



Morphological diagnosis of a new species in *Myrcia* sensu lato (Myrtaceae) from Bahia, Brazil, with molecular highlights

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Abstract

Myrcia marianae, a new species endemic from southern Bahia is described and compared to the related species *Marlierea sucrei* and *Marlierea glabra* using molecular and morphological analyses.

Key words: Atlantic Forest, *Aulomyrcia*, Myrteae, taxonomy, Una

Resumo

Myrcia marianae, uma nova espécie endêmica do sul da Bahia é descrita e comparada através de análises morfológicas e moleculares com as espécies mais próximas: *Marlierea sucrei* e *Marlierea glabra*.

Palavras chave: *Aulomyrcia*, Floresta Atlântica, Myrteae, taxonomia, Una

Introduction

Myrcia De Candolle (1827: 378) s.l. (Lucas *et al.* 2007) is the second-largest Neotropical Myrtaceae genus [after *Eugenia* Linnaeus (1753: 470)] and the second most diverse in the Atlantic Forest (after *Eugenia*) with 226 species (Stehmann *et al.* 2009). The center of diversity of *Myrcia* s.l. is the Atlantic Forest (Murray-Smith *et al.* 2009) although it is widespread in Central and South America and the Caribbean with c.700 spp (Govaerts *et al.* 2014). *Myrcia* s.l. has traditionally been divided into four genera *Calypttranthes* Swartz (1783–87: 79), *Gomidesia* O.Berg (1854: 6), *Myrcia* and *Marlierea* Cambessèdes (1829: 373); the latter two genera have been demonstrated as highly paraphyletic clades (Lucas *et al.* 2007, Lucas *et al.* 2011).

Lucas *et al.* (2011) described nine informal groups in *Myrcia* based on DNA and morphological synapomorphies. One of these informal groups corresponds to *Myrcia* sect. *Aulomyrcia* (O.Berg) Grisebach (1860: 234) (clade nine in Lucas *et al.* 2011) and includes the type species of that section, *Myrcia multiflora* (Lamarck 1789: 202) De Candolle (1828: 244). Section *Aulomyrcia* appears to be one of the oldest clades in *Myrcia* s.l. (Staggemeier *et al.* 2014) and comprises species traditionally described in *Myrcia* and *Marlierea* (Lucas *et al.* 2011, Staggemeier *et al.* 2014). Species of *Myrcia* sect. *Aulomyrcia* are mostly found in lowland Amazonian, the Atlantic forests and the Guyana shields with two species also widespread in other biomes [*Myrcia multiflora* and *Myrcia amazonica* De Candolle (1828: 250)] or at higher elevations (Lucas *et al.* in prep). Murray-Smith *et al.* (2009) stressed the importance of southern Bahia and northern Espírito Santo as a hotspot for *Myrcia* s.l. and the species here newly described from Una, Bahia (Fig. 1), further supports the relevance of this region as a center of diversity.

Conclusion

Marlierea sucrei and *Myrcia marianae* are distinctly different based on their morphology but extremely similar based on the DNA markers sequenced here. Despite extensive searching for more material in Brazilian and international collections and intensive collection of Myrtaceae in other Atlantic forest sites, this is the first and only collection of this species. The decision to describe the taxon as new, especially when based on only a single gathering, was taken in light of the need to record the diversity of the Atlantic forests of eastern Brazil now, in case the extreme reduction of forest to which they have already been subjected becomes complete. Future studies to distinguish *Marlierea sucrei* and *Myrcia marianae* using molecular data will require an increase in the number of molecular markers used or when resources allow, whole genome sequencing.

Acknowledgements

We are grateful to CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico—Brasil) for research funds awarded through edital UNIVERSAL (473468/2010-7) and a sandwich fellowship to VGS to develop part of this research at RBG-Kew, London, UK (236687/2012-3); We are grateful to the Bentham-Moxon Foundation for funds that allowed us to cover lab costs; and, to CAPES for a PhD fellowship to VGS. We also thank the curators of the herbaria for loans or scans of specimens; Jair Q. de Faria for scientific and logistical support; Mariana Bünger for reviewing a previous version of this manuscript and Marcos Sobral for useful discussions. We are especially grateful to Lucia Lohmann, Marcos Sobral and two anonymous reviewers for revising an earlier version of this manuscript. VGS is grateful to all the people that financially or emotionally supported Mariana Rocha dos Santos during her breast cancer treatment, especially to Fernanda Casemiro, Fernanda Mello, Natália Mundim, Nayara Rezende and all professors and colleagues from the Laboratório de Ecologia Teórica e Síntese and Post-Graduation Program in Ecology and Evolution at UFG. Despite her own early self diagnosis of the tumor, precarious public hospitals in Brazil were not able to detect it in this phase and immediately start cancer treatment. When Mariana received the correct diagnosis the tumor had reached 6 cm but she never stopped fighting and was brave to the end. VGS will always be grateful to Mariana for what she taught about friendship, bravery and love.

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