

Dicksoniaceae M.R.Schomb.

Aline Possamai Della

Universidade de São Paulo; alinepossamaidella@hotmail.com

Diego Tavares Vasques

University of Tokyo; dtvasques@gmail.com

This treatment is composed of the following taxa: Dicksoniaceae, *Dicksonia*, *Lophosoria*.

HOW TO CITE

Della, A.P., Vasques, D.T. 2020. Dicksoniaceae in **Flora do Brasil 2020**. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB90945>.

DESCRIPTION

Plants terrestrial, arborescent. Caudex with a subterranean horizontal portion and another erect, with many adventitious roots and with the base of the petioles persistent, densely covered by hairs. Fronds approximate, monomorphic to dimorphic; petiole continuous with the caudex, with many vascular bundles in the base distributed in a horseshoe shape; laminae 2-5 pinnate-pinnatifid to pinnatisect, pubescent, chartaceous to coriaceous; venation open. Sorus marginal on the end of a vein, or one in each segment on the median position of the vein, globose; with indusium bivalve, formed by an abaxial indusium and by the margin of lamina revolute and slightly modified; or without indusium, with few or many paraphyses, catenate or filiform; sporangia globular, pedicel with 6 rows of cells, annuli oblique; spores trilete, tetrahedral globose, without chlorophyll.

COMMENTS

It is a family with pantropical distribution, with three genera and about 35 species (PPG I 2016). In Brazil there are two genera *Dicksonia* and *Lophosoria*, with one species each.

Life Form

Herb, Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Atlantic Rainforest, Pampa

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest), Mixed Ombrophyllous Forest

Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

IDENTIFICATION KEY

Identification key for the species of Dicksoniaceae occurring in Brazil

1. Sori marginal; indusia bivalved..... *Dicksonia sellowiana*
1'. Sori abaxial; indusia absent *Lophosoria quadripinnata*

REFERENCE

- Mickel, J. T., & Smith, A. R. (2004). The Pteridophytes of Mexico (Memoirs of The New York Botanical Garden 88). *The New York Botanical Garden, Bronx, New York, USA*.
- Moran, R.C. (2014). Fern and Lycophyte Genera of the Americas – A Short Guide. *Organizations for Tropical Studies, San José, Costa Rica*. 45 p.
- PPG I (2016). A community#derived classification for extant lycophytes and ferns. *Journal of Systematics and Evolution*, 54(6): 563-603.
- Prado, J. (2004). Criptógamos do Parque Estadual das Fontes do Ipiranga, São Paulo, SP. Pteridophyta: 6. Dicksoniaceae. *Hoehnea* 31(3): 239-242.
- Prado, J. (2006). Criptógamos do Parque Estadual das Fontes do Ipiranga, São Paulo, SP. Pteridophyta: 12. Lophosoriaceae. *Hoehnea* 33(1): 123-126.
- Wolf, P. G., Sipes, S. D., White, M. R., Martines, M. L., Pryer, K. M., Smith, A. R., & Ueda, K. (1999). Phylogenetic relationships of the enigmatic fern families Hymenophyllopsidaceae and Lophosoriaceae: Evidence from *rbcL* nucleotide sequences. *Plant Systematics and Evolution*, 219(3-4): 263-270.

Dicksonia L'Hér.

This treatment is composed of the following taxa: *Dicksonia*, *Dicksonia sellowiana*.

HOW TO CITE

Della, A.P., Vasques, D.T. Dicksoniaceae in **Flora do Brasil 2020**. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB90946>.

DESCRIPTION

Dicksonia L'Hér., Sert. Angl. 30. 1788 [1789]. Lectotype (chosen by Presl, Suppl. Tent. Pterid. 135.1836): *Dicksonia arborescens* L'Hér.

Balantium Kaulf., Enum. Filic. 228, 1824. Lectotype (chosen by Maxon, J. Wash. Acad. Sci. 12: 455. 1922): *Balantium auricomum* Kaulf. [= *Dicksonia arborescens* L'Hér.].

Caudex with erect portion ranging from 50 cm to 3.5 m long., with many adventitious roots and with the base of petioles persistent, densely covered by hairs, the hairs multicellular, yellow to dark brown. Fronds monomorphic; petioles pilose at base, and glabrous distally; laminae 2-3 pinnate-pinnatifid to pinnatisect, pubescent, coriaceous; venation open. Sorus marginal, globose; indusium bivalve, formed by an abaxial indusium and by margin of lamina revolute and slightly modified; with many paraphyses, catenate, equal to or greater than the length of sporangia; sporangia with annuli oblique, surrounding the entire sporangium capsule.

COMMENTS

Dicksonia is a genus with distribution in temperate and tropical areas of the Southern Hemisphere, with approximately 26 species (PPG I 2016). *Dicksonia* is distinguishable from *Cibotium* and *Culcita* by traits of the caudex (stem) and lamina division. There are about three species distributed in Tropical America, and only one species in Brazil: *D. sellowiana* Hook.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Atlantic Rainforest, Pampa

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest), Mixed Ombrophyllous Forest

Geographic Distribution

Confirmed occurrences

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

REFERENCE

- Mickel, J. T., & Smith, A. R. (2004). The Pteridophytes of Mexico (Memoirs of The New York Botanical Garden 88). *The New York Botanical Garden, Bronx, New York, USA*.
- Moran, R.C. (2014). Fern and Lycophyte Genera of the Americas – A Short Guide. *Organizations for Tropical Studies, San José, Costa Rica*. 45 p.

- PPG I (2016). A community-derived classification for extant lycophytes and ferns. *Journal of Systematics and Evolution*, 54(6): 563-603.
- Prado, J. (2004). Criptógamos do Parque Estadual das Fontes do Ipiranga, São Paulo, SP. Pteridophyta: 6. Dicksoniaceae. *Hoehnea* 31(3): 239-242.
- Prado, J. (2006). Criptógamos do Parque Estadual das Fontes do Ipiranga, São Paulo, SP. Pteridophyta: 12. Lophosoriaceae. *Hoehnea* 33(1): 123-126.
- Wolf, P. G., Sipes, S. D., White, M. R., Martines, M. L., Pryer, K. M., Smith, A. R., & Ueda, K. (1999). Phylogenetic relationships of the enigmatic fern families Hymenophyllopsidaceae and Lophosoriaceae: Evidence from *rbcL* nucleotide sequences. *Plant Systematics and Evolution*, 219(3-4): 263-270.

Dicksonia sellowiana Hook.

DESCRIPTION

Caudex with erect portion ranging from 50.0 cm to 5.0 m long., with many adventitious roots and with the base of petioles persistent, densely covered by hairs, the hairs multicellular, yellow to dark brown, 0.8-6 mm long. Fronds monomorphic, 50.0 cm to 3.0 m long.; petioles 5.0-15.0 cm long., pubescent or with sparse hairs at base, the hairs similar to those of the caudex; laminae 2-3 pinnate-pinnatifid to pinnatisect, elliptic-elongated, abaxially pubescent, the hairs similar to those of the caudex, adaxially glabrous, coriaceous; median pinnae pinnate-pinnatifid, subsessile, oblique in relation to the rachis, 22.0-40.0 × 5.0-8.0 cm; distal pinnae pinnatifid to pinnatisect, reduced and oblique in relation to the rachis, 2.0-2.5 × 0.5-1.0 cm; pinnulae pinnatifid to pinnatisect, 2.5-8.0 × 0.5-1.7 cm, apex acute and base cuneate to obtuse; segments 0.4-1.0 × 0.3-0.5 cm, sinus acute, margins sparsely serrated, fertile segments with revolute margins; venation opened, veins simple or furcate. Paraphysis equal or smaller than sporangia.

COMMENTS

Geographic distribution: Southern Mexico, Mesoamerica, Colombia, Venezuela, Ecuador, Peru, Bolivia, Argentina, Uruguay and Brazil. In Brazil, it occurs only in the Southeast and South regions, in the states of Minas Gerais, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul.

This species can be easily recognized by arborescent habit, caudex with yellowish to dark brown hairs, coriaceous laminae and sorus formed in the margin of the lamina, protected by bivalved indusium, this one formed by an abaxial indusium and by margin of lamina revolute and slightly modified.

Dicksonia sellowiana in Brazil occurs above 600 meters altitude, reaching up to 2,200 meters in the region of Itatiaia (Rio de Janeiro). It grows predominately inside forests, in shady and humid places (Fernandes 2000); however, it can also be found occurring naturally in exposed and sunny places. In the latter case, the plants have smaller size.

Dicksonia sellowiana is considered a species in threaten of extinction due to its intense commercial exploration, for the extraction of the arborescent caudex used for manufacture of xaxim.

Culcita has similar bivalvate marginal indusial, but it is trunk-less and has a deltate lamina, with costae and costules strongly grooved adaxially. Cyatheaceae species differ by scales instead of hairs on the caudex and petiole bases.

Many synonym names are applied to variants of this species across its distribution range.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Atlantic Rainforest, Pampa

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest), Mixed Ombrophyllous Forest

Geographic Distribution


Confirmed occurrences

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

HERBARIUM MATERIAL

Condack, J.P.S., 526, RB

A.F. Regnell, II:321, NY,  (NY00891474)

REFERENCE

- Mickel, J. T., & Smith, A. R. (2004). The Pteridophytes of Mexico (Memoirs of The New York Botanical Garden 88). *The New York Botanical Garden, Bronx, New York, USA*.
- Moran, R.C. (2014). Fern and Lycophyte Genera of the Americas – A Short Guide. *Organizations for Tropical Studies*, San José, Costa Rica. 45 p.
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- Wolf, P. G., Sipes, S. D., White, M. R., Martines, M. L., Pryer, K. M., Smith, A. R., & Ueda, K. (1999). Phylogenetic relationships of the enigmatic fern families Hymenophyllopsidaceae and Lophosoriaceae: Evidence from *rbcL* nucleotide sequences. *Plant Systematics and Evolution*, 219(3-4): 263-270.

Lophosoria C.Presl

This treatment is composed of the following taxa: *Lophosoria*, *Lophosoria quadripinnata*.

HOW TO CITE

Della, A.P., Vasques, D.T. Dicksoniaceae in **Flora do Brasil 2020**. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB90948>.

DESCRIPTION

Lophosoria C. Presl, Gefässbündel Farn 36. 1847 (preprint from Abh. Königl. Böhm. Ges. Wiss., ser. 5, 5: 344. 1848). Lectotype (first chosen by J. Smith, Hist. Fil. 251. 1875): *Lophosoria pruinata* (Sw.) C. Presl [*Polypodium pruinatum* Sw., nom superfl. for *Polypodium quadripinnatum* J. F. Gmel., 1792, both based on *Polypodium glaucum* Sw., 1788, non Thunb., 1784] *Lophosoria quadripinnata* (J. F. Gmel.) C. Chr.].

Trichosorus Liebm., Mexic. Breg. 281 (reprint 129). 1849. Type: *Alsophila pruinata* (Sw.) Kunze (combination *Trichosorus pruinatum* not made) [*Polypodium pruinatum* Sw.] = *Lophosoria quadripinnata* (J. F. Gmel.) C. Chr.].

Caudex with erect portion ranging 10-30 cm length, with many adventitious roots and with the base of petioles persistent, densely covered by hairs, the hairs multicellular, yellow to light brown. Fronds monomorphic; petioles pilose at base, and glabrous distally; laminae 2-3-pinnate-pinnatifid to pinnatisect, pubescent with golden hairs over veins and axes, coriaceous; venation opened. Sorus one in each segment on the median position of the vein, globose; without indusium; with many paraphyses; sporangia with annuli oblique, surrounding the entire sporangium capsule.

COMMENTS

Lophosoria is a neotropical genus with only three species (PPG I 2016), that occurs in high elevations (2000-3000 m), and tending to form colonies by means of stolons (Moran 2014). The genus is sister to *Dicksonia*, according to molecular evidence (Wolf et al. 1999), being distinguishable from dicksonioid ferns by the stout and hairy rhizomes, blades glaucous abaxially, and exindusiate sori. In Brazil, there is only one species, *L. quadripinnata* (J.F. Gmel.) C. Chr..

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Atlantic Rainforest, Pampa

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

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- Moran, R.C. (2014). Fern and Lycophyte Genera of the Americas – A Short Guide. *Organizations for Tropical Studies, San José, Costa Rica*. 45 p.
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- Wolf, P. G., Sipes, S. D., White, M. R., Martines, M. L., Pryer, K. M., Smith, A. R., & Ueda, K. (1999). Phylogenetic relationships of the enigmatic fern families Hymenophyllopsidaceae and Lophosoriaceae: Evidence from *rbcL* nucleotide sequences. *Plant Systematics and Evolution*, 219(3-4): 263-270.

Lophosoria quadripinnata (J.F.Gmel.) C.Chr.

Has as synonym

heterotypic *Alsophila pruinata* Kaulf.

DESCRIPTION

Caudex with erect portion ranging 10.0-30.0 cm long., with many adventitious roots and with the base of petioles persistent, densely covered by hairs, the hairs multicellular, yellow to dark brown, 2.0-10.0 mm long. Fronds monomorphic, 50.0 cm to 2.5 m long.; petioles 50.0 cm long., pubescent at base, to sparsely pilose or glabrous distally, the hairs similar to those of the caudex, without spine; laminae green, subcoriaceous, 2-3-pinnate-pinnatifid to pinnatisect (4-pinnate at base), subdeltate, abaxially pubescent, hairs 1-2mm long, similar to those of the caudex and petioles only on the veins and axes, strongly glaucous, adaxially glabrous; pinnae alternate, the proximal 2-3-pinnate-pinnatifid to pinnatisect, subsessile to petiolulate, 50.0-60.0 × 10.0-12.0 cm; rachises adaxially grooved, sparsely covered by hairs on abaxial surface, hairs with 1 mm long.; pinnae median 2-pinnatifid to pinnatisect, petiolulate, oblique in relation to the rachis, 25.0-30.0 × 10.0-12.0 cm; distal pinnae sessile to adnate, pinnatifid to pinnatisect, reduced and oblique in relation to the rachis, 1.0-2.5 × 0.5-1.0 cm; pinnulae pinnatifid to pinnatisect, 1.5-12.0 × 0.5-2.0 cm, apex acute and base cuneate; segments tiny, 0.3-0.5 × 0.2-0.4 cm, sinus acute, margins entire and revolute; venation opened, veins simple or furcate. Paraphyses equal or smaller than sporangia, filiform, light brown.

COMMENTS

Geographic distribution: Mexico, Mesoamerica, Greater Antilles, Trinidad, Colombia, Venezuela, Ecuador, Peru, Bolivia, Argentina, Chile and Brazil. In Brazil, it occurs only in the Southeast and South regions, in the states of Minas Gerais, Rio de Janeiro, São Paulo, Parana, Santa Catarina and Rio Grande do Sul.

This species can be easily recognized by caespitose habit with large fronds (ca. 2.5 m long.), petiole at the base with many hairs ranging from yellow, light brown to dark brown; lamina subcoriacea, 3-pinnate-pinnatifid to pinnatisect (4-pinnate at the base), strongly glaucous on the abaxial surface, and sorus in the median position in the segments, without indusium and with light brown paraphyses.

In Brazil, it is a group that occurs above 600 meters of altitude, reaching up to ca. of 2.000 meters. It grows generally in the interior and margin of forests, at shady places.

Life Form

Herb

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Atlantic Rainforest, Pampa

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)

South (Paraná, Rio Grande do Sul, Santa Catarina)

HERBARIUM MATERIAL

A.C. Brade, 17090, NY,  (NY00891523), Minas Gerais
Condack, J.P.S., 344, RB, Rio de Janeiro

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- Moran, R.C. (2014). Fern and Lycophyte Genera of the Americas – A Short Guide. *Organizations for Tropical Studies*, San José, Costa Rica. 45 p.
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