

Staminodianthus D.B.O.S.Cardoso, H.C.Lima & L.P.Queiroz

Domingos Benício Oliveira Silva Cardoso

Universidade Federal da Bahia; cardosobot@gmail.com

Gustavo Ramos de Oliveira

Royal Botanic Garden Edinburgh; gustavobotanik@gmail.com

Haroldo Cavalcante de Lima

Jardim Botânico do Rio de Janeiro; hclegume@gmail.com

This treatment is composed of the following taxa: *Staminodianthus*, *Staminodianthus duckei*, *Staminodianthus racemosus*, *Staminodianthus rosae*.

HOW TO CITE

Cardoso, D.B.O.S., Ramos, G., Lima, H.C. 2020. *Staminodianthus* in **Flora do Brasil 2020**. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB129459>.

DESCRIPTION

Small trees to 6 m tall, to large trees to 40 m. **Stipules** 7–9 mm long, linear-lanceolate, persistent only on young branches. **Leaves** imparipinnately compound; petiole and leaf rachis sparsely sericeous with short, ferruginous trichomes to glabrescent; leaf rachis canaliculate along the upper edge, with tufts of minute ferruginous colleters between the bases of each pair of leaflets, stipellate, the stipels sometimes caducous; leaflets (7–)11–21, subopposite to alternate, decreasing in size from apex to base of the leaf rachis, oblong to broadly elliptic, glabrous and sometimes glossy above, sparsely sericeous to glabrescent and strongly papillate below, sometimes densely sericeous along the midvein, apex rounded to obtuse, base truncate or rounded to obtuse, usually asymmetric, margin sometimes slightly revolute, midvein prominent beneath, secondary venation brochidodromous. **Inflorescence** an axillary raceme or a terminal, congested corymbose panicle; tufts of minute ferruginous colleters in the axils of bracts and bracteoles; bracts persistent even after fruit maturity; a pair of opposite bracteoles below the calyx. **Flowers** bilaterally symmetrical, pedicellate; calyx, together with the hypanthium, curved, turbinate-campanulate, sparsely to densely sericeous, trichomes appressed and ferruginous, 5-lobed, lobes unequal, the two upper partially joined, usually tomentose along the margin; petals 5, entirely pinkish, glabrous, crimped or nearly so, the standard petal well-differentiated, without a contrasting coloured central spot, sagittate, clawed, biauriculate, the auricles inflexed and fleshy, the lateral (wing-like) and lower (keel-like) petals undifferentiated in shape and size, elliptic to broadly oval, clawed, auricles absent; androecium composed of 5 large free stamens alternating with 5 short, free staminodes, glabrous, anthers broadly elliptic; gynoecium stipitate, ovary laterally compressed, densely ferruginous-sericeous, ovules 4–6 per ovary, style glabrous, stigma punctiform. **Fruits** indehiscent and laterally-compressed, mostly samaroid, wind-dispersed, oblong, stipitate and with conspicuous reticulate venation and a narrow wing along the placental suture, or when nuroid suborbicular and water-dispersed. **Seeds** 1–4 per fruit, laterally compressed, overgrown.

COMMENTS

Staminodianthus comprises only three species with an exclusive distribution in the Amazon basin of northern Brazil, Colombia, Guyana, Peru, and Venezuela (Cardoso et al. 2013a). Molecular phylogenetic studies have placed *Staminodianthus* as more closely related to *Diploptropis* and *Guianodendron* within the Bowdichia clade (Cardoso et al. 2012, 2013a, 2013b). *Staminodianthus* is quite unique within early-branching papilionoid legumes because of the flowers bearing staminodes,

from which its etymology stems: (from Latin, *staminodium* = staminode) + (Greek, *anthos* = flower). Non-functional stamens or staminodes are uncommon among papilionoid legumes (Polhill & Raven 1981; Lewis et al. 2005). Truly non-functional stamens or short staminodes observed in *Staminodianthus* is a condition also present in the genus *Dioclea*, but it is clearly different from the staminal dimorphism observed, for example, in *Swartzia* and in the *Ormosia*.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Amazonian Campinarana, Cerrado (lato sensu), Inundated Forest (Igapó), Terra Firme Forest, Inundated Forest (Várzea), Ombrophylous Forest (Tropical Rain Forest), Amazonian Savanna

Geographic Distribution

Confirmed occurrences

North (Amazonas, Amapá, Pará)

Central-west (Mato Grosso)

IDENTIFICATION KEY

1. Leaflets mostly 9–23 × 4–10 mm; inflorescence a terminal, congested corymbose panicle; bracts very small, 0.7–1 mm long; fruits (5–)7–12 cm long ***S. duckei***
1. Leaflets mostly 2.5–6 × 1–3 cm; inflorescence an axillary raceme; bracts well over 1 mm long; fruits 3–6.5 cm long 2
2. Bracts 1.2–3 mm long; fruits 1.5–2.5 cm wide, samaroid, oblong to narrowly oblong with a distinct narrow wing on the placental suture, reticulate venation conspicuous, and pericarp membranous to chartaceous ***S. racemosus***
2. Bracts 3.5–6 mm long; fruits 3–5 cm wide, nut-like, suborbicular, rarely oblong, lacking both a wing on the placental suture and reticulate venation, pericarp woody .. ***S. rosae***

REFERENCE

- Cardoso, D., Lima, H.C. de, Rodrigues, R.S., Queiroz, L.P. de, Pennington, R.T. & Lavin, M. 2012. The Bowdichia clade of Genistoid legumes: Phylogenetic analysis of combined molecular and morphological data and a recircumscription of *Diploptropis*. *Taxon* 61: 1074–1087.
- Cardoso, D.; Lima, H.C. & Queiroz, L.P. 2013a. *Staminodianthus*, a new neotropical Genistoid legume genus segregated from *Diploptropis*. *Phytotaxa* 110(1): 1–16.
- Cardoso, D., R. T. Pennington, L. P. de Queiroz, J. S. Boatwright, B.-E. van Wyk, M. F. Wojciechowski & M. Lavin. 2013b. Reconstructing the deep-branching relationships of the papilionoid legumes. *South African Journal of Botany* 89: 58–75.
- Lewis, G., Schrire, B., Mackinder, B. & Lock, M. (eds.). 2005. *Legumes of the World*. Royal Botanic Gardens, Kew, 592 pp.
- Polhill, R.M. & Raven, P.H. (eds.). 1981. *Advances in legume systematics*, part 1. Royal Botanic Gardens, Kew, 425 pp.

Staminodianthus duckei (Yakovlev)

D.B.O.S.Cardoso & H.C.Lima

Has as synonym

basionym *Diploptropis duckei* Yakovlev

heterotypic *Bowdichia racemosa* var. *parvifolia* Ducke

heterotypic *Diploptropis racemosa* var. *parvifolia* (Ducke) Ducke

DESCRIPTION

Leaf: division compound imparipinnate. **Inflorescence: type** panicle terminal. **Flower: symmetry** bilateral zygomorphic. **Fruit: type** samara. **Seed: number** 1 - 4.

ADDITIONAL DESCRIPTION

Small trees to 6 m tall, to large trees to 40 m. **Stipules** 7–9 mm long, linear-lanceolate, persistent only on young branches.

Leaves imparipinnately compound; petiole and leaf rachis sparsely sericeous with short, ferruginous trichomes to glabrescent; leaf rachis canaliculate along the upper edge, with tufts of minute ferruginous colleters between the bases of each pair of leaflets, stipellate, the stipels sometimes caducous; leaflets 9–23 × 4–10, subopposite to alternate, decreasing in size from apex to base of the leaf rachis, oblong to broadly elliptic, glabrous and sometimes glossy above, sparsely sericeous to glabrescent and strongly papillate below, sometimes densely sericeous along the midvein, apex rounded to obtuse, base truncate or rounded to obtuse, usually asymmetric, margin sometimes slightly revolute, midvein prominent beneath, secondary venation brochidodromous.

Inflorescence a terminal, congested corymbose panicle; bracts 0.7–1 mm long. **Flowers** bilaterally symmetrical, pedicellate; calyx, together with the hypanthium, curved, turbinate-campanulate, sparsely to densely sericeous, trichomes appressed and ferruginous, 5-lobed, lobes unequal, the two upper partially joined, usually tomentose along the margin; petals 5, entirely pinkish, glabrous, crimped or nearly so, the standard petal well-differentiated, without a contrasting coloured central spot, sagittate, clawed, biauriculate, the auricles inflexed and fleshy, the lateral (wing-like) and lower (keel-like) petals undifferentiated in shape and size, elliptic to broadly oval, clawed, auricles absent; androecium composed of 5 large free stamens alternating with 5 short, free staminodes, glabrous, anthers broadly elliptic; gynoecium stipitate, ovary laterally compressed, densely ferruginous-sericeous, ovules 4–6 per ovary, style glabrous, stigma punctiform. **Fruit** (5–)7–12 cm long, an oblong, indehiscent, laterally compressed, stipitate samara with conspicuous reticulate venation and a narrow wing along the placental suture, or a suborbicular nut-like fruit. **Seeds** 1–4 per fruit, laterally compressed, overgrown.

COMMENTS

Staminodianthus duckei occurs in non-flooded terra-firme forests on sandy or sand-loam soils in Central Amazonia of Brazil, as well as in Colombia and Peru. There are also records of the species on Amazonian caatingas on sandy soil at São Paulo de Olivença (Upper Solimões river) in Brazil. Flowers were collected from October to December, and fruits from January to March.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types


Terra Firme Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amazonas)

HERBARIUM MATERIAL

A. Ducke, 1461, UC, SI, NY,  (NY00007760), K, IAN, F, A, MG, US, Amazonas, **Typus**

D.B.O.S. Cardoso, 3205, INPA, HUEFS, Amazonas

A. Ducke, s.n., RB, 24058, NY, 1418457,  (NY01418457), LE, K, INPA, Amazonas

J.R. Nascimento, 493, INPA, Amazonas

H.C. Lima, 2776, RB, K, INPA, NY,  (NY01418456), Amazonas

FIELD IMAGES / ILLUSTRATIONS

Figure 1: *Staminodianthus duckei* (Yakovlev) D.B.O.S.Cardoso & H.C.LimaFigure 2: *Staminodianthus duckei* (Yakovlev) D.B.O.S.Cardoso & H.C.Lima



Figure 4: *Staminodianthus duckei* (Yakovlev) D.B.O.S.Cardoso & H.C.Lima

REFERENCE

Cardoso, D.; Lima, H.C. & Queiroz, L.P. 2013. *Staminodianthus*, a new neotropical Genistoid legume genus segregated from *Diploptropis*. *Phytotaxa* 110(1): 1–16.

Staminodianthus racemosus (Hoehne)

D.B.O.S.Cardoso & H.C.Lima

Has as synonym

basionym *Bowdichia racemosa* Hoehne

homotype *Diplotripsis racemosa* (Hoehne) Amshoff

DESCRIPTION

Leaf: division compound imparipinnate. **Inflorescence: type** raceme axillary. **Flower: symmetry** bilateral zygomorphic. **Fruit: type** samara. **Seed: number** 1 - 4.

ADDITIONAL DESCRIPTION

Medium to large-sized **tree** (6–40 m tall). **Stipules** 7–9 mm long, linear-lanceolate, persistent only on young branches. **Leaves** imparipinnately compound; petiole and leaf rachis sparsely sericeous with short, ferruginous trichomes to glabrescent; leaf rachis canaliculate along the upper edge, with tufts of minute ferruginous colleters between the bases of each pair of leaflets, stipellate, the stipels sometimes caducous; leaflets 5 pairs, subopposite to alternate, decreasing in size from apex to base of the leaf rachis, oblong to broadly elliptic, glabrous and sometimes glossy above, sparsely sericeous to glabrescent and strongly papillate below, sometimes densely sericeous along the midvein, apex emarginate, base rounded to obtuse, usually asymmetric, margin sometimes slightly revolute, midvein prominent beneath, secondary venation brochidodromous. **Inflorescence** an axillary raceme; tufts of minute ferruginous colleters in the axils of bracts and bracteoles; bracts 1.2–3 mm long, persistent even after fruit maturity; a pair of opposite bracteoles below the calyx. **Flowers** bilaterally symmetrical, pedicellate; calyx, together with the hypanthium, curved, turbinate-campanulate, sparsely to densely sericeous, trichomes appressed and ferruginous, 5-lobed, lobes unequal, the two upper partially joined, usually tomentose along the margin; petals 5, entirely pinkish, glabrous, crimped or nearly so, the standard petal well-differentiated, without a contrasting coloured central spot, sagittate, clawed, biauriculate, the auricles inflexed and fleshy, the lateral (wing-like) and lower (keel-like) petals undifferentiated in shape and size, elliptic to broadly oval, clawed, auricles absent; androecium composed of 5 large free stamens alternating with 5 short, free staminodes, glabrous, anthers broadly elliptic; gynoecium stipitate, ovary laterally compressed, densely ferruginous-sericeous, ovules 4–6 per ovary, style glabrous, stigma punctiform. **Fruit** 1.5–2.5 cm wide, oblong to narrowly oblong-samaroid with a distinct narrow wing on the placental suture and membranous to chartaceous pericarp with prominent reticulate venation. **Seeds** 1–2 per fruit, laterally compressed, overgrown.

COMMENTS

The species occurs mostly in the Amazonian savannas of northern South America. In Brazil, the species has been found in savanna-like vegetation (campinas and remnants of Cerrado), as well as in Amazonian terra-firme (non-flooded forest) on sandy soil, from the northern extreme of Amazon basin (state of Amapá) to the boundaries of the Central region (southern areas of the states of Pará and Mato Grosso).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Amazonian Campinarana, Cerrado (lato sensu), Amazonian Savanna

Geographic Distribution

Confirmed occurrences

North (Amapá, Pará)


Central-west (Mato Grosso)

HERBARIUM MATERIAL


J.G. Kuhlmann, 388, R, Mato Grosso, **Typus**

M. Emmerich, 4207, RB, Mato Grosso

N.T. Silva, 5473, INPA, Pará

N.T. Silva, 4992, NY,  (NY01450469), RB, Pará

N.A. Rosa, 118, HUEFS, IAN, RB, Mato Grosso

G.T. Prance, 24767, RB, MO, NY,  (NY01450471), Pará

A. Ducke, s.n., RB, MG, 16677, INPA, Pará

M. Sobral, 10865, RB, BHCB, Pará

L. Williams, 18229, NY,  (NY01450468), RB, Pará

M.J.P. Pires, 770, NY, Amapá

M. Macêdo, 2603, INPA, Mato Grosso

FIELD IMAGES / ILLUSTRATIONS

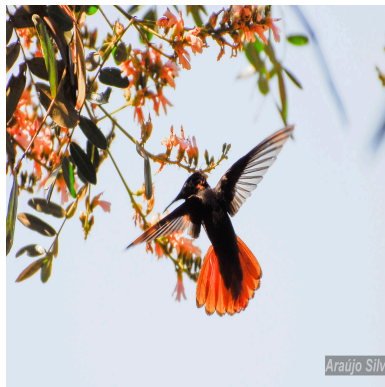
Figure 1: *Staminodianthus racemosus* (Hoehne) D.B.O.S.Cardoso & H.C.LimaFigure 2: *Staminodianthus racemosus* (Hoehne) D.B.O.S.Cardoso & H.C.Lima



Figure 3: *Staminodianthus racemosus* (Hoehne) D.B.O.S.Cardoso & H.C.Lima

REFERENCE

Cardoso, D.; Lima, H.C. & Queiroz, L.P. 2013. *Staminodianthus*, a new neotropical Genistoid legume genus segregated from *Diploptropis*. *Phytotaxa* 110(1): 1–16.

Staminodianthus rosae (H.C.Lima)

D.B.O.S.Cardoso & H.C.Lima

Has as synonym

basionym *Diploptropis racemosa* var. *rosae* H.C.Lima

DESCRIPTION

Leaf: division compound imparipinnate. **Inflorescence: type** raceme axillary. **Flower: symmetry** bilateral zygomorphic. **Fruit: type** samara. **Seed: number** 1 - 4.

ADDITIONAL DESCRIPTION

Large **Tree**. Stipules 7–9 mm long, linear-lanceolate, persistent only on young branches. **Leaves** imparipinnately compound; petiole and leaf rachis sparsely sericeous with short, ferruginous trichomes to glabrescent; leaf rachis canaliculate along the upper edge, with tufts of minute ferruginous colleters between the bases of each pair of leaflets, stipellate, the stipels sometimes caducous; leaflets (7–)11–21, subopposite to alternate, decreasing in size from apex to base of the leaf rachis, oblong to broadly elliptic, glabrous and sometimes glossy above, sparsely sericeous to glabrescent and strongly papillate below, sometimes densely sericeous along the midvein, apex rounded to obtuse, base truncate or rounded to obtuse, usually asymmetric, margin sometimes slightly revolute, midvein prominent beneath, secondary venation brochidodromous. **Inflorescence** a axillary raceme; bracts 3.5–6 mm; tufts of minute ferruginous colleters in the axils of bracts and bracteoles; a pair of opposite bracteoles below the calyx. **Flowers** bilaterally symmetrical, pedicellate; calyx, together with the hypanthium, curved, turbinate-campanulate, sparsely to densely sericeous, trichomes appressed and ferruginous, 5-lobed, lobes unequal, the two upper partially joined, usually tomentose along the margin; petals 5, entirely pinkish, glabrous, crimped or nearly so, the standard petal well-differentiated, without a contrasting coloured central spot, sagittate, clawed, biauriculate, the auricles inflexed and fleshy, the lateral (wing-like) and lower (keel-like) petals undifferentiated in shape and size, elliptic to broadly oval, clawed, auricles absent; androecium composed of 5 large free stamens alternating with 5 short, free staminodes, glabrous, anthers broadly elliptic; gynoecium stipitate, ovary laterally compressed, densely ferruginous-sericeous, ovules 4–6 per ovary, style glabrous, stigma punctiform. **Fruit** 3–5 cm wide, nut-like, water dispersed, suborbicular, rarely oblong, lacking both a wing on the placental suture and reticulate venation, pericarp woody. **Seeds** 1 per fruit, laterally compressed, overgrown.

COMMENTS

Staminodianthus rosae is a large tree known only from igapó forests (flooded forests) of the Central Amazon region of Brazil. It has been collected in flower from January to May, and in fruit in November.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Inundated Forest (Igapó), Inundated Forest (Várzea)

Geographic Distribution

Confirmed occurrences

North (Amazonas)

HERBARIUM MATERIAL

N.A. Rosa, 531, INPA, IAN, RB, Amazonas, **Typus**
M.L. Kawasaki, 211, MO, GH, NY, K, INPA, Amazonas
C.A.C. Ferreira, 7129, MO, RB, HST, HUEFS, K, NY, Amazonas
W. Rodrigues, 8668, INPA, MG, MO, RB, Amazonas
W. Rodrigues, 8727, INPA, Amazonas
W. Rodrigues, 8760, INPA, MO, RB, Amazonas
P. Assunção, 1716, INPA, Amazonas
N.A. Rosa, 515, RB, Amazonas
R.E. Schultes, 9927, IAN, K, NY, R, Amazonas

REFERENCE

Cardoso, D.; Lima, H.C. & Queiroz, L.P. 2013. *Staminodianthus*, a new neotropical Genistoid legume genus segregated from *Diploptropis*. *Phytotaxa* 110(1): 1–16.