

# TOWARDS A TAXONOMIC REVISION OF THE PAPILIONOID LEGUME GENUS *ALDINA*: LECTOTYPIFICATION OF A NAME PUBLISHED IN *FLORA BRASILIENSIS*

G. RAMOS<sup>1</sup> & D. CARDOSO<sup>1,2</sup>

<sup>1</sup>Programa de Pós-Graduação em Botânica (PPGBot), Universidade Estadual de Feira de Santana, Av. Transnordestina, s.n., 440036-900, Feira de Santana, Bahia, Brazil. E-mail: gustavobotanik@gmail.com

<sup>2</sup>Instituto de Biologia, Universidade Federal da Bahia, Rua Barão de Jeremoabo, s.n., Ondina, 40170-115, Salvador, Bahia, Brazil.

## ABSTRACT

We have revised species names published in *Flora Brasiliensis* as part of an ongoing taxonomic revision of the Amazonian genus *Aldina* Endl. (Leguminosae, Papilionoideae), and found that *A. latifolia* Spruce ex Benth. was established based on three syntype collections. Therefore, a lectotypification is designated based on Spruce's most representative collection.

*Aldina* Endl. (Leguminosae, Papilionoideae) presents a Neotropical distribution and comprises ca. 20 species predominantly in Amazonia. Although *Aldina* is a small genus, some species such as *A. heterophylla* Spruce ex Benth. and *A. latifolia* Spruce ex Benth. are among the most widely distributed angiosperms in Amazonian campina (sandy) and igapó (periodically flooded) forests, respectively (ter Steege et al. 2013). In the Guyana Shield the genus is also listed among the 10 most abundant genera (ter Steege et al. 2006).

*Aldina* has been traditionally classified in the papilionoid tribe Swartzieae because of its radial flowers with an entire calyx and numerous free stamens. The taxonomy of *Aldina* is complicated because it is poorly represented in herbaria and the genus lacks a robust phylogenetic hypothesis. Recent studies, however, have shown the evolutionary branch of *Aldina* with an unexpected placement among the early-branching papilionoid lineages, where it is now placed in the Andira clade, together with the genera *Andira* Lam. and *Hymenolobium* Benth. (Ramos et al. 2016).

As part of a forthcoming complete taxonomic revision of *Aldina*, we have revised the species names published in *Flora Brasiliensis*. Bentham (1870) described four *Aldina* species, most of which were based on single collection, thus they can be unambiguously associated with a type collection. However, we found that the description of *A. latifolia* Spruce ex Benth., the most widespread species of the genus across the Western and Central Amazon, was based on three syntype collections. Therefore, a lectotypification is necessary.

*Aldina latifolia* Spruce ex Benth., Fl. Bras. (Martius) 15 (2): 12, 1870. Lectotype (designated here): Brazil, “*In vicinibus Barra, Prov. Rio Negro, high rocky shores*”, 1851 (fl), R. Spruce 1355 (lectotype K! two sheets; isolectotypes: F photo!, FI photo!, GH photo!, LD photo!, LE photo!, NY photo!, OXF!, P!, TCD photo!).

*Aldina latifolia* was firstly pointed out as a new species in herbarium labels by the British naturalist Richard Spruce (1817–1893), who collected extensively across the Amazon.

Spruce's collections of *A. latifolia* [*Spruce 1355* (K) and *Spruce 2077* (OXF)], as well as another collection by Martius [*Martius s.n.* (M)] were then used by Bentham (1870) in the Flora Brasiliensis for the first taxonomic description of the species. At that time the Code of Botanical Nomenclature did not require a consistent designation of a single type (Art. 40.1; McNeill et al. 2012), hence the typification of the species remained ambiguous, revealing the need for the choice of a lectotype. Cowan (1953) erroneously considered the specimen *Spruce 1355* as the holotype for *A. latifolia* (he actually cited only the duplicate "isotype" specimen at NY that is incompletely labeled without the collector number, as *Spruce s.n.*), because he wanted to describe the new variety *A. latifolia* var. *pubescens* Cowan based on the specimen *Spruce 2077*. We believe that Cowan's (1953) typification decision of *A. latifolia* is unwarranted. Therefore, we choose here the well-preserved specimen *Spruce 1355* as a lectotype, which is also the most taxonomically representative for the original description (Bentham 1870).

#### ACKNOWLEDGEMENTS

The first author thanks the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes-Brazil) for the M.Sc. scholarship. DC also thanks the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for awarding a Research Productivity Fellowship (grant # 306736/2015-2, respectively).

#### LITERATURE CITED

- Bentham, G. 1870. Leguminosae, Swartziaeae et Caesalpinieae. In: Martius, C.F.P.; Eichler, A.W.; Urban, I. Flora Brasiliensis 15(2): 12–13.
- Cowan, R.S. 1953. *Aldina* (Leguminosae, Caesalpinioideae). In: Maguire, B.; Cowan, R.S.; Wurdack, J.J. (Eds.), The botany of the Guayana Highland. Memoirs of the New York Botanical Garden 5: 106–107.
- 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.
- Ramos, G.; Lima, H.C.; Prenner, G.; Queiroz, L.P.; Zartman, C.E.; Cardoso, D. 2016. Molecular systematics of the Amazonian genus *Aldina*, a phylogenetic enigmatic ectomycorrhizal lineage of papilionoid legumes. Molecular Phylogenetics and Evolution 97: 11–18.
- ter Steege, H.; Pitman, N.C.; Phillips, O.L.; Chave, J.; Sebastier, D.; Duque, A.; Molino, J.F.; Prevost, M.F.; Spichiger, R.; Castellanos, H.; von Hilderbrand, P.; Vásquez, R. 2006. Continental-scale patterns of canopy tree composition and function across Amazonia. Nature 443: 444–447.
- ter Steege, H.; Pitman, N.C.A.; Sabatier, D.; Baraloto, C.; Salomão, R.P.; Guevara, J.E.; Phillips, O.L.; Castilho, C.V.; Magnusson, W.E.; Molino, J.F.; Monteagudo, A.; Nuñez Vargas, P.; Montero, J.C.; Feldpausch, T.R.; Coronado, E.N.H.; Killeen, T.J.; Mostacedo, B.; Vasquez, R.; Assis, R.L.; Terborgh, J.; Wittmann, F.; Andrade, A.; Laurance, W.F.; Laurance, S.G.W.; Marimon, B.S.; Marimon, Jr. B.H.; Vieira, I.C.G.; Amaral, I.L.; Brienens, R.; Castellanos, H.; CárdenasLopez, D.; Duivenvoorden, J.F.; Mogollón, H.F.; Matos, F.D.A.; Dávila, N.; GarcíaVillacorta, R.; Diaz, P.R.S.; Costa, F.; Emilio, T.; Levis C.; Schietti J.; Souza, P.; Alonso, A.; Dallmeier, F.; Montoya, A.J.D.; Piedade, M.T.F.; Araujo-Murakami, A.; Arroyo, L.; Gribel, R.; Fine, P.V.A.; Peres, C.A.; Toledo, M.; Aymard, G.A.; Baker, T.R.; Cerón, C.; Engel, J.; Henkel, T.W.; Maas, P.; Petronelli, P.; Stropp, J.; Zartman, C.E.; Daly, D.; Neill, D.; Silveira, M.; Paredes, M.R.; Chave, J.; LimaFilho, D.A.; Jørgensen, P.M.; Fuentes, A.; Schöngart, J.; Valverde, F.C.; Di Fiore, A.; Jimenez, E.M.; Penuela-Mora, M.C.; Phillips, J.F.; Rivas, G.; van Andel, T.R.; von Hildebrand, P.; Hoffman, B.; Zent, E.L.; Malhi, Y.; Prieto, A.; Rudas, A.; Ruschell, A.R.; Silva, N.; Vos, V.; Zent, S.; Oliveira, A.A.; Schutz, A.C.; Gonzales, T.; Nascimento, M.T.; RamirezAngulo, H.; Sierra, R.; Tirado, M.; Medina, M.N.U.; van der Heijden, G.; Vela, C.I.A.; Torre, E.V.; Vriesendorp, C.; Wang, O.; Young, K.R.;

Baider, C.; Balslev, H.; Ferreira, C.; Mesones, I.; TorresLezama, A.; Giraldo, L.E.U.; Zagt, R.; Alexiades, M.N.; Hernandez, L.; Huamantupa-Chuquimaco, I.; Milliken, W.; Cuenca, W.P.; Pauletto, D.; Sandoval, E.V.; Gamarra, L.V.;

Dexter, K.G.; Feeley, K.; LopezGonzalez, G.; Silman, M.R. 2013. Hyperdominance in the Amazonian tree flora. *Science* 342: 1243092.

ISSN 1809-5348 (print), ISSN 2358-2847 (online)

DOI: 10.13102/neod.91.1