsutissima</i> DC	20°34'02.09"S 46°33'47.67"W
23	Cairo F Figueiredo	Asteraceae	<i>Mikania involucrata</i> Hook. F. & Arn.	23°33'45.20"S 46°43'40.69"W
24	Cairo F Figueiredo	Asteraceae	<i>Mikania involucrata</i> Hook. F. & Arn.	23°33'45.20"S 46°43'40.69"W
25	Cairo F Figueiredo	Asteraceae	<i>Mikania salvifolia</i> Gardner	23°33'44.61"S 46°43'43.25"W
26	Caian S Gerolamo	Asteraceae	<i>Mikania salvifolia</i> Gardner	23°33'44.61"S 46°43'43.25"W
27	Caian S Gerolamo	Asteraceae	<i>Mikania triangularis</i> Baker	23°33'58.30"S 46°43'46.80"W
28	Cairo F Figueiredo	Asteraceae	<i>Mikania triangularis</i> Baker	23°33'58.30"S 46°43'46.80"W
29	Cairo F Figueiredo	Bignoniaceae	<i>Amphilophium crucigerum</i> (L.) L.G.Lohmann	23°34'00.40"S 46°43'49.10"W
30	Marcelo R Pace	Bignoniaceae	<i>Amphilophium crucigerum</i> (L.) L.G.Lohmann	23°34'00.40"S 46°43'49.10"W
31	Cairo F Figueiredo	Bignoniaceae	<i>Dolichandra unguis-cati</i> (L.) A.H.Gentry	23°33'43.63"S 46°43'43.21"W
32	Caian S Gerolamo	Bignoniaceae	<i>Dolichandra unguis-cati</i> (L.) A.H.Gentry	23°33'43.63"S 46°43'43.21"W
33	Cairo F Figueiredo	Bignoniaceae	<i>Lundia corymbifera</i> (Vahl) Sandwith	23°33'46.94"S 46°43'42.16"W
34	Cairo F Figueiredo	Bignoniaceae	<i>Lundia corymbifera</i> (Vahl) Sandwith	23°33'46.94"S 46°43'42.16"W
35	Cairo F Figueiredo	Bignoniaceae	<i>Mansoa diffcilis</i> (Cham.) Bureau & K. Schum	23°33'50.89"S 46°43'41.79"W
36	Caian S Gerolamo	Bignoniaceae	<i>Mansoa diffcilis</i> (Cham.) Bureau & K. Schum	23°33'50.89"S 46°43'41.79"W
37	Cairo F Figueiredo	Bignoniaceae	<i>Pleonotoma tetraquetra</i> (Cham.)	23°38'54.70"S 47°03'29.80"W
38	Cairo F Figueiredo	Bignoniaceae	<i>Pleonotoma tetraquetra</i> (Cham.)	23°38'54.70"S 47°03'29.80"W
39	Cairo F Figueiredo	Bignoniaceae	<i>Pyrostegia venusta</i> (Ker-Gaw.) Miers	23°33'45.59"S 46°43'42.20"W
40	Cairo F Figueiredo	Bignoniaceae	<i>Pyrostegia venusta</i> (Ker-Gaw.) Miers	23°33'45.59"S 46°43'42.20"W
41	Caian S Gerolamo	Bignoniaceae	<i>Stizophyllum riparium</i> (Kunth) Sandwith	23°33'55.93"S 46°43'44.26"W
42	Caian S Gerolamo	Bignoniaceae	<i>Stizophyllum riparium</i> (Kunth) Sandwith	23°33'55.93"S 46°43'44.26"W
43	Cairo F Figueiredo	Bignoniaceae	<i>Tanaecium pyramidatum</i> (Rich.) L.G.Lohmann	23°33'55.90"S 46°43'42.50"W
44	Cairo F Figueiredo	Bignoniaceae	<i>Tanaecium pyramidatum</i> (Rich.) L.G.Lohmann	23°33'55.90"S 46°43'42.50"W
45	Cairo F Figueiredo	Bignoniaceae	<i>Tynanthus cognatus</i> (Cham.) Miers	23°33'57.80"S 46°43'44.20"W

Identification of Lianas by stem anatomy and external bark

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Photos and co-first authorship: CF Figueiredo and CS Gerolamo [caiansg@gmail.com]. Produced by: authors with the assistance of Valéria Sampaio & Juliana Philipp Field Museum. Support from: CNPq, CAPES and FAPES [2018/06917-7]. This study is part of the master's thesis of Cairo F. Figueiredo.



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Photo number	Photo author	Family	Species	Geographic Coordinates (Datum WGS84)
46	Caian S Gerolamo	Bignoniaceae	<i>Tynanthus cognatus</i> (Cham.) Miers	23°33'57.80"S 46°43'44.20"W
47	Cairo F Figueiredo	Boraginaceae	<i>Myriopus paniculatus</i> (Cham.) Feuillet	23°33'51.52"S 46°43'39.28"W
48	Cairo F Figueiredo	Boraginaceae	<i>Myriopus paniculatus</i> (Cham.) Feuillet	23°33'51.52"S 46°43'39.28"W
49	Cairo F Figueiredo	Convolvulaceae	<i>Ipomoea cairica</i> (L.) Sweet	23°33'57.80"S 46°43'46.80"W
50	Cairo F Figueiredo	Convolvulaceae	<i>Ipomoea cairica</i> (L.) Sweet	23°33'57.80"S 46°43'46.80"W
51	Cairo F Figueiredo	Convolutaceae	<i>Ipomoea indica</i> (Burm. F.) Merr	23°33'47.78"S 46°43'40.56W
52	Cairo F Figueiredo	Convolutaceae	<i>Ipomoea indica</i> (Burm. F.) Merr	23°33'47.78"S 46°43'40.56W
53	Cairo F Figueiredo	Convolutaceae	<i>Ipomoea saopaulista</i> O'Donell	23°33'47.78"S 46°43'40.56W
54	Cairo F Figueiredo	Convolutaceae	<i>Ipomoea saopaulista</i> O'Donell	23°33'47.78"S 46°43'40.56W
55	Cairo F Figueiredo	Curcubitaceae	<i>Wilbrandia verticillata</i> Cogn.	23°33'47.30"S 46°43'44.10" W
56	Cairo F Figueiredo	Curcubitaceae	<i>Wilbrandia verticillata</i> Cogn.	23°33'47.30"S 46°43'44.10" W
57	Cairo F Figueiredo	Dilleniaceae	<i>Davilla rugosa</i> Poir.	23°33'59.60"S 46°43'44.20"W
58	Cairo F Figueiredo	Dilleniaceae	<i>Davilla rugosa</i> Poir.	23°33'59.60"S 46°43'44.20"W
59	Cairo F Figueiredo	Fabaceae	<i>Senegalalia grandistipula</i> (Benth.) Seigler	23°33'56.79"S 46°43'39.39"W
60	Caian S Gerolamo	Fabaceae	<i>Senegalalia grandistipula</i> (Benth.) Seigler	23°33'56.79"S 46°43'39.39"W
61	Cairo F Figueiredo	Fabaceae	<i>Canavalia picta</i> Benth.	23°33'59.55"S 46°43'44.93"W
62	Caian S Gerolamo	Fabaceae	<i>Canavalia picta</i> Benth.	23°33'59.55"S 46°43'44.93"W
63	Cairo F Figueiredo	Fabaceae	<i>Dalbergia frutescens</i> Vell. Britton	23°33'59.50"S 46°43'44.90"W
64	Caian S Gerolamo	Fabaceae	<i>Dalbergia frutescens</i> Vell. Britton	23°33'59.50"S 46°43'44.90"W
65	Cairo F Figueiredo	Fabaceae	<i>Macropsychanthus rufescens</i> (Benth.) L.P.Queiroz & Snak	23°33'57.80"S 46°43'44.60"W
66	Cairo F Figueiredo	Fabaceae	<i>Macropsychanthus rufescens</i> (Benth.) L.P.Queiroz & Snak	23°33'57.80"S 46°43'44.60"W
67	Cairo F Figueiredo	Fabaceae	<i>Machaerium oblongifolium</i> Vog.	23°33'58'40"S 46°43'45.40"W
68	Caian S Gerolamo	Fabaceae	<i>Machaerium oblongifolium</i> Vog.	23°33'58'40"S 46°43'45.40"W
69	Cairo F Figueiredo	Fabaceae	<i>Mimosa velloziana</i> Mart.	23°34'03.62"S 46°43'49.22"W
70	Cairo F Figueiredo	Fabaceae	<i>Mimosa velloziana</i> Mart.	23°34'03.62"S 46°43'49.22"W
71	Cairo F Figueiredo	Fabaceae	<i>Rhynchosia phaseoloides</i> (Sw.) DC.	3°33'45.90"S 46°43'40.40"W
72	Cairo F Figueiredo	Fabaceae	<i>Rhynchosia phaseoloides</i> (Sw.) DC.	3°33'45.90"S 46°43'40.40"W
73	Cairo F Figueiredo	Malpighiaceae	<i>Heteropterys intermedia</i> (A.Juss.) Griseb	23°33'57.69"S 46°43'45.82"W
74	Caian S Gerolamo	Malpighiaceae	<i>Heteropterys intermedia</i> (A.Juss.) Griseb	23°33'57.69"S 46°43'45.82"W
75	Cairo F Figueiredo	Malpighiaceae	<i>Mascagnia sepium</i> (A.Juss.) Griseb	23°33'55.60"S 46°43'42.84"W
76	Caian S Gerolamo	Malpighiaceae	<i>Mascagnia sepium</i> (A.Juss.) Griseb	23°33'55.60"S 46°43'42.84"W
77	Cairo F Figueiredo	Menispermaceae	<i>Cissampelos andromorpha</i> DC.	23°33'44.63"S 46°43'43.09"W
78	Cairo F Figueiredo	Menispermaceae	<i>Cissampelos andromorpha</i> DC.	23°33'44.63"S 46°43'43.09"W
79	Cairo F Figueiredo	Menispermaceae	<i>Odontocarya acuparata</i> Miers	23°34'02.10"S 46°43'43.50"W
80	Cairo F Figueiredo	Menispermaceae	<i>Odontocarya acuparata</i> Miers	23°34'02.10"S 46°43'43.50"W
81	Cairo F Figueiredo	Nyctaginaceae	<i>Bougainvillea glabra</i> Choisy	23°33'48.50"S 46°43'44.60"W
82	Cairo F Figueiredo	Nyctaginaceae	<i>Bougainvillea glabra</i> Choisy	23°33'48.50"S 46°43'44.60"W
83	Cairo F Figueiredo	Passifloraceae	<i>Passiflora alata</i> Curtis	23°33'48.81"S 46°43'40.69"W
84	Cairo F Figueiredo	Passifloraceae	<i>Passiflora alata</i> Curtis	23°33'48.81"S 46°43'40.69"W
85	Cairo F Figueiredo	Piperaceae	<i>Manekia obtusa</i> (Miq.) T.Arias, Callejas & Bornst.	23°33'56.90"S 46°43'44.00"W
86	Cairo F Figueiredo	Piperaceae	<i>Manekia obtusa</i> (Miq.) T.Arias, Callejas & Bornst.	23°33'56.90"S 46°43'44.00"W
87	Cairo F Figueiredo	Polemoniaceae	<i>Cobaea scandens</i> Cav.	23°33'54.69"S 46°43'54.38"W
88	Cairo F Figueiredo	Polemoniaceae	<i>Cobaea scandens</i> Cav.	23°33'54.69"S 46°43'54.38"W
89	Cairo F Figueiredo	Ranunculaceae	<i>Clematis campestris</i> A.St.-Hill.	23°33'57.84"S 46°43'46.66"W
90	Cairo F Figueiredo	Ranunculaceae	<i>Clematis campestris</i> A.St.-Hill.	23°33'57.84"S 46°43'46.66"W

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Photo number	Photo author	Family	Species	Geographic Coordinates (Datum WGS84)
91	Cairo F Figueiredo	Sapindaceae	<i>Paullinia carpopoda</i> Cambess	23°34'03.25"S 46°43'46.20"W
92	Cairo F Figueiredo	Sapindaceae	<i>Paullinia carpopoda</i> Cambess	23°34'03.25"S 46°43'46.20"W
93	Cairo F Figueiredo	Sapindaceae	<i>Paullinia seminuda</i> Radlk	23°34'00.70"S 46°43'45.50"W
94	Cairo F Figueiredo	Sapindaceae	<i>Paullinia seminuda</i> Radlk	23°34'00.70"S 46°43'45.50"W
95	Cairo F Figueiredo	Sapindaceae	<i>Serjania multiflora</i> Cambess.	23°34'0.10"S 46°43'38.60"W
96	Caian S Gerolamo	Sapindaceae	<i>Serjania multiflora</i> Cambess.	23°34'0.10"S 46°43'38.60"W
97	Cairo F Figueiredo	Sapindaceae	<i>Serjania communis</i> Cambess.	23°33'50.90"S 46°43'43.50"W
98	Cairo F Figueiredo	Sapindaceae	<i>Serjania communis</i> Cambess.	23°33'50.90"S 46°43'43.50"W
99	Cairo F Figueiredo	Sapindaceae	<i>Serjania laruotteana</i> Cambess.	23°33'45.30"S 46°43'41.70"W
100	Caian S Gerolamo	Sapindaceae	<i>Serjania laruotteana</i> Cambess.	23°33'45.30"S 46°43'41.70"W
101	Cairo F Figueiredo	Sapindaceae	<i>Serjania lethalis</i> A.St.-Hil.	23°33'58.00"S 46°43'46.60"W
102	Caian S Gerolamo	Sapindaceae	<i>Serjania lethalis</i> A.St.-Hil.	23°33'58.00"S 46°43'46.60"W
103	Cairo F Figueiredo	Sapindaceae	<i>Urvillea ulmacea</i> Kunth	23°33'55.00"S 46°43'44.81"W
104	Cairo F Figueiredo	Sapindaceae	<i>Urvillea ulmacea</i> Kunth	23°33'55.00"S 46°43'44.81"W
105	Cairo F Figueiredo	Vitaceae	<i>Cissus tectoria</i> Mart.	23°33'45.80"S 46°43'42.30"W
106	Cairo F Figueiredo	Vitaceae	<i>Cissus tectoria</i> Mart.	23°33'45.80"S 46°43'42.30"W
107	Cairo F Figueiredo	Vitaceae	<i>Cissus verticillata</i> (L.) Nicolson & C. E. Jarvis	23°33'50.96"S 46°43'41.36"W
108	Cairo F Figueiredo	Vitaceae	<i>Cissus verticillata</i> (L.) Nicolson & C. E. Jarvis	23°33'50.96"S 46°43'41.36"W

Plant material and analyses

Lianas (woody vines) were identified and collected at the Institute of Biosciences of the University of São Paulo, SP, Brazil. After collection, part of the vegetative and reproductive material was herborized and the vouchers of the specimens collected were deposited in the University of São Paulo Herbarium (SPF) and were confirmed by specialists. From the base of the liana, about 1.30 m from the rooting point, we took a photo of the bark and selected one to three samples of the stem (approx. 1.5 - 2.5 cm in diameter) for polishing with razors or waterproof sandpaper of different particle sizes until the transverse surface of the stem sample was smooth, highlighting the anatomical pattern found at the time of collection. After polishing and while still fresh, the cross-sections of the stems were photographed with a camera, highlighting the characteristics seen in the field. For more details on the method and anatomical characteristics of the lianaceous species found, as well as some useful observations on the color of stem or sap released soon after cutting for collection, among other field characters, see the master's thesis of the co-author CF Figueiredo ([https://teses.usp.br/teses/disponiveis/41/41132/tde-23012012-110851 /fr.php](https://teses.usp.br/teses/disponiveis/41/41132/tde-23012012-110851/fr.php)).