



A new species of *Miconia* (Melastomataceae: Miconieae) from the eastern slope of the Peruvian Andes

GILBERTO OCAMPO¹ & FRANK ALMEDA¹

¹California Academy of Sciences, Department of Botany, Institute for Biodiversity Science and Sustainability, 55 Music Concourse Drive, Golden Gate Park, San Francisco, California 94118, USA. E-mail: gocampo@calacademy.org; falmeda@calacademy.org

Abstract

Miconia glandulipetala is described as a new species from the eastern slope of the central Peruvian Andes. This new species is recognized as a member of the “*Leandra* + *Ossaea* (scorpioid)” clade based on its secund flowers and ovoid seeds with testa cells in an aligned pattern and par-convex periclinal walls. The taxon is easily recognized by the presence of 4-merous flowers, 4-locular ovaries, and a subapical glandular hair formed on the margin of each petal.

Resumen

Se describe a *Miconia glandulipetala* como una especie nueva proveniente del área central de los Andes peruanos. El taxón nuevo se identifica como un miembro del clado “*Leandra* + *Ossaea* (escorpioide)” debido a la presencia de flores secundas y semillas ovoides con células dispuestas en un patrón alineado y con paredes anticlinales par-convexas. La especie se reconoce fácilmente por tener flores tetrámetras, ovarios tetraloculares y un pelo glandular subapical formado en el margen de cada pétalo.

Study of herbarium specimens for the Miconieae Planetary Biodiversity Inventory project allowed us to detect an undescribed species from Peru that is a member of the tribe Miconieae. The species, which is known from only one collection, can be placed in *Ossaea* Candolle sect. *Diclemia* (Naudin) Cogniaux (1891: 1062) because of its lateral inflorescences, secund 4-merous flowers with acute petals, and 4-locular ovaries. Molecular analyses have shown that the genera of Miconieae, including *Ossaea* Candolle (1828: 168), are not monophyletic (Goldenberg et al. 2008). One possible solution to this problem includes the recircumscription of *Miconia* Ruiz & Pavón (1794: 60) to incorporate the total range of morphological variation found within the tribe (Ionta et al. 2012). This approach will require the creation of numerous new names and transfers to the genus *Miconia*, which will add to the already complicated taxonomic history of the genus (see Goldenberg et al. 2013 for an account of *Miconia* names). However, Ionta et al. (2012) argue that this may be the best solution to avoid non-monophyly within Miconieae because it would include a clade within the tribe that is diagnosed by the synapomorphy of berry fruits. Because of the large number of accepted *Miconia* names (more than half of the species of the Miconieae), an expanded circumscription under *Miconia* would create less nomenclatural instability than transferring the remaining species names to *Maieta* Aublet (1775: 443) or *Tococa* Aublet (1775: 437), names that have priority under the current code of botanical nomenclature (McNeill et al. 2012). Additionally, *Miconia* is already a conserved name against *Tamonea* Aublet (1775: 411), *Leonicenia* Scopoli (1777: 212), *Lieutatia* Buchoz (1779: 10), and *Zulatia* Necker (1790: 117) (Farr et al. 1979, Goldenberg et al. 2013). An alternative scenario would necessitate the disintegration of large genera into smaller ones, but this approach would likely create dozens of morphologically ill-defined monophyletic genera (Michelangeli et al. unpublished data). Here we opted for describing the new species under *Miconia*, following the expanded *Miconia* approach adopted in the recent literature (e.g., Ionta et al. 2012, Judd & Majure 2013, Majure & Judd 2013, Michelangeli & Meier 2013; but see Goldenberg & Reginato 2013, Reginato & Goldenberg 2013).

Literature cited

- Aublet, J.B.C.F. (1775) *Histoire des plantes de la Guiane Française*, 1. P.F. Didot, London, Paris, 621 pp.
<http://dx.doi.org/10.5962/bhl.title.48831>
- Buchoz, P.J. (1779) *Plantes nouvellement decouvertes recemment denommes et classes*. Edited by the author, Paris, 160 pp.
- Candolle, A.L.P.P. de. (1828) Melastomaceae. In: Candolle, A.L.P.P. de (ed.) *Prodromus systematis naturalis regni vegetabilis* 3. Treuttel et Würtz, Paris, pp. 99–202.
<http://dx.doi.org/10.5962/bhl.title.286>
- Cogniaux, C.A. (1886–1888) Melastomaceae. In: Martius, C.F.P. von (ed.) *Flora Brasiliensis* 14, pt. 4. F. Fleischer, Lipsiae, pp. 1–656.
- Cogniaux, C.A. (1891) Melastomaceae. In: Candolle, A.L.P.P. de & Candolle, A.C.P. de (eds.) *Monographiae Phanerogamarum* 7. G. Masson, Paris, pp. 1–1256.
- Cogniaux, C.A. (1907) Melastomataceae. In: Rusby, H.H. An enumeration of the plants collected in Bolivia by Miguel Bang, part 4. *Bulletin of the New York Botanical Garden* 4: 354–361.
- Farr, E.R., Leussink, J.A. & Stafleu, F.A. (1979) Index Nominum Genericorum (Plantarum) Vol. II – *Eprolithus* – *Peersia*. *Regnum Vegetabile* 101: 631–1276.
- Gleason, H.A. (1930) Studies on the flora of northern South America-XIV. Melastomataceae from Colombia and Ecuador. *Bulletin of the Torrey Botanical Club* 57: 63–75.
- Gleason, H.A. (1937) Some new or noteworthy Melastomes. *Brittonia* 2: 319–327.
<http://dx.doi.org/10.2307/2804757>
- Goldenberg, R. & Reginato, M. (2013) A new reptant species of *Leandra* (Melastomataceae, Miconieae) from the Atlantic Forest, southeastern Brazil. *Phytotaxa* 94: 23–29. <http://dx.doi.org/10.11646/phytotaxa.94.1.3>
- Goldenberg, R., Penneys, D.S., Almeda, F., Judd, W.S. & Michelangeli, F.A. (2008) Phylogeny of *Miconia* (Melastomataceae): patterns of stamen diversification in a megadiverse neotropical genus. *International Journal of Plant Sciences* 169: 963–979.
<http://dx.doi.org/10.1086/589697>
- Goldenberg, R., Almeda, F., Caddah, M.K., Martins, A.B., Meirelles, J., Michelangeli, F.A. & Weiss, M. (2013) Nomenclator botanicus for the neotropical genus *Miconia* (Melastomataceae: Miconieae). *Phytotaxa* 106: 1–171.
<http://dx.doi.org/10.11646/phytotaxa.106.1.1>
- Ionta, G.M., Judd, W.S., Skean, J.D. & McMullen, C.K. (2012) Two new species of *Miconia* sect. *Sagraea* (Melastomataceae) from the Macaya Biosphere Reserve, Haiti, and twelve relevant new species combinations. *Brittonia* 64: 61–72. <http://dx.doi.org/10.1007/s12228-011-9214-0>
- Judd, W.S. (2007) Revision of *Miconia* sect. *Chaenopleura* (Miconieae, Melastomataceae) in the Greater Antilles. *Systematic Botany Monographs* 81: 1–235.
- Judd, W.S. & Majure, L.C. (2013) *Miconia becqueri*, a new species of *Miconia* (Melastomataceae) with strongly flour-lobed ovaries from the Sierra Maestra, Cuba. *Brittonia* 66: 75–81.
<http://dx.doi.org/10.1007/s12228-013-9312-2>
- Macbride, J.F. (1941) Flora of Peru. *Publications of the Field Museum of Natural History, Botany series* 13(4/1): 1–521.
- Majure, L.C. & Judd, W.S. (2013) *Miconia phrynosomaderma* (Melastomataceae: Miconieae), a new species from the Massif du Nord, Haiti, and sixteen new names and combinations. *Journal of the Botanical Research Institute of Texas* 7: 265–274.
- Martin, C.V. & Michelangeli, F.A. (2009) Comparative seed morphology of *Leandra* (Miconieae, Melastomataceae). *Brittonia* 61: 175–188.
<http://dx.doi.org/10.1007/s12228-008-9060-x>
- Martin, C.V., Little, D.P., Goldenberg, R. & Michelangeli, F.A. (2008) A phylogenetic evaluation of *Leandra* (Miconieae, Melastomataceae): a polyphyletic genus where the seeds tell the story, not the petals. *Cladistics* 24: 317–327.
<http://dx.doi.org/10.1111/j.1096-0031.2007.00185.x>
- McNeill, J., Barrie, F.R., Buck, W.R., Demoulin, V., Greuter, W., Hawksworth, D.L., Herendeen, P.S., Knapp, S., Marhold, K., Prado, J., Prud'homme van Reine, W.F., Smith, G.F., Wiersema, J.H. & Turland, N.J. (2012) *International Code of Nomenclature for algae, fungi, and plants (Melbourne Code)*. Koeltz Scientific Books, Koenigstein, 240 pp.
- Michelangeli, F.A. & Meier, W. (2013) A new anisophyllous species of *Miconia* (Melastomataceae: Miconieae) from the Coastal Cordillera in northern Venezuela. *Phytotaxa* 79: 37–44.
<http://dx.doi.org/10.11646/phytotaxa.79.1.3>
- Necker, N.J. (1790) *Elementa Botanica*. Bosange, Paris, 460 pp.
- Pennington, T.D., Reynel, C. & Daza, A. (2004) Illustrated guide to the trees of Peru. David Hunt, Sherborne, 848 pp.
- Radford, A.E., Dickison, W.C., Massey, J.R. & Bell, C.R. (1976) *Vascular Plant Systematics*. Harper & Row, New York, 891 pp.
- Reginato, M. & Goldenberg, R. (2013) Two new species of *Leandra* s.str. (Melastomataceae) from the Atlantic Forest in Espírito Santo, Brazil. *Blumea* 57: 210–214. <http://dx.doi.org/10.3767/000651913X662849>
- Ruiz, H. & Pavón, J.A. (1794) *Flora peruviana, et chilensis prodromus*. Sancha, Madrid, 152 pp.
<http://dx.doi.org/10.5962/bhl.title.11759>
- Scopoli, G.A. (1777) *Introductio ad Historiam Naturalem*. Wolfgangum Gerle, Prague, 540 pp.

<http://dx.doi.org/10.5962/bhl.title.10827>

Sousa, M. & Zárate, S. (1988) *Flora Mesoamericana, glosario para Spermatophyta, español-inglés*. Universidad Nacional Autónoma de México, México, D.F., 88 pp.

Wheeler, Q.D. & Platnick N.I. (2000) The phylogenetic species concept (sensu Wheeler and Platnick). *In*: Wheeler, Q. D. & Meier, R. (eds.) *Species concepts and phylogenetic theory: a debate*. Columbia University Press, New York, pp. 55–69.

Wurdack, J.J. (1964) Melastomataceae. *In*: Maguire, B. & Wurdack, J.J. (eds.) The botany of the Guayana highland 5. *Memoirs of the New York Botanical Garden* 10: 135–186.

Wurdack, J.J. (1973) Certamen Melastomataceis XXII. *Phytologia* 26: 397–409.

<http://dx.doi.org/10.2307/2804774>