Saccolomataceae Doweld

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This treatment is composed of the following taxa: Saccolomataceae, *Saccoloma*.

HOW TO CITE

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DESCRIPTION

Plants terrestrial. Rhizomes ascending to erect, rarely sgort-creeping, dictyostelic, with peltate scales. Leaves monomorphic; petioles adaxially grooved; laminae 1-pinnate to 4-pinnate-pinnatifid, virtually glabrous; veins free, simple or forked; sori sub-marginal, discrete, borne on the tip of single veins; abaxial indusia tubular, conical, or semi-circular, opening extroserly; adaxial indusia not modified; spores trilete.

COMMENTS

Saccolomataceae is a pantropical, monogeneric family with ca. 20 species. This family was previously included within Dennstaedtiaceae. In Brazil, six species occur.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Amazon Rainforest, Atlantic Rainforest

Vegetation Types
Terra Firme Forest, Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima)
Northeast (Alagoas, Bahia, Pernambuco)
Central-west (Mato Grosso)
Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
South (Paraná, Santa Catarina)
Possible ocurrences
North (Amazonas, Amapá)
Northeast (Alagoas, Sergipe)
Central-west (Mato Grosso do Sul)

REFERENCE

Kramer, K. U. 1990. Dennstaedtiaceae. Pp. 81#94, *in* K. U. Kramer and P. S. Green (eds.). Vol. I Pteridophytes and Gymnosperms. *In*: K. Kubitzki (ed.). *The families and genera of vascular plants.* Springer-Verlag, Berlin.
Lehtonen, S., Wahlberg, N. & Christenhusz, M.J.M. 2012. Diversification of lindsaeoid ferns and phylogenetic uncertainty of early polypod relationships. *Bot. J. Linnean Soc.* 170: 489–503.
Luong, T.T., Hovenkamp, P.H. & Sosef, M.S.M. 2015. Revision of the fern genus *Orthiopteris* (Saccolomataceae) in Malesia and adjacent regions. *PhytoKeys* 53: 39–71.
Nair, G.B. 1979. Peltate scales in *Saccoloma. Fern Gaz.* 12: 53–55.
Rojas-Alvarado, A.F. 2010. Novelties in the Saccoloma inaequale complex (Saccolomataceae) from the neotropics. Métodos en Ecología y Sistemática 5(1): 1-16.
Schwartsburd, P.B. 2015. Saccolomataceae. *In:* Prado, J. & al. Diversity of ferns and lycophytes in Brazil. *Rodriguésia* 66(4): 1073–1083.
Schwartsburd, P.B., Perrie, L.R., Brownsey, P., Shepherd, L.D., Shang, H., Barrington, D.S. & Sundue, M.A. 2020. New insights into the evolution of the fern family Dennstaedtiaceae from an expanded molecular phylogeny and morphological analysis. *Mol. Phylogen. Evol.* 150: 106881.
Smith, A. R., K. M. Pryer, E. Schuettpelz, P. Korall, H. Schneider, and P. G. Wolf. 2008. Fern classification. Pp. 417#467, *in* T. A. Ranker and C. H. Haufler (eds.). 2008. *Biology and evolution of ferns and lycophytes.* Cambridge University Press, Cambridge.
Tryon, R.M. 1962. Taxonomic fern notes. III. *Contr. Gray Herb. Harvard Univ.* 191: 91–107.
Tryon, R. M. and A. F. Tryon. 1982. *Ferns and allied plants, with special reference to Tropical America.* Springer-Verlag, New York.

Saccoloma Kaulf.

This treatment is composed of the following taxa: *Saccoloma*, *Saccoloma brasiliense*, *Saccoloma chartaceum*, *Saccoloma elegans*, *Saccoloma inaequale*, *Saccoloma membranaceum*, *Saccoloma nigrescens*.

HOW TO CITE

Schwartsburd, P.B. Saccolomataceae *in* **Flora do Brasil 2020.** Jardim Botânico do Rio de Janeiro. Available at: http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB92022.

Has as synonym
heterotypic *Ithycaulon* Copel.
heterotypic *Orthiopteris* Copel.

DESCRIPTION

Plants terrestrial. Rhizomes ascending to eretc, dictyostelic, scaly. Fronds monomorphic; petioles adaxially grooved; laminae 1-pinnate to 3-pinnate, glabrous; veins free, simple or forked; sori sub-marginal, discrete, borne on the tip of single veins; indusia pouch or cup-shaped, oppening extroserly; spores trilete.

COMMENTS

I here provisionally regard *Saccoloma brasiliense* and *S. inaequale* as two distinct species, but further studies are needed.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Amazon Rainforest, Atlantic Rainforest

Vegetation Types
Terra Firme Forest, Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima)
Northeast (Alagoas, Bahia, Pernambuco)
Central-west (Mato Grosso)
Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
South (Paraná, Santa Catarina)
Possible ocurrences
North (Amazonas, Amapá)
Northeast (Alagoas, Sergipe)
Central-west (Mato Grosso do Sul)

IDENTIFICATION KEY

1. Laminae 1-pinnate . 2
1. Laminae 1-pinnate-pinnatifid to more decompound . 3
2. Petioles proximally burgundy, stramineous above; rachises stramineous; laminae herbaceous . *Saccoloma elegans*

2. Petioles burgundy throughout; rachises burgundy; laminae chartaceous . *S. chartaceum*
3. Rhizomes short-creeping; laminae 1-pinnate-pinnatifid . *S. membranaceum*
3. Rhizomes ascending to erect; laminae 2-pinnate-pinnatifid to more decompound . 4
4. Laminae dark gray to blackish when dried . *S. nigrescens*
4. Laminae green when dried (olive green or glossy green) . 5
5. Sori marginal; abaxial indusia conical . *S. brasiliense*
5. Sori sub-marginal; abaxial indusia tubular . *S. inaequale*

REFERENCE

Cremers, G. & Kamer, K.U. 1989. A new subspecies of *Saccoloma elegans.* Studies in the Flora of the Guianas, no. 39. Botanica Helvetica 99: 45–48.
Kramer, K. U. 1990. Dennstaedtiaceae. Pp. 81#94, *in* K. U. Kramer and P. S. Green (eds.). Vol. I Pteridophytes and Gymnosperms. *In*: K. Kubitzki (ed.). *The families and genera of vascular plants.* Springer-Verlag, Berlin.
Lehtonen, S., Wahlberg, N. & Christenhusz, M.J.M. 2012. Diversification of lindsaeoid ferns and phylogenetic uncertainty of early polypod relationships. *Bot. J. Linnean Soc.* 170: 489–503.
Mickel, J.T. 1984. New Tropical American ferns. American Fern Journal 74: 111–119.
Nair, G.B. 1989. *Saccoloma chartaceum* – a new species. *J. Bombay Nat. Hist. Soc.* 86: 414–416.
Rojas-Alvarado, A.F. 2010. Novelties in the Saccoloma inaequale complex (Saccolomataceae) from the neotropics. Métodos en Ecología y Sistemática 5(1): 1-16.
Prado, J., Hirai, R.Y. & Moran, R.C. 2017. Fern and lycophyte flora of Acre state, Brazil. *Biota Neotrop.* 17(4): e20170369.
Schwartsburd, P.B. 2015. Saccolomataceae. *In:* Prado, J. & al. Diversity of ferns and lycophytes in Brazil. *Rodriguésia* 66(4): 1073–1083.
Schwartsburd, P.B., Perrie, L.R., Brownsey, P., Shepherd, L.D., Shang, H., Barrington, D.S. & Sundue, M.A. 2020. New insights into the evolution of the fern family Dennstaedtiaceae from an expanded molecular phylogeny and morphological analysis. *Mol. Phylogen. Evol.* 150: 106881.
Tryon, R.M. 1962. Taxonomic fern notes. III. *Contr. Gray Herb. Harvard Univ.* 191: 91–107.

Saccoloma brasiliense (C.Presl) Mett.

This treatment is composed of the following taxa: *Saccoloma brasiliense*, .

Has as synonym
basionym *Microlepia brasiliensis* C. Presl
basionym *Microlepia brasiliensis* C.Presl
homotype *Davallia brasiliensis* (C. Presl) Hook.
homotype *Ithycaulon brasiliense* (C. Presl) C. Chr.
homotype *Orthiopteris brasiliensis* (C. Presl) Sehnem
homotype *Saccoloma inaequale* var. *brasiliense* (C. Presl) Luetzelb.
heterotypic *Microlepia pohliana* Kunze ex Ettingsh.

DESCRIPTION

Stem: type ascending to erect. **Leaf: consistency of the blade** chartaceous; **colour of the blade** green olive; **colour of the petiole** paleaceous; **division of the blade** bipinnate to quadripinnate. **Type of sporangium: form of the indusium abaxial** conical; **position of the sori** marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Atlantic Rainforest

Vegetation Types
Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
Southeast (Minas Gerais, Rio de Janeiro, São Paulo)
South (Paraná, Santa Catarina)

HERBARIUM MATERIAL

Mynssen, C.M., 1091, TUR, RB, SP, Rio de Janeiro
Schwartsburd, P.B., 2266, VIC, São Paulo

Saccoloma chartaceum G.B. Nair

Has as synonym
heterotypic *Saccoloma elegans* subsp. *chartaceum* G.B. Nair ex Cremers & K.U. Kramer

DESCRIPTION

Stem: type ascending to erect. **Leaf: consistency of the blade** chartaceous; **colour of the blade** green olive; **colour of the petiole** wine-coloured; **division of the blade** pinnate. **Type of sporangium: form of the indusium abaxial** semi circular; **position of the sori** marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Amazon Rainforest

Vegetation Types
Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
North (Acre, Amazonas, Pará, Rondônia, Roraima)
Possible ocurrences
North (Amapá)

HERBARIUM MATERIAL

G.T. Prance, 1784, IAN, NY, RB, US, Pará
Jangoux, J., 85-100, NY, Acre

Saccoloma elegans Kaulf.

This treatment is composed of the following taxa: *Saccoloma elegans*, .

Has as synonym
homotype *Davallia saccoloma* Spreng.
homotype *Microlepia elegans* (Kaulf.) Mett.
homotype *Saccoloma elegans* Kaulf. subsp. *elegans*

DESCRIPTION

Stem: type ascending to erect. **Leaf: consistency of the blade** herbaceous; **colour of the blade** green olive; **colour of the petiole** paleaceous; **division of the blade** pinnate. **Type of sporangium: form of the indusium abaxial** semi circular; **position of the sori** marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Atlantic Rainforest

Vegetation Types
Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
Northeast (Alagoas, Bahia, Pernambuco)
Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
South (Paraná, Santa Catarina)
Possible ocurrences
Northeast (Sergipe)
Central-west (Mato Grosso do Sul)

IDENTIFICATION KEY

Laminae with ca. 8-15 pairs of pinnae . *Saccoloma elegans* subsp. *chartaceum*
Laminae with ca. 15-30 pairs of pinnae . *Saccoloma elegans* subsp. *elegans*

HERBARIUM MATERIAL

F. Sellow, s.n., W, US, P, MO, L, K, B, **Typus**
P.B. Schwartsburd, 2618, VIC, Minas Gerais
Y. Mexia, 4639, US, VIC, PH, NY, MO, IAN, Minas Gerais

Saccoloma inaequale (Kunze) Mett.

This treatment is composed of the following taxa: *Saccoloma inaequale*, .

Has as synonym
basionym *Davallia inaequalis* Kunze
homotype *Ithycaulon inaequale* (Kunze) Copel.
homotype *Microlepia inaequalis* (Kunze) C. Presl
homotype *Orthiopteris inaequalis* (Kunze) Copel.

DESCRIPTION

Stem: type ascending to erect. **Leaf: consistency of the blade** herbaceous; **colour of the blade** green shiny; **colour of the petiole** paleaceous; **division of the blade** bipinnate to quadripinnate. **Type of sporangium: form of the indusium abaxial** tubular; **position of the sori** sub marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Amazon Rainforest

Vegetation Types
Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima)
Central-west (Mato Grosso)

HERBARIUM MATERIAL

M.S. Costa, 61, UPCB, Rondônia
A. Quinet, 1392, RB, MBM, Amazonas

Saccoloma membranaceum Mickel

DESCRIPTION

Stem: type short trailling. **Leaf: consistency of the blade** membranous; **colour of the blade** green shiny; **colour of the petiole** paleaceous; **division of the blade** pinnate pinnatifid. **Type of sporangium: form of the indusium abaxial** tubular; **position of the sori** sub marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Amazon Rainforest

Vegetation Types
Terra Firme Forest

Geographic Distribution
Confirmed ocurrences
North (Acre)
Possible ocurrences
North (Amazonas)

HERBARIUM MATERIAL

G.T. Prance, 12432, NY (00688051), INPA, MO (2956926), Acre, **Typus**

Saccoloma nigrescens (Kunze) A. Rojas

Has as synonym
basionym *Davallia nigrescens* Kunze
homotype *Davallia inaequalis* var. *nigrescens* (Kunze) Hooker & Baker
homotype *Microlepia inaequalis* var. *nigrescens* (Kunze) Mett.
homotype *Saccoloma brasiliense* var. *nigrescens* (Kunze) Hieron.
heterotypic *Microlepia nigricans* C. Presl

DESCRIPTION

Stem: type ascending to erect. **Leaf: consistency of the blade** chartaceous; **colour of the blade** blackened; **colour of the petiole** brown; **division of the blade** bipinnate to quadripinnate. **Type of sporangium: form of the indusium abaxial** conical; **position of the sori** sub marginal.

Life Form
Herb

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Atlantic Rainforest

Vegetation Types
Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution
Confirmed ocurrences
Northeast (Bahia, Pernambuco)
Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo)
Possible ocurrences
Northeast (Alagoas, Sergipe)

HERBARIUM MATERIAL

F.B. Matos, 997, RB, UPCB, Bahia
L. Kollmann, 4910, MBML, Espírito Santo