

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



1 *Psychotria alfaroana*



2 *Psychotria alfaroana*



3 *Psychotria alfaroana*
thrum flower morph



4 *Psychotria alfaroana*



5 *Psychotria alfaroana*



6 *Psychotria calophylla*



7 *Psychotria calophylla*



8 *Psychotria calophylla*



9 *Psychotria calophylla*
pin flower morph



10 *Psychotria calophylla*



11 *Psychotria carthagensis*



12 *Psychotria carthagensis*
thrum flower morph



13 *Psychotria carthagensis*
pin flower morph



14 *Psychotria carthagensis*



15 *Psychotria chagrensis*



16 *Psychotria chagrensis*



17 *Psychotria chagrensis*



18 *Psychotria chagrensis*
thrum flower morph



19 *Psychotria chagrensis*



20 *Psychotria chiriquina*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



21 *Psychotria chiriquina*



22 *Psychotria chiriquina*



23 *Psychotria chiriquina*



24 *Psychotria chitarihana*



25 *Psychotria chitarihana*



26 *Psychotria chitarihana*



27 *Psychotria chitarihana*
thrum flower morph



28 *Psychotria chitarihana*
thrum flower morph



29 *Psychotria chitarihana*



30 *Psychotria clivorum*



31 *Psychotria clivorum*



32 *Psychotria clivorum*



33 *Psychotria clivorum*



34 *Psychotria cocosensis*
endemic on Cocos Island



35 *Psychotria cocosensis*
endemic on Cocos Island



36 *Psychotria cocosensis*
endemic on Cocos Island



37 *Psychotria cocosensis*
endemic on Cocos Island;
pin flower morph



38 *Psychotria cocosensis*
endemic on Cocos Island



39 *Psychotria convergens*



40 *Psychotria convergens*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

 © Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



41 *Psychotria convergens*



42 *Psychotria convergens*



43 *Psychotria costivenia*



44 *Psychotria costivenia*



45 *Psychotria costivenia*



46 *Psychotria costivenia*



47 *Psychotria graciliflora*



48 *Psychotria graciliflora*



49 *Psychotria graciliflora*



50 *Psychotria graciliflora*
pin flower morph



51 *Psychotria graciliflora*
thrum flower morph



52 *Psychotria graciliflora*



53 *Psychotria grandis*



54 *Psychotria grandis*



55 *Psychotria grandis*



56 *Psychotria grandis*



57 *Psychotria hamiltoniana*



58 *Psychotria hamiltoniana*



59 *Psychotria hamiltoniana*



60 *Psychotria herrerana*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

 © Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



61 *Psychotria herrerana*



62 *Psychotria herrerana*



63 *Psychotria horizontalis*



64 *Psychotria horizontalis*



65 *Psychotria horizontalis*



66 *Psychotria horizontalis*



67 *Psychotria horizontalis*



68 *Psychotria jefensis*



69 *Psychotria jefensis*



70 *Psychotria jefensis*



71 *Psychotria jefensis*



72 *Psychotria jimenezii*



73 *Psychotria jimenezii*



74 *Psychotria jimenezii*



75 *Psychotria jimenezii*
thrum flower morph



76 *Psychotria jimenezii*



77 *Psychotria lamarinensis*



78 *Psychotria lamarinensis*



79 *Psychotria lamarinensis*



80 *Psychotria lamarinensis*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

 © Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



81 *Psychotria laselvensis*



82 *Psychotria laselvensis*



83 *Psychotria laselvensis*



84 *Psychotria laselvensis*



85 *Psychotria laselvensis*
thrum flower morph



86 *Psychotria laselvensis*



87 *Psychotria limonensis*



88 *Psychotria limonensis*



89 *Psychotria limonensis*
thrum flower morph



90 *Psychotria limonensis*



91 *Psychotria limonensis*



92 *Psychotria marginata*



93 *Psychotria marginata*



94 *Psychotria marginata*



95 *Psychotria marginata*
thrum flower morph



96 *Psychotria marginata*
pin flower morph



97 *Psychotria marginata*



98 *Psychotria marginata*



99 *Psychotria mexiae*



100 *Psychotria mexiae*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



101 *Psychotria mexiae*



102 *Psychotria micrantha*



103 *Psychotria micrantha*



104 *Psychotria micrantha*



105 *Psychotria micrantha*
pin flower morph



106 *Psychotria micrantha*



107 *Psychotria micrantha*



108 *Psychotria monteverdensis*



109 *Psychotria monteverdensis*



110 *Psychotria monteverdensis*



111 *Psychotria monteverdensis*



112 *Psychotria monteverdensis*
pin flower morph



113 *Psychotria monteverdensis*



114 *Psychotria monteverdensis*



115 *Psychotria neillii*



116 *Psychotria neillii*



117 *Psychotria neillii*



118 *Psychotria neillii*
pin flower morph



119 *Psychotria neillii*



120 *Psychotria nervosa*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

 © Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



121 *Psychotria nervosa*



122 *Psychotria nervosa*
thrum flower morph



123 *Psychotria nervosa*



124 *Psychotria nervosa*



125 *Psychotria nubiphila*



126 *Psychotria nubiphila*



127 *Psychotria nubiphila*
pin flower morph



128 *Psychotria nubiphila*
pin flower morph



129 *Psychotria nubiphila*



130 *Psychotria nubiphila*



131 *Psychotria orosiana*



132 *Psychotria orosiana*



133 *Psychotria orosiana*



134 *Psychotria orosiana*



135 *Psychotria orosiana*



136 *Psychotria orosiana*



137 *Psychotria orosiodoides*



138 *Psychotria orosiodoides*



139 *Psychotria orosiodoides*



140 *Psychotria panamensis*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



141 *Psychotria panamensis*



142 *Psychotria panamensis*



143 *Psychotria panamensis*
pin flower morph



144 *Psychotria panamensis*



145 *Psychotria panamensis*



146 *Psychotria parvifolia*



147 *Psychotria parvifolia*



148 *Psychotria parvifolia*
thrum flower morph



149 *Psychotria parvifolia*



150 *Psychotria parvifolia*



151 *Psychotria pisonioides*



152 *Psychotria pisonioides*



153 *Psychotria pisonioides*



154 *Psychotria pisonioides*



155 *Psychotria pisonioides*



156 *Psychotria psychotriifolia*



157 *Psychotria psychotriifolia*



158 *Psychotria psychotriifolia*
pin flower morph



159 *Psychotria psychotriifolia*



160 *Psychotria psychotriifolia*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



161 *Psychotria psychotriifolia*



162 *Psychotria remota*



163 *Psychotria remota*



164 *Psychotria remota*



165 *Psychotria remota*



166 *Psychotria remota*



167 *Psychotria saltatrix*



168 *Psychotria saltatrix*



169 *Psychotria saltatrix*



170 *Psychotria saltatrix*



171 *Psychotria saltatrix*



172 *Psychotria sarapiquensis*



173 *Psychotria sarapiquensis*



174 *Psychotria sarapiquensis*



175 *Psychotria sixaolensis*



176 *Psychotria sixaolensis*



177 *Psychotria sixaolensis*



178 *Psychotria sixaolensis*



179 *Psychotria subsessilis*



180 *Psychotria subsessilis*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.

© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



181 *Psychotria subsessilis*
pin flower morph



182 *Psychotria subsessilis*
pin flower morph



183 *Psychotria subsessilis*
thrum flower morph



184 *Psychotria subsessilis*



185 *Psychotria subsessilis*



186 *Psychotria sylvivaga*



187 *Psychotria sylvivaga*



188 *Psychotria sylvivaga*



189 *Psychotria sylvivaga*



190 *Psychotria sylvivaga*



191 *Psychotria tenuifolia*



192 *Psychotria tenuifolia*



193 *Psychotria tenuifolia*



194 *Psychotria tenuifolia*



195 *Psychotria tenuifolia*



196 *Psychotria trichotoma*



197 *Psychotria trichotoma*



198 *Psychotria trichotoma*



199 *Psychotria turubarensis*



200 *Psychotria turubarensis*

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022



201 *Psychotria turubarensis*



202 *Psychotria turubarensis*



203 *Psychotria turubarensis*



204 *Psychotria viridis*



205 *Psychotria viridis*



206 *Psychotria viridis*



207 *Psychotria viridis*

Acknowledgements

Thanks to F. Etl, C. Priemer and J. Schinnerl (all University of Vienna) for company during fieldwork in Costa Rica, and to the La Gamba Field Station, Puntarenas, Costa Rica (University of Vienna, <https://www.lagamba.at>) for logistic support. Further thanks go to M. Kiehn (University of Vienna) and C. M. Taylor (Missouri Botanical Garden) for taxonomic advice and numerous fruitful discussions on Rubiaceae, to L. Álvarez-Alcázar (Osa Conservation) for helpful suggestions for fieldwork, and to all people, institutions and databases for publishing photos under a Creative Commons copyright license, or for granting permission to use them: iNaturalist (<https://www.inaturalist.org>), Wikimedia Commons (<https://commons.wikimedia.org>), J. L. Trusty, the Flórula Digital de la Estación Biológica La Selva (OTS, O. Vargas Ramírez; <https://sura.ots.ac.cr/florula4>), Missouri Botanical Garden (MO, J. Solomon; <https://www.tropicos.org>) and The Field Museum of Natural History (F; <https://www.fieldmuseum.org>).

Costa Rica *Psychotria* (Psychotrieae, Rubiaceae) of Costa Rica

Andreas Berger
University of Vienna

Photos: Andreas Berger [andi.berger@univie.ac.at], except where indicated in Table 1. Produced by Andreas Berger with the assistance of Valéria Sampaio, Field Museum.



© Field Museum (2022) CC BY-NC 4.0. Licensed works are free to use/share/remix with attribution, but commercial use of the original work is not permitted.

[fieldguides.fieldmuseum.org]

[1465] version 1 9/2022

Table 1. Photo credits. The aim of this guide was to cover all *Psychotria* species known from Costa Rica, and the author took most of the above photos there. Photos of other species, either living or from herbarium specimens, by other photographers have been used to supplement them. The respective copyright information and original sources are given below.

| photo no. | species | copyright holder | license | country of photography; link to original photos |
|------------|-------------------------|---------------------------------|----------------------|---|
| 3 | <i>P. alfaroana</i> | Eduardo Chacón-Madrigal | CC BY 4.0 | https://www.inaturalist.org/photos/87236166 |
| 6 | <i>P. calophylla</i> | Andrés Hernández, STRI | CC0 1.0 | https://panamabiota.org/stri/collections/individual/index.php?occid=902806 |
| 7 | <i>P. calophylla</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100304610 |
| 8 | <i>P. calophylla</i> | Andrés Hernández | CC0 1.0 | https://panamabiota.org/stri/collections/individual/index.php?occid=902806 |
| 9 | <i>P. calophylla</i> | Andrés Hernández | CC0 1.0 | https://stricollections.org/portal/collections/individual/index.php?occid=902866 |
| 10 | <i>P. calophylla</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100373290 |
| 14 | <i>P. carthagensis</i> | Michelle Delaloye | CC BY-NC 4.0 | https://www.inaturalist.org/photos/153001955 |
| 23 | <i>P. chiriquina</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100565108 |
| 30 | <i>P. clivorum</i> | Field Museum of Natural History | CC BY-NC 4.0 | https://collections-botany.fieldmuseum.org/catalogue/312562 |
| 31, 32 | <i>P. clivorum</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100373078 |
| 33 | <i>P. clivorum</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100373289 |
| 35 | <i>P. cocoensis</i> | Field Museum of Natural History | CC BY-NC 4.0 | https://collections-botany.fieldmuseum.org/catalogue/312563 |
| 34, 36, 37 | <i>P. cocoensis</i> | Jennifer L. Trusty | used with permission | http://legacy.tropicos.org/Image/100373256 |
| 38 | <i>P. cocoensis</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/313335 |
| 39 | <i>P. convergens</i> | Field Museum of Natural History | CC BY-NC 4.0 | http://legacy.tropicos.org/Image/100005848 |
| 40 | <i>P. convergens</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100388393 |
| 41, 42 | <i>P. convergens</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100372255 |
| 43, 44 | <i>P. costivenia</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/2113964 |
| 45 | <i>P. costivenia</i> | Field Museum of Natural History | CC BY-NC 4.0 | https://collections-botany.fieldmuseum.org/catalogue/312584 |
| 46 | <i>P. costivenia</i> | Field Museum of Natural History | CC BY-NC 4.0 | https://collections-botany.fieldmuseum.org/catalogue/312747 |
| 57, 58 | <i>P. hamiltoniana</i> | Field Museum of Natural History | CC BY-NC 4.0 | http://legacy.tropicos.org/Image/22413 |
| 59 | <i>P. hamiltoniana</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/3425400 |
| 60 | <i>P. herrerana</i> | Field Museum of Natural History | CC BY-NC 4.0 | http://legacy.tropicos.org/Image/100158508 |
| 61, 62 | <i>P. herrerana</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://sura.ots.ac.cr/florula4/find_sp3.php?key_species_code=LS001667 |
| 81, 84, 85 | <i>P. laselvensis</i> | La Selva, Enrique Salicetti | used with permission | https://stricollections.org/portal/collections/individual/index.php?occid=907147 |
| 91 | <i>P. limonensis</i> | Steven Paton | CC0 1.0 | https://identify.plantnet.org/de/central-america/observations/1003809353 |
| 119 | <i>P. neillii</i> | Nelson Zamora Villalobos | CC BY-NC-SA 4.0 | https://stricollections.org/portal/collections/individual/index.php?occid=905396 |
| 124 | <i>P. nervosa</i> | R. Pérez | CC0 1.0 | https://www.inaturalist.org/photos/146534631 |
| 148 | <i>P. parvifolia</i> | Jacob Rehage | CC0 1.0 | http://legacy.tropicos.org/Image/100302434 |
| 164 | <i>P. remota</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100005688 |
| 172, 174 | <i>P. sarapiquensis</i> | Alex K. Monro | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/1471 |
| 173 | <i>P. sarapiquensis</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/313183 |
| 175 | <i>P. sixaolensis</i> | Field Museum of Natural History | CC BY-NC 4.0 | http://legacy.tropicos.org/Image/100568150 |
| 176, 177 | <i>P. sixaolensis</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/347994 |
| 178 | <i>P. sixaolensis</i> | Field Museum of Natural History | CC BY-NC 4.0 | http://legacy.tropicos.org/Image/100132370 |
| 196 | <i>P. trichotoma</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | http://legacy.tropicos.org/Image/100568146 |
| 197, 198 | <i>P. trichotoma</i> | Missouri Botanical Garden | CC BY-NC-SA 3.0 | https://collections-botany.fieldmuseum.org/catalogue/3119249 |
| 204 | <i>P. viridis</i> | Field Museum of Natural History | CC BY-NC 4.0 | https://commons.wikimedia.org/w/index.php?curid=73916115 |
| 205 | <i>P. viridis</i> | A. Benedicto | CC BY-NC-SA 4.0 | https://commons.wikimedia.org/w/index.php?curid=49166115 |
| 206 | <i>P. viridis</i> | CostaPPR | CC BY-NC-SA 4.0 | https://commons.wikimedia.org/w/index.php?curid=49166115 |