

Andira Lam.

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This treatment is composed of the following taxa: *Andira*, *Andira anthelmia*, *Andira carvalhoi*, *Andira cordata*, *Andira cujabensis*, *Andira fraxinifolia*, *Andira humilis*, *Andira inermis*, *Andira legalis*, *Andira macrothyrsa*, *Andira marauensis*, *Andira micrantha*, *Andira multistipula*, *Andira nitida*, *Andira ormosioides*, *Andira parviflora*, *Andira praecox*, *Andira surinamensis*, *Andira trifoliolata*, *Andira unifoliolata*, *Andira vermifuga*.

HOW TO CITE

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DESCRIPTION

Trees, shrubs, or rarely **geoxylic suffrutices**. Bark often producing small amounts of red exudate when cut. Indumentum of simple, red-brown or occasionally pale whitish hairs, or absent. Stipules large and persistent or small, narrow and nearly caducous. **Leaves** spirally arranged, imparipinnate, with up to 9 pairs of leaflets, occasionally 3-foliolate or 1-foliolate; rachis canaliculate; leaflets subtended by stipels (occasionally absent); pulvinules stout, swollen, canaliculate. **Leaflets** glabrous adaxially, glabrous or hairy abaxially; primary vein channelled or plane adaxially, prominently raised abaxially; secondary veins brochidodromous, or mixed eucamptodromous-brochidodromous. **Inflorescences** axillary and terminal, paniculate, with pale brown, brown, or red-brown, simple indumentum, the branches subtended by caducous bract; paired caducous bracteoles at base of calyx. **Flowers** strongly papilionate; calyx shallowly to deeply and subequally 5-lobed, the upper lobes broader than the lower lobes, all lobes with simple, red-brown indumentum, or glabrous; petals 5, free, clawed, purple, pink, or white, wing petals with or without lamellate sculpturing, keel petals overlapping, firmly attached, but not united; stamens 10, the filaments united for at least half of their length, the vexillary stamen free, ovary distinctly stipitate, with simple hairs or glabrous, ovules 1–8. **Fruit** a 1(–2–3)-seeded drupe, +- globose to elongated; sutures (along abaxial and adaxial surfaces of the fruit) raised or sunken or indistinct; stylar remnant present or indistinct; exocarp glabrous, green, brown, or occasionally yellow when ripe and fresh; mesocarps fibrously fleshy and sweet smelling (drying hard, fibrous and granular); endocarp very hard, woody, or woody and fibrous. Seeds white, filling the entire cavity, the hypocotyl-radicle axis a small fold at the apex; testa dark reddish brown, adhering to the endocarp. **Seedlings** cryptohypogeal.

COMMENTS

Andira is a genus of 29 woody species (including the three subspecies of *A. inermis*) distributed throughout tropical America and Africa. *Andira* is most closely related to *Hymenolobium* Benth. and *Aldina*, comprising the *Andira* clade. The main difference in the three genera is in fruit type and flower morphology; *Hymenolobium* has samaras, *Andira* has drupes and, *Aldina* nucoid pods. Moreover, *Andira* and *Hymenolobium* share the specialized zygomorphic papilionate flower, whereas *Aldina* has radially symmetric flower with undifferentiated petals. The majority of *Andira* species are endemic to South America. The exceptions are *A. cubensis* (endemic to Cuba), *A. jaliscencis* and *A. galeotiana* (endemic to Mexico), and *A. inermis* (widespread throughout the entire Neotropics and also present in Africa). Most species grow in rain forests. In the cerrado of central Brazil *A. cordata*, *A. cujabensis*, *A. humilis* and *A. vermifuga* are found. *Andira inermis* subsp. *rooseveltii* occurs in a similar wooded savannah habitat

in Africa. *Andira carvalhoi* is entirely restricted to the sandy coastal resting scrub and forest of eastern Brazil. In the restinga and adjacent rain forest in eastern Brazil are found; *A. fraxinifolia*, *A. legalis*, *A. anthelmia*, *A. ormosioides*, and *A. nitida*. *Andira jaliscencis* is a species of seasonally dry tropical forests, as is *A. inermis* subsp. *glabricalyx*. *Andira inermis* subsp. *inermis* also occurs in seasonally dry tropical forest in Central America and on the Caribbean coasts of Venezuela and Colombia, but elsewhere in the Neotropics, and in Africa, it grows in rain forest.

Life Form

Shrub, Tree

Substrate

Rupicolous, Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types

Anthropic area, Caatinga (stricto sensu), Amazonian Campinarana, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest, Inundated Forest (Igapó), Terra Firme Forest, Seasonally Deciduous Forest, Seasonally Semideciduous Forest, Ombrophylous Forest (Tropical Rain Forest), Coastal Forest (Restinga)

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima, Tocantins)

Northeast (Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)

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

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

Possible occurrences

Northeast (Alagoas, Rio Grande do Norte)

Southeast (Minas Gerais)

IDENTIFICATION KEY

1. Leaves all uni- or trifoliolate; primary vein plane on adaxial surface 2
1. Leaves all with two or more pairs of leaflets, or sometimes also some leaves trifoliolate; primary vein sunken on adaxial surface 3
2. Leaves trifoliolate *A. trifoliolata*
2. Leaves unifoliolate *A. unifoliolata*
3. Stipules generally more than 1.7×0.5 cm, persistent, crowded at in florescence base and shoot apex 4
3. Stipules less than $1.7(-2) \times 0.5$ cm, often caducous, sometimes entirely absent (rarely persistent and then paired only at leaf bases, but not crowded at inflorescence base or shoot apex) 6
4. Flowers 19–24 mm long; eastern Brazil 5
4. Flowers 11–15 mm long; Amazonia *A. multistipula*
5. Fruit 5.6–12 cm long, weighing over 100 g when dry; stipules red-brown pubescent when young, glabrescent at maturity *A. legalis*
5. Fruit 3–6.2 cm long, weighing ca. 20 g when dry; stipules red-brown appressed pubescent when young, generally glabrous at maturity *A. anthelmia*
6. Fruit 5–11 cm long, weighing (40–)100–300 g when dry 7

6. Fruit 2.4-6 (-7) cm long, weighing 10-20(-30) g when dry 8
7. Shrub or small tree to 10 m; flowers 14-15 mm long; eastern Brazil, in restinga *A. carvalhoi*
7. Trees to 40 m tall; flowers 6-7 mm long; Amazonian rain forest *A. micrantha*
8. Petals white to yellow (occasionally pale pinkish or pale lilac), the standard generally with red or purple markings 9
8. Petals red or pink to purple, the standard generally with a white or cream central marking 13
9. Ovary glabrous *A. cordata*
9. Ovary pubescent 10
10. Leaflets with erect indumentum on abaxial surface 11
10. Leaflets glabrous or with appressed indumentum on abaxial surface 12
11. Tree to 20 m tall, bark smooth; leaflets abaxially with red-brown indumentum, the epidermis clearly visible, and secondary veins 10-15; Amazonian rain forest *A. parviflora*
11. Tree to 12 m tall (occasionally a shrub), bark thick, fissured; leaflets abaxially generally with pale indumentum, often so dense that the epidermis is hidden, and secondary veins 8-10; Cerrado and gallery forest of mostly Central Brazil, but also in Amazonian enclaves of savannas in Pará *A. cujabensis*
12. Leaflets 4-9 pairs; endocarp of fruit fibrous *A. macrothyrsa*
12. Leaflets 1-2(3) pairs; endocarp of fruit very hard, amorphous *A. praecox*
13. Dry fruits distinctly wrinkled 14
13. Dry fruits smooth (the surface sometimes rough and warty, but not wrinkled) 17
14. Leaflets with erect indumentum on abaxial surface *A. vermifuga*
14. Leaflets glabrous or with appressed indumentum on abaxial surface 15
15. Geoxylic suffrutex forming mats up to 10 m in diameter (occasionally shrub-like, to 2 m tall); fresh mature fruit yellowish; central Brazil and Paraguay, in cerrado *A. humilis*
15. Shrub or tree to 40 m; fresh mature fruit green; Amazonia, the Guianas, and eastern Brazil 16
16. Leaflets with secondary veins plane to slightly raised abaxially, tertiary veins plane; flowers 10-13 mm long; eastern Brazil *A. nitida*
16. Leaflets with secondary veins and tertiary veins prominently raised abaxially; flowers 13-18 mm long; Amazonia and the Guianas *A. surinamensis*
17. Leaflets with erect, spreading indumentum on abaxial surface 18
17. Leaflets glabrous or abaxially with appressed indumentum 19
18. Tree to 30 m tall, with a small crown in open situations; flowers 18-23 mm long; fresh fruit very dark brown with pale greenish white mesocarp *A. ormosioides*
18. Shrub or small tree to 12 m tall, with a broad spreading crown in open situations; flowers 13-17 mm long; fresh fruit green with green mesocarp *A. fraxinifolia*
19. Leaflets glabrous abaxially *A. inermis*
19. Leaflets with appressed hairs abaxially 20
20. Leaflets 2-4(-5) pairs, base obtuse, or rounded to slightly cordate; flowers 10-13 mm long; calyx with sparse appressed indumentum; ovules (1-)2-4 *A. nitida*
20. Leaflets (1-)2(-3) pairs, base acute to obtuse; flowers 9-11 mm long; calyx glabrous except around margins of lobes; ovules 1-2 *A. marauensis*

REFERENCE

Pennington, R. T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira anthelmia (Vell.) Benth.

Has as synonym

homotype *Andira anthelminthica* (Vell.) Benth.

heterotypic *Andira stipulacea* Benth.

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/flat; midrib canaliculate adaxial/with hair adaxial; tertiary vein prominent/flat; number of the leaflet 3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp brown; mesocarp fibrous/granular; seed 3; suture conspicuous. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree to 25 m tall with large, broad, spreading crown in open situations; buttresses absent; bark grey-brown to brown. **Stipules** 1.5–6 cm long, generally >0.5 cm wide, persistent, ovate, pale brown, with sparse, red-brown appressed hairs, glabrescent and generally glabrous at maturity. **Leaves** with leaf axis 24–55 cm long; rachis dark to pale brown, sparsely hairy when young, glabrescent, hairs red-brown, erect; stipels 1–9 mm long; pulvinules 1.5–4.5 mm long, indumentum like that of rachis. **Leaflets** in (3–)4–6(–7) pairs, (2.2–)4.1–12.5(–20.5) × (1–)2.2–6.5(–7.5) cm, elliptic, narrowly obovate (rarely narrowly ovate, narrowly elliptic, broadly obovate to oblanceolate), thick-chartaceous (rarely chartaceous or subcoriaceous), shiny dark green adaxially, matt abaxially, base obtuse or rounded, often slightly decurrent, apex obtuse or rounded (rarely acute), often slightly retuse or with a short acumen to 10 mm long, glabrous adaxially except the groove of the primary vein very sparsely hairy, glabrescent, the hairs erect, sparsely to very sparsely hairy abaxially; primary vein channelled adaxially; secondary veins 8–13, +- plane to slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane to slightly impressed adaxially and raised abaxially. **Panicles** 11–35 cm long, terminal and axillary, hairy to sparsely hairy at branch tips, glabrescent towards the base, hairs red-brown, +- appressed; bracts 2–6 mm long, narrow, caducous, sparsely hairy, hairs red-brown, appressed; pedicels 2–6 mm long; bracteoles 1.5–2.5 mm long, indumentum like that of bracts. **Flowers** 19–24 mm long; calyx 8–10 mm long, purple-brown, with sparse, red-brown, appressed hairs, indumentum most dense on lobes, lobes 0.3–2 mm long, obtuse to acute; petals rose-violet to purple, standard blade 14–16 mm wide, wings 10–13.5 × 4.5–6.5 mm, lamellate sculpturing present, keel 9–12 × 5–6.5 mm; stamens 15–20 mm long, the vexillary stamen 12.5–16.5 mm long; gynoeceum 15.5–21 mm long, hairy, ovules 4–5. **Fruits** 3–6.2 cm long, elongated, weighing ca. 20 g or less when dry, strong smelling, dark brown, this surface layer thin, green beneath, drying dark brown with surface appearing smooth but minutely wrinkled (best seen with lens or microscope); stipe to 12 mm long, but fruit usually breaking off without a stipe; suture raised adaxially, +- undetectable abaxially; stylar remnant slight, but often obvious at very apex of fruit; mesocarp 1.5–3 mm thick, green to pale lime-green, drying pale brown, fibrous and granular, somewhat air-filled and soft; endocarp 1–2.5 mm thick, brown to pale brown, woody, fibrous.

COMMENTS

Andira anthelmia is most closely related to *A. legalis*, which has similar large, persistent stipules. The species are clearly distinguished by their fruits: *A. anthelmia* has small, bat-dispersed fruits, which are never longer than 6.2 cm, whereas *A. legalis* has large, rodent-dispersed fruits 5.6–12 cm long (Pennington 2003).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types

Anthropic area, Riverine Forest and/or Gallery Forest, Ombrophyllous Forest (Tropical Rain Forest), Coastal Forest (Restinga)

Geographic Distribution

Confirmed occurrences

Northeast (Alagoas, Bahia, Paraíba, Pernambuco, Rio Grande do Norte, Sergipe)

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

South (Paraná, Santa Catarina)

HERBARIUM MATERIAL

J.B.E. Pohl, s.n., K (K000118488), **Typus**

H.C. Lima, 3866, RB, CEPEC

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Andira anthelmia* (Vell.) Benth.



Figure 2: *Andira anthelmia* (Vell.) Benth.



Figure 3: *Andira anthelmia* (Vell.) Benth.



Figure 4: *Andira anthelmia* (Vell.) Benth.

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae - Papilionoideae). Systematic Botany Monographs vol. 64. 134 pp.

Andira carvalhoi R.T.Penn. & H.C.Lima

DESCRIPTION

Leaf: side abaxial glabrous; side adaxial glabrous; **veins secondary** brochidodromous/flat; **midrib** canaliculate adaxial; **tertiary vein** flat; **number of the leaflet** 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet. **Inflorescence: indumentum** brown reddish; **type** terminal. **Flower: wing** with lamella; **indumentum of the calyx** brown reddish; **ovary** pilose; **petal** purple. **Fruit: endocarp** woody fibrous; **exocarp** green; **mesocarp** woody/granular; **seed** 3; **suture** conspicuous. **Seed: number** 3.

ADDITIONAL DESCRIPTION

Shrub, often multi-stemmed with creeping rhizomes, or occasionally a small tree to 10 m tall with spreading branches; buttresses absent; bark grey-brown to brown, fissuring vertically and flaking slightly. **Stipules** to 14 × 1 mm, with sparse, red-brown appressed hairs, glabrescent. **Leaves** with axis 8.5–25 cm long (to 40 cm long, sterile branches); rhachis with very sparse, red-brown, appressed hairs, glabrescent, covered with waxy bloom; stipels to 1 mm long; pulvinules 4–10 mm long, indumentum like that of rhachis. **Leaflets** in 2–3(–4) pairs, 6.7–18 × 2.8–7 cm, the proximal leaflets sometimes ca. 4.5 × 2.3 mm, elliptic to narrowly ovate, coriaceous, dark green, shiny, the venation paler, older leaflets tending to become bullate with the margins inrolled, base obtuse, rounded (rarely +- truncate), apex obtuse to rounded (rarely acute), often slightly retuse or with an acumen 3–4 mm long, glabrous adaxially, glabrous abaxially except the primary vein with very sparse, appressed, red brown hairs; primary vein channelled adaxially; secondary veins 8–13, plane adaxially, slightly raised abaxially, pattern brochidodromous, divergence angle wide; tertiary veins plane adaxially and abaxially. **Panicles** 5–30 cm long, terminal, with red-brown, appressed hairs at branch tips, glabrescent at base, the axes dark, almost black, glaucous at base; bracts 4–5 mm long, narrow, moderately persistent, with short, appressed, red-brown hairs; pedicels 1.5–3 mm long; bracteoles 1.5–2 mm long, narrow, moderately persistent, indumentum like that of bracts. **Flowers** 14–15 mm long; calyx 6–7 mm long, with very sparse, appressed, pale red-brown, short hairs, lobes 0.5–1 mm long, acute to obtuse; petals violet, the standard with a central white marking, standard blade ca. 10 mm wide, wing ca. 9 × 4–4.5 mm, lamellate sculpturing present, keel ca. 8 × 3.5–4; stamens ca. 11 mm long, the vexillary stamen 9–9.5 mm long; gynoecium 13–13.5 mm long, with sparse short appressed hairs on the lower surface of the ovary, ovules 3. **Fruits** 5–10 cm long, elongated, weighing 100–300 g when dry, flattened adaxially, rough, pale brown with dark brown specks (both fresh and dry); stipe 5–13 mm long; suture raised adaxially and abaxially; stylar remnant not visible; mesocarp 6–15 mm thick (fresh), pale greenish white to pale green, slowly oxidizing red-brown when cut, drying pale brown, hard, dry, finely granular; mesocarp 1.5–2 mm thick; endocarp 3–9 mm thick (fresh), brown, woody, fibrous.

COMMENTS

Andira carvalhoi is only likely to be confused with *A. nitida* from which it differs by its much larger, brown fruits. It also has larger flowers and a longer leaf axis; the flowers of *A. nitida* are 10–13 mm long and the leaf axis rarely exceeds 15 cm long (Pennington 2003).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Atlantic Rainforest

Vegetation Types

Coastal Forest (Restinga)

Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

HERBARIUM MATERIAL

A.M. Carvalho, 491, CEPEC, RB, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae - Papilionoideae). Systematic Botany Monographs vol. 64. 134 pp

Andira cordata Arroyo ex R.T.Penn. & H.C.Lima

DESCRIPTION

Leaf: side abaxial glabrous; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/flat; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet. **Inflorescence:** indumentum brown pale; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx glabrous; ovary glabrous; petal purple/white. **Fruit:** endocarp woody; exocarp green; mesocarp woody/granular; seed 2; suture indistinct. **Seed:** number 2.

ADDITIONAL DESCRIPTION

Tree 6(–15) m tall, occasionally a shrub; buttresses absent; bark thick (to 1 cm), brown to grey-brown, fissuring vertically. **Stipules** early caducous, not seen. **Leaves** with axis 4.5–15 cm long; rhachis glabrous (or rarely with sparse, pale brown, erect hairs), dark brown peeling to reveal red-brown or pale brown beneath; stipels 0.5 mm long, caducous; pulvinules 1.5–4 mm long, glabrous (or sparsely hairy). **Leaflets** 2–4 pairs, 2–7 × 1.4–4 cm (the lower leaflets to 5 cm wide), broadly elliptic to ovate (rarely suborbiculate, elliptic, narrowly ovate to broadly ovate), thinly coriaceous, base truncate, cordate (rarely rounded); apex obtuse to rounded (the terminal leaflets sometimes truncate), often slightly retuse, occasionally with an acumen to 4 mm long, glabrous (rarely very sparsely hairy abaxially, hairs erect); primary vein channelled adaxially; secondary veins 8–10, plane to slightly impressed adaxially, slightly raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane adaxially and plane to slightly raised abaxially. **Panicles** 5–25 cm long, axillary and terminal, sparsely covered with pale-brown hairs at branch tips, glabrescent at base; bracts and bracteoles caducous, not seen. **Flowers** 6.5–7 mm long, sessile; calyx 3–3.5 mm long, purple to black, glabrous (or with a few scattered pale appressed hairs), except the margins of the lobes sparsely hairy, hairs pale, +- erect, lobes 0.2–0.4 mm long, obtuse; petals whitish to pale lilac, the standard with purplish markings, standard blade 5–6.5 mm wide, wing 4–4.5 × 1.5–2.5 mm, sculpturing absent, keel 3–3.5 × 1.5–2 mm; stamens 5.5–6 mm long, the vexillary stamen 3.5–4 mm long; gynoeceium 5.5–6.5 mm long, glabrous, ovules 2. **Fruit** 3–3.6 cm long, +- globose, weighing ca. 20 g or less when dry, green with pale yellowish specks when young, drying dark brown, almost black, appearing smooth but minutely tuberculate (best seen with lens or microscope); stipe 3.5 mm long; sutures and styler remnant not apparent; mesocarp 1–2 mm thick, granular, hard; endocarp 2–4 mm thick.

COMMENTS

Andira cordata is the only tree species of *Andira* in the Brazilian cerrados with entirely glabrous foliage, or with only very poorly developed indumentum on the leaflet undersurfaces. *Andira vermifuga* and *A. cujabensis* both have well-developed indumentum on the leaflet undersurfaces. Although many specimens of *A. humilis* are glabrous, this species is completely distinct in its geoxylic suffrutex growth form (Pennington 2003).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Central Brazilian Savanna

Vegetation Types

Cerrado (lato sensu), Seasonally Semideciduous Forest

Geographic DistributionConfirmed occurrences

North (Tocantins)

Northeast (Bahia, Maranhão, Pernambuco, Piauí)

Central-west (Goiás)

HERBARIUM MATERIALG. Hatschbach, 39477, G, K, MBM, MEXU, RB, **Typus****FIELD IMAGES / ILLUSTRATIONS**Figure 1: *Andira cordata* Arroyo ex R.T.Penn. & H.C.Lima**REFERENCE**Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira cujabensis Benth.

Has as synonym

homotype *Andira cuiabensis* Benth.

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/proeminent/flat; midrib canaliculate adaxial; tertiary vein prominent/flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx brown reddish; ovary pilose; petal white. **Fruit:** endocarp woody; exocarp green/brown; mesocarp woody/granular; seed 1/2; suture indistinct/sulcate. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree (occasionally a shrub) to 12 m; buttresses absent; bark thick, fissured. **Stipules** to 5 × 3 mm or narrower, early caducous, densely covered with pale brown to red-brown hairs. **Leaves** with axis 5–23 cm long; rachis densely hairy, glabrescent, hairs buff to pale brown to red-brown, erect, tangled; stipels 1–2 mm long, caducous; pulvinules 1–5 mm long, indumentum like that of rachis. **Leaflets** in (2–)3–4(–5) pairs, (3–)4–10.5 × 2–5.5 cm, broadly elliptic, elliptic, ovate, narrowly ovate (rarely broadly obovate to narrowly obovate), coriaceous, base rounded to cordate, apex obtuse (rarely acute or rounded), often with a short blunt acumen to 5 mm long or slightly retuse, glabrous adaxially, densely hairy abaxially and the epidermis often not visible, glabrescent, hairs generally buff to pale brown, occasionally red-brown, erect, tangled, >0.2–1.0 mm long; primary vein channelled adaxially; secondary veins 8–10, impressed to slightly impressed adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous or +- completely brochidodromous; tertiary veins plane adaxially and raised abaxially. **Panicles** (4.5–)10–32 cm long, axillary and terminal, densely covered with pale red-brown, long, tangled hairs; bracts 1.5–2 × 1 mm, caducous, with long, pale red-brown hairs; bracteoles ca. 1 × 0.5 mm, indumentum like that of bracts. **Flowers** 5.5–7 mm long, sessile; calyx 3–4 mm long, black to dark purple, sparsely to very sparsely hairy, the margins of lobes hairy, hairs long, red-brown, lobes 0.2–0.5 mm long, obtuse, sometimes with the apex acuminate; petals dirty white, the standard with mauve-purple markings, standard blade 5–7 mm wide, wing 3.5–4.5 × 1.5–2.2 mm, sculpturing absent, keel 2.5–4 × 1–2 mm; stamens 4.5–5.5 mm long, the vexillary stamen ca. 4 mm long; gynoeceium 5–5.75 mm long, ovary hairy on its lower surface or on both the upper and lower surfaces, or the entire distal half of the ovary hairy, hairs long, pale, ovules 1–2. **Fruit** 2.6–4.2 cm long, +- globose, weighing ca. 20 g or less when dry, green, drying brown to dark brown, smooth, appearing smooth but minutely tuberculate (best seen with lens or microscope); stipe 1–4 mm long; suture a slight depression adaxially, not visible abaxially; stylar remnant absent; mesocarp 1.5–2 mm thick, hard, granular, tinged slightly greenish; endocarp 1–2.5 mm thick, pale brown, woody, very hard, non-fibrous.

COMMENTS

In the Brazilian cerrados, sterile specimens of *A. cujabensis* might be confused with *A. vermifuga*, however, the smaller (5.5–7 mm long), white flowers of *A. cujabensis* are completely distinct from the larger (12.5–18 mm long), pink to purple flowers of *A. vermifuga* (Pennington 2003).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna

Vegetation Types

Cerrado (lato sensu), Seasonally Semideciduous Forest

Geographic DistributionConfirmed occurrences

North (Pará, Tocantins)

Northeast (Bahia)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)

Possible occurrences

Southeast (Minas Gerais)

HERBARIUM MATERIAL

G. Gardner, 3654, E, F, K, GH, G, BM, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira fraxinifolia Benth.

Has as synonym

heterotypic *Andira handroana* N.F.Mattos

heterotypic *Andira parvifolia* Mart. ex Benth.

heterotypic *Andira pernambucensis* N.F.Mattos

heterotypic *Andira pisonis* var. *emarginata* N.F.Mattos

heterotypic *Andira pisonis* var. *puberula* N.F.Mattos

heterotypic *Andira pisonis* Mart.

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/proeminent/flat; midrib canaliculate adaxial/with hair adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp woody/granular; seed 3; suture conspicuous. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Shrub or **small tree** to 12 m tall, with broad spreading crown in open situations; buttresses absent; bark grey-brown, fissuring vertically and flaking (larger trees). **Stipules** 2–9 mm long, to 1 mm wide, caducous, with sparse, red-brown +- appressed hairs. **Leaves** with axis 6–21.5(–25) cm long; rhachis sparsely hairy (occasionally more densely hairy), glabrescent, hairs red-brown, erect; stipels 1–5 mm long; pulvinules 2–3(–5) mm long, indumentum like that of rhachis. **Leaflets** in (2–)3–7 pairs, 2–12 × 0.7–4.2 cm, elliptic, narrowly elliptic, narrowly obovate, oblanceolate (more rarely lanceolate to broadly obovate), thick-chartaceous to subcoriaceous (rarely chartaceous), dark green, shiny adaxially, matt abaxially, base obtuse to rounded (rarely acute), often very slightly decurrent, apex acute, obtuse to rounded, generally with an acumen to 7 mm long, glabrous adaxially except scattered hairs in the groove of the primary vein, hairy to very sparsely hairy abaxially, indumentum most dense on veins, hairs pale to red-brown, erect, >0.2–1.0 mm long; primary vein channelled adaxially; secondary veins 6–10, +- plane to slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane adaxially and slightly raised or raised abaxially. **Panicles** 4–30 cm long, terminal and axillary, with red-brown, erect hairs, glabrescent towards the base; bracts 2–3.5 mm long, with appressed, red-brown hairs; pedicels 2.5–4 mm long; bracteoles 1.5–2 mm long, indumentum like that of bracts. **Flowers** 13–17 mm long; calyx 6–7 mm long, brown to purplish, hairy to sparsely hairy, hairs +- appressed, most dense on lobes, lobes 0.25–1.75 mm long, obtuse to acute; petals pink to purple, the standard with a white central marking, standard blade 10–14 mm wide, wing 8.5–11.5 × 5–7 mm, lamellate sculpturing present, keel 8–11 × 4–6 mm; stamens 9–15.5 mm long, the vexillary stamen 9–12 mm long; gynoecium 13.5–18 mm long, ovary hairy, stipe and style sparsely hairy to upper and lower surfaces of ovary sparsely hairy with scattered hairs on sides of ovary and stipe and style, hairs red-brown, +- appressed, ovules (3–)4–6(–7). **Fruits** 2.5–6 cm long, elongated, weighing ca. 20 g or less when dry, green, sweet-smelling, appearing smooth but irregularly ridged (best seen with lens or microscope), drying dark brown to brown; stipe 4–10 mm long; suture raised adaxially, obscure abaxially; styler scar raised at apex of fruit; mesocarp 1–3 mm thick, green when fresh, drying brown, hard, granular, with air spaces; endocarp 1–7 mm thick, brown, woody, fibrous.

COMMENTS

Andira fraxinifolia is a widespread and variable species, which can often be confused with *A. anthelmia*, *A. ormosioides*, and *A. legalis* in the rain forests and restinga of Atlantic coastal Brazil. In the Cerrado, it can be confused with *A. vermifuga*. The size of the flowers are helpful to distinguish *A. fraxinifolia* (13–17 mm long) from *A. ormosioides*, *A. legalis*, and *A. anthelmia* (18–24 mm long). Moreover, *A. fraxinifolia* lacks the large, persistent stipules found in *A. legalis* and *A. anthelmia*. The uniform gynoecium of *A. vermifuga* (either glabrous or sparsely hairy in the extremities only) contrasts with the uniform hairy organ found in *A. fraxinifolia*. The fruit is also an useful character, with those from *A. fraxinifolia* drying with a wrinkled surface, whereas in *A. fraxinifolia* they dry smooth. Furthermore, *A. fraxinifolia* does not grow in the cerrado woodlands, which is the main habitat for *A. vermifuga*. In the cerrado biome, *A. fraxinifolia* is only found in gallery forests.

Life Form

Tree

Substrate
Rupicolous

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Caatinga, Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types
Anthropic area, Riverine Forest and/or Gallery Forest, Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest), Coastal Forest (Restinga)

Geographic Distribution

Confirmed occurrences

Northeast (Alagoas, Bahia, Ceará, Paraíba, Pernambuco, Piauí, Rio Grande do Norte, Sergipe)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul)

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

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

HERBARIUM MATERIAL

H.C. Lima, 1711, RB
Pohl, s.n., K, **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Andira fraxinifolia* Benth.



Figure 2: *Andira fraxinifolia* Benth.

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira humilis Mart. ex Benth.

Has as synonym

heterotypic *Andira laurifolia* Benth.

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/flat; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary glabrous; petal purple. **Fruit:** endocarp woody fibrous; exocarp green/yellow; mesocarp fibrous/granular; seed 3; suture conspicuous. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Geoxylic suffrutex forming mats up to 10 m in diameter, aerial shoots to 50 cm tall (occasionally shrublike, to 2 m tall); bark brown, fissuring vertically. **Stipules** to 7 × 1 mm wide, with short, red-brown appressed hairs. **Leaves** with axis 9–45 cm long; rhachis sparsely to very sparsely hairy, glabrescent, hairs short, red-brown, appressed; stipels 1–4 mm long; pulvinules 1–5 mm long, indumentum like that of rhachis. **Leaflets** in 4–7 pairs, 4–12.5 × 1.3–4 cm, elliptic, narrowly elliptic (rarely narrowly obovate, oblanceolate, ovate to lanceolate), subcoriaceous to coriaceous, shiny, dark green adaxially, paler and matt abaxially, the venation paler, base obtuse, rounded (occasionally truncate or +- cordate), apex obtuse to rounded (occasionally acute), generally retuse, glabrous adaxially, glabrous to sparsely hairy abaxially, hairs minute (<0.2 mm long), pale with a red-brown base, appressed; primary vein channelled adaxially; secondary veins 8–11, plane to slightly sunken adaxially, +- raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane adaxially and abaxially. **Panicles** terminal, 10–30 cm long, hairy to very sparsely hairy at branch tips, glabrescent towards the base, hairs red-brown, short, +- appressed; bracts 1.5 mm long, with sparse, red-brown, short, appressed hairs; pedicels 1–4 mm long; bracteoles 0.75 mm long, indumentum like that of bracts. **Flowers** 14–16(–19) mm long; calyx 6–8 mm long, deep purple, sparsely hairy to glabrous except on margins of lobes, hairs red-brown to golden-brown, short, appressed, lobes 0.5–1.7 mm long, obtuse to acute; petals violet to purple, standard blade 10–12 mm wide, wing 7.5–10(–12) × 4–5 mm, lamellate sculpturing present, keel 7–9(–12) × 4–5(–6) mm; stamens 10–13(–16) mm long, the vexillary stamen 8.5–10(–12) mm long; gynoeceium 11.5–16 mm long, glabrous, ovules 4–5(–7). **Fruits** 2.8–5.3 cm long, elongated, weighing ca. 20 g or less when dry, green turning yellowish when ripe, sweet smelling, drying wrinkled, dark brown; stipe 5–10 mm long, but many fruits falling off without a stipe; suture raised adaxially with a central groove, less obvious below; stylar scar tiny; mesocarp 0.5–2 mm thick, pale yellow and soft when ripe, fibrous with oily granules; endocarp 0.5–1 mm thick, brown, woody, fibrous.

COMMENTS

Andira humilis is easy to recognize by its geoxylic suffrutex growth form, which is unique in the genus. It appears that occasionally *A. humilis* may form a shrub or tree, as occurs in other species of geoxylic suffrutices, such as *Kielmeyera rubriflora*. In the case of *A. humilis*, this aberrant habit may be the result of the prolonged absence of fire or possibly due to hybridization with shrub or tree species (Pennington 2003).

Life Form

Shrub, Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna

Vegetation Types

Cerrado (lato sensu)

Geographic Distribution

Confirmed occurrences

North (Pará, Rondônia)

Northeast (Bahia, Maranhão, Pernambuco, Rio Grande do Norte)

Central-west (Distrito Federal, Mato Grosso do Sul, Mato Grosso)

Southeast (Minas Gerais, São Paulo)

South (Paraná)

HERBARIUM MATERIAL

G.C.P. Pinto, 189-82, RB

Carl Martius, s.n., M, **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Andira humilis* Mart. ex Benth.



Figure 2: *Andira humilis* Mart. ex Benth.



Figure 3: *Andira humilis* Mart. ex Benth.



Figure 4: *Andira humilis* Mart. ex Benth.



Figure 5: *Andira humilis* Mart. ex Benth.



Figure 6: *Andira humilis* Mart. ex Benth.



Figure 7: *Andira humilis* Mart. ex Benth.

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira inermis (W. Wright) DC.

This treatment is composed of the following taxa: *Andira inermis*, *Andira inermis* subsp. *inermis*.

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial/proeminent abaxial/with hair adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet/8 pairs of the leaflet/9 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type terminal. **Flower:** wing with lamella; indumentum of the calyx glabrous/brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp woody/granular; seed 3; suture indistinct. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree to 35 m tall with broad spreading crown (in open situations in the Neotropics; trees in the African savannas may have ascending branches and a pyramidal crown; buttresses slight; bark rough, scaling, grey to dark brown. **Stipules** to 17 × 1 mm, occasionally persistent. **Leaves** with axis 6–34 cm long; rhachis sparsely to very sparsely hairy, hairs red-brown, erect; stipels 1–9 mm, often caducous; pulvinules 2–7 mm long, sparsely to very sparsely hairy, hairs red brown, erect. **Leaflets** in 2–9 pairs, 3.5–13.5 × 1.4–6 cm, narrowly elliptic, elliptic, narrowly obovate to oblanceolate, subcoriaceous to thick-chartaceous, base obtuse (rarely acute), apex obtuse to rounded with an acumen to 15 mm long, glabrous (occasionally very sparsely hairy abaxially, the hairs erect) except the primary vein adaxially and abaxially very sparsely hairy, the hairs red-brown, erect, >0.2–1.0 mm long; primary vein channelled adaxially, raised abaxially; secondary veins 10–14(–16), plane adaxially and abaxially or slightly raised abaxially, pattern brochidodromous, often with the basal few veins eucamptodromous; tertiary veins plane adaxially and abaxially. **Panicles** terminal, occasionally axillary, 10–40 cm long, hairy to sparsely hairy at branch tips, becoming less hairy towards the base, hairs red-brown, +- erect; bracts 2.5–3 mm long, with red brown appressed hairs; pedicels to 4 mm long or flowers subsessile; bracteoles 1.5 mm long, indumentum like that of bracts. **Flowers** (9–)10–12(–19) mm long; calyx 4–7 mm long, with appressed, red-brown indumentum or glabrous, except at the base and margins of lobes, lobes 0.3–1 mm long; petals pale pink to purple, standard blade 9–11 mm wide, wing 6–13 × 3–4.5 mm, lamellate sculpturing present, keel 6–13 × 3–4.5 mm; stamens 10–18 mm long, the vexillary stamen 7–13 mm long; gynoecium 9–20 mm long, usually with sparse, red-brown, +- appressed hairs only on the upper surface of the ovary, ovules 2–4. **Fruit** 3–6 cm long, +- globose to +- elongated, weighing ca. 20 g or less when dry, green, drying dark brown to black, smooth or somewhat rough and warty, occasionally slightly wrinkled; suture slightly raised adaxially and below; styler remnant insignificant or absent; mesocarp 1–3 mm thick, hard, granular; endocarp 2–5 mm thick, brown, woody, fibrous.

COMMENTS

This species occurs both in the Neotropics and in Africa. The presence of indumentum on the calyx and the size of the flowers are the most important characters to differentiate its subspecies. For instance, subsp. *inermis* has calyx with indumentum covering its entire outer surface, whereas subsp. *glabricalyx* and *roosevelti* have calices that are glabrous, except at the base and on the margins of the lobes. Flower length can separate the Mexican subsp. *glabricalyx* (flowers of 10–11 mm long) from the African subsp. *rooseveltii* (13–14 mm long).

Life Form

Tree

Substrate

Rupicolous

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna, Atlantic Rainforest

Geographic DistributionConfirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia)

Northeast (Maranhão)

Central-west (Goiás, Mato Grosso do Sul, Mato Grosso)

Southeast (Minas Gerais)

South (Paraná, Santa Catarina)

HERBARIUM MATERIAL

G. Hatschbach, 15795, SPF, RB, MBM

W. Wright, s.n., BM, **Typus****REFERENCE**Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira inermis (W.Wright) DC. subsp. *inermis*

DESCRIPTION

Flowers (9-) 10-12 (-19) mm long. Calyx covered with appressed indumentum.

COMMENTS

Andira inermis subsp. *inermis* has hard, heavy timber, which is used in the Neotropics for furniture and cabinetwork, and also for construction, railway sleepers, fence posts, etc. Because the wood has virtually no resonance, it is particularly suitable for radio and television cabinets (Weaver 1989). It is also used as an ornamental street tree in Venezuela and Costa Rica. The bark may be used as a vermifuge but is poisonous in high doses (Weaver 1989). It is also taken for intermittent fevers in Mexico and Brazil (Morton 1981).

Life Form

Tree

Substrate

Rupicolous

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest, Central Brazilian Savanna, Atlantic Rainforest

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia)

Northeast (Maranhão)

Central-west (Goiás, Mato Grosso do Sul, Mato Grosso)

Southeast (Minas Gerais)

South (Paraná, Santa Catarina)

HERBARIUM MATERIAL

C. Ferreira, 3380, RB, MO, F

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira legalis (Vell.) Toledo

Has as synonym

heterotypic *Andira frondosa* Mart. ex Benth.

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial/with hair adaxial; tertiary vein prominent/flat; number of the leaflet 4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet/8 pairs of the leaflet/9 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple. **Fruit:** endocarp woody fibrous; exocarp brown; mesocarp woody/granular; seed 3; suture indistinct. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree to 20 m tall, simply branched; buttresses absent; bark pale brown to grey-brown, rough, fissuring vertically; trunks of saplings marked with leaf and stipule scars, stipules often persistent; slash buff to pale red-brown, oxidizing darker red-brown, a little red exudate; wood buff to yellowish buff; twigs swollen, with crowded persistent stipules, leaf scars and stipule scars, with red-brown, erect hairs, glabrescent; lenticels not apparent. **Stipules** 1.5–4.5 cm long, >0.5 cm wide, persistent, ovate, with deep red-brown, appressed hairs, glabrescent. **Leaves** with axis 15–30(–60) cm long; rhachis with erect, red-brown hairs, glabrescent; stipels to 9 mm long; pulvinules 3–7 mm long, indumentum like that of rhachis. **Leaflets** in 4–7(–9) pairs, 5.5–15(–30) × 2.3–7(–11) cm, elliptic, narrowly obovate, ovate (rarely narrowly elliptic to broadly elliptic), coriaceous, base obtuse, rounded, +- truncate or very slightly cordate, apex obtuse or rounded, often slightly retuse or with an acumen to 7 mm long, glabrous adaxially except scattered hairs in the groove of the primary vein, hairy to sparsely hairy abaxially, indumentum most dense on veins, hairs red-brown, erect, >0.2–1.0 mm long; primary vein channelled adaxially; secondary veins 8–13, slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane to impressed adaxially and raised abaxially. **Panicles** 10–50 cm long, terminal (more rarely axillary), densely covered with erect, red-brown hairs; bracts 5.5–10 mm long, +- ovate, densely covered with long, +- appressed, red-brown to buff hairs; pedicels 2–3 mm long; bracteoles 7–10 mm long, +- ovate, indumentum like that of bracts. **Flowers** 19–23 mm long; calyx (7–)9–10.5 mm long, brown purple, hairy to densely hairy, hairs red-brown, often long; lobes 1–3 mm long, obtuse to acute; petals purple, standard with a pale marking at center, standard blade (12–)16–17 mm wide, wing 13–14 × (3.7–)6–7.2 mm, lamellate sculpturing present, keel (8.2–)11–13 × (4–)5–6 mm; stamens (12.5–)15 mm long, the vexillary stamen 12.5–15 mm long; gynoeceum (14.5–)17.2–18 mm long, ovary sparsely hairy, stipe and style very sparsely hairy to upper (basal half only) and lower surface of ovary hairy with a few hairs extending down the stipe, hairs red-brown, +-appressed, ovules 2–4. **Fruits** 5.6–12 cm long, elongated, weighing 100–300 g when dry, rough, pale brown speckled/dark brown (both fresh and dry); stipe to 5 mm long, sutures not obvious, sunken adaxially, slightly raised abaxially; stylar remnant not obvious; mesocarp 4–10 mm thick, pale brown, hard, finely granular; endocarp 3–18 mm thick, brown, woody, fibrous. Chromosome number unknown.

COMMENTS

This species is mostly similar to *A. anthelmia* and *A. ormosioides* (see taxonomic comments on *A. fraxinifolia* to distinguish these species).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Atlantic Rainforest

Geographic Distribution

Confirmed occurrences

Northeast (Alagoas, Bahia, Pernambuco)

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

HERBARIUM MATERIAL

C. Farney, 8079, GUA, RB

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Andira legalis* (Vell.) Toledo

Figure 2: *Andira legalis* (Vell.) Toledo



Figure 3: *Andira legalis* (Vell.) Toledo



Figure 4: *Andira legalis* (Vell.) Toledo



Figure 5: *Andira legalis* (Vell.) Toledo

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira macrothyrsa Ducke

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary eucamptodromous brochidodromous/proeminent/flat; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet/8 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal white. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp granular; seed 1/2; suture indistinct. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree to 40 m tall, often a canopy emergent; buttresses slight; bark smooth and grey; wood dark brown. **Stipules** early caducous (not seen). **Leaves** with axis 10–33(–40) cm long; rhachis with appressed brown hairs, glabrescent, hairs short; stipels to 2 mm long, caducous; pulvinules 3–9 mm long, indumentum like that of rhachis. **Leaflets** in 4–8 pairs, 4.5–11.5 × 1.8–4 cm, narrowly ovate, elliptic, or narrowly obovate (rarely narrowly elliptic), subcoriaceous, base obtuse (rarely acute); apex obtuse, often retuse or with an acumen to 10 mm long, glabrous adaxially, hairy to sparsely hairy abaxially, hairs short, appressed, red-brown, <0.2 mm long; primary vein channelled adaxially; secondary veins 8–12, plane to very slightly raised adaxially, slightly raised abaxially, pattern eucamptodromous becoming brochidodromous, the veins generally curving uniformly; tertiary veins plane adaxially and plane to slightly raised abaxially. **Panicles** terminal or axillary (axillary inflorescences are smaller), 8–30 cm long, with dense red-brown appressed hairs at branch tips, glabrescent towards the base; bracts 2 mm long, early caducous, with dense appressed red-brown hairs; pedicels to 1 mm long or flowers subsessile; bracteoles 1 mm long, early caducous, indumentum as bracts. **Flowers** 9–11 mm long, unpleasantly scented; calyx 4–5 mm long, with dense, red-brown, appressed hairs, lobes 0.5–1.2 mm long, acute or obtuse, the apex acuminate; petals white-yellow to greenish, the standard with a central red-brown to carmine marking, standard blade 5.5–8 mm wide, wing 4–5 × 1.5–2 mm, lamellate sculpturing present, keel 2.5–4 × 1–1.5 mm; stamens 6–7 mm long, the vexillary stamen 4.5 mm long; gynoecium 6.5–8 mm long, the ovary with dense red-brown appressed hairs, ovules 1–2. **Fruit** 5–5.5 cm long, elongated, weighing 20–30 g when dry, green and strongly scented, drying smooth, brown to red-brown; mesocarp 2–2.5 mm thick, reddish brown, granular; endocarp 1.5 mm thick, woody with coarse, pale fibers.

COMMENTS

This species is most similar to *A. chigorodensis*, but may also be confused with *A. inermis* subsp. *inermis*, being distinguished from the latter by the short, appressed hairs on the abaxial leaflet surfaces and in its whitish to greenish flowers with a red-brown to carmine spot in the center of the standard petal.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Amazonian Campinarana, Terra Firme Forest

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas)

HERBARIUM MATERIAL

A. Ducke, 1036, US, RB, R, K, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira marauensis N.F.Mattos

DESCRIPTION

Leaf: side abaxial pubescent; side adaxial glabrous; veins secondary brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet unifoliolate/2 pairs of the leaflet/3 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx glabrous; ovary pilose/glabrous; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp brown; mesocarp granular; seed 1/2; suture indistinct. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree to 35 m tall (though flowering from 3 m tall); buttresses absent; bark grey brown, fissuring vertically and flaking in small plates. **Stipules** ca. 2.5 × 1 mm, caducous, sparsely hairy. **Leaves** with axis 3–10 cm long; rachis very sparsely hairy, glabrescent, hairs short, red-brown, +- appressed; pulvinules 3–7 mm long; stipels not seen (either absent or early caducous). **Leaflets** in (1–)2(–3) pairs, 2.5–8.5 × 1.1–3.7 cm, elliptic, narrowly obovate (rarely broadly obovate), terminal leaflets often the most distinctly obovate, subcoriaceous, base acute to obtuse, slightly de current, apex obtuse, rounded (rarely slightly retuse or with an acumen to 2 mm long), glabrous adaxially, very sparsely hairy abaxially, hairs red-brown, short (<0.2 mm long), appressed; primary vein channelled adaxially; secondary veins 8–10, +- plane adaxially, slightly raised abaxially, pattern brochidodromous; tertiary veins plane adaxially and plane or slightly raised abaxially. **Panicles** 5–11 cm long, terminal and axillary, with sparse, short, appressed red-brown hairs at branch tips, glabrescent towards the base; bracts narrow, caducous, ca. 2 mm long, sparsely hairy, hairs red-brown, +- appressed; pedicels 1–2 mm long; bracteoles caducous, not seen. **Flowers** 9–11 mm long; calyx 4–4.5 mm long, deep purple, glabrous except around the margins of the lobes, lobes 0.2–0.3 mm, obtuse, shallow; petals pink to purple, standard blade 7.5–10 mm wide, wing 5–7 × 2.5–3.5 mm, lamellate sculpturing present, keel 5–7 × 3–3.5 mm; stamens 8–9 mm long, the vexillary stamen 5.5–6 mm long; gynoeceum 9.5–12.5 mm long, glabrous or with 1, 2, or 3 hairs; ovules 1–2. **Fruit** weighing ca. 20 g or less when dry, drying smooth.

COMMENTS

This species is more morphologically similar to rain forest trees of *A. nitida*, but it differs in its smaller leaves, its obovate, blunt-ended leaflets with an acute to obtuse base, smaller flowers, and fewer ovules.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Atlantic Rainforest

Vegetation Types

Coastal Forest (Restinga)

Geographic Distribution

Confirmed occurrences

Northeast (Bahia)

HERBARIUM MATERIAL

A.M. Carvalho, 3510, CEPEC, NY, RB

R. P. Belem & R. S. Pinheiro, 3089, CEPEC, UB, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira micrantha Ducke

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx brown reddish; ovary pilose; petal white. **Fruit:** endocarp woody; exocarp brown; mesocarp woody/granular; seed 1/2; suture indistinct. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree to 35 m tall; presence of buttresses unknown; bark brown, smooth. **Stipules** early caducous (not seen). **Leaves** with axis 3–14 cm long; rhachis glabrous; stipels 0.5–2(–6) mm long, caducous; pulvinules 3–7 mm long, glabrous. **Leaflets** in 2 pairs, 3.3–13 × 1.1–5.1 cm, narrowly ovate, elliptic (rarely lanceolate, broadly elliptic to narrowly obovate), thickly chartaceous to subcoriaceous, base obtuse to rounded, often slightly decurrent, apex obtuse with an acumen to 15 mm long, glabrous (seedling leaflets with sparse, short, red-brown indumentum abaxially); primary vein channelled adaxially, the groove flattened, particularly at the base; secondary veins 6–8, plane adaxially, very slightly raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane adaxially and abaxially. **Panicles** 3.5–15 cm long, axillary and terminal, hairy to sparsely hairy with red-brown, +- appressed hairs at branch tips, glabrescent below; bracts and bracteoles early caducous, not seen; pedicels 0.3–0.5 mm long. **Flowers** 6.5–7 mm long; calyx 3–4 mm long, glabrous or with a few scattered appressed red-brown hairs, the lobes with sparse red-brown hairs, lobes 0.2–0.4 mm long, obtuse; petals white to cream with the standard marked with lilac, standard blade 6–6.5 mm wide, wing 3.7–5 × 2–2.2 mm, sculpturing absent, keel 2.7–3.5 × 1.6–1.9 mm; stamens 5 mm long, the vexillary stamen 3 mm long (all 10 stamens united in flowers dissected from two specimens); gynoecium 4.6–5.5 mm long, with sparse to very sparse red-brown appressed hairs that become less frequent towards the stipe, ovules 1(2). **Fruits** 9–10 cm long, elongated, weighing 100–300 g when dry, green ripening grey to grey-brown, with mesocarp purple (at least on outer edge), drying very dark brown, almost black, shallowly wrinkled and minutely tuberculate, with pale spots; stipe 2 mm long, 6–8 mm wide, short and stout; suture a thin raised line adaxially, not visible abaxially (dried fruits tend to crack along the upper suture); stylar remnant absent; exocarp thin, black in section; mesocarp 4–8 mm thick, pale brown to brown, granular, very hard; endocarp 5–9 mm thick, pale brown, very hard, non-fibrous.

COMMENTS

This is a rain forest species and is most likely to be confused with *A. coriacea* and *A. taurotesticulata*, which also grow in this habitat and possess large fruit. These two species are not, however, sympatric with *A. micrantha*, which grows in central Amazonia in the vicinity of Manaus. *Andira micrantha* may be distinguished from *A. coriacea* by the persistent stipules of the latter and *Andira testiculata* has ribbed fruits from the suture and leaflets with sparse hairs on the lower face, whereas the fruit of *A. micrantha* are smooth and the leaflets are glabrous.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amazonas)

HERBARIUM MATERIAL

A. Ducke, s.n., RB, 23864, K, U, US, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira multistipula Ducke

DESCRIPTION

Leaf: side abaxial glabrous; side adaxial glabrous; veins secondary brochidodromous/flat; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 5 pairs of the leaflet/6 pairs of the leaflet/7 pairs of the leaflet/8 pairs of the leaflet/9 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp woody/granular; seed 3; suture indistinct. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree to 20 m tall; buttresses absent; bark brown, smooth. **Stipules** to 5 × 1.5 cm at the base, persistent, with sparse red-brown appressed hairs, glabrescent and the hairs becoming paler. **Leaves** with axis 13–42 cm long; rhachis very sparsely hairy, hairs red-brown, rapidly glabrescent; stipels 1.5–10 mm long, quite persistent; petiolules 3–5 mm long, indumentum like that of rhachis. **Leaflets** in (5–)6–9 pairs, 5.5–13.5 × 2–4.5 cm, narrowly obovate, oblanceolate, elliptic to narrowly elliptic (proximal leaflets occasionally narrowly ovate or lanceolate), chartaceous to thick-chartaceous, base obtuse, rarely acute, often slightly decurrent, apex acute to obtuse, with an acumen to 15 mm long, glabrous (one specimen seen with very sparse erect hairs abaxially); primary vein channelled adaxially; secondary veins 10–14, plane adaxially, +- plane to slightly raised abaxially, pattern brochidodromous; tertiary veins plane adaxially and abaxially. **Panicles** terminal and axillary (generally a large, terminal, +- conical inflorescence with some smaller axillary inflorescences at the base, forming a single "attractive unit"), 15–45 cm long, hairy to sparsely hairy, hairs red-brown, +- appressed, glabrescent at base; bracts 2.5–4 mm long, with red-brown appressed hairs; pedicels to 0.5 mm long or flowers subsessile; bracteoles 1.5–2 mm long, with red-brown appressed hairs. **Flowers** 11–12.5 mm long; calyx green yellow with red wine-colored lobes, 4–5 mm long, with sparse red-brown appressed hairs to glabrous except at the base and margins of the lobes, lobes 0.4–0.7 mm long, obtuse; petals pink to deep red-purple, the standard with a central white or white-yellow marking, standard blade 9–9.5 mm wide, wing 8.5–9 × 3.2–3.5 mm, lamellate sculpturing present but poorly developed, keel 8–8.5 × 3.5–4 mm; stamens 12 mm long, the vexillary stamen 8.5 mm long; gynoecium 11–12 mm long, the upper surface of the ovary sparsely hairy, the hairs red-brown, +- erect, occasionally extending to the base of the style, ovules 3. **Fruit** 2.5–3.5 cm long, elongated, weighing ca. 20 g or less when dry, green, drying very dark brown to black, slightly wrinkled; stylar remnant barely discernible; mesocarp 1.5–2 mm thick, greyish brown, hard, granular; endocarp 1–1.5 mm thick, brown, woody, fibrous.

COMMENTS

The flowers and fruit of *A. multistipula* are very similar to those of *A. inermis*. However, the species is clearly distinct because of its large, persistent stipules. Ducke (1944) claimed that these stipules distinguish *A. multistipula* from any other species of the entire Amazonian flora.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Inundated Forest (Igapó), Terra Firme Forest, Ombrophylous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas)

HERBARIUM MATERIAL

A. Ducke, 1035, US (US01013564), RB (RB00606101), R (R000055087), K (K000118471), **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira nitida Mart. ex Benth.

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp fibrous/granular; seed 2/3; suture conspicuous. **Seed:** number 2/3.

ADDITIONAL DESCRIPTION

Multi-stemmed shrub to **tree** 25 m tall; buttresses absent or very small; bark brown, fissuring vertically and scaling (large trees), or pale brown, often marked with patches of lichen (shrubs and small trees in restinga). **Stipules** to 10 × 1 mm, caducous, hairy to sparsely hairy, glabrescent. **Leaves** with leaf axis 4–15(–25) cm long; rachis pale brown to brown, the pulvinus often darker, sparsely hairy or glabrous, hairs short, red-brown, +- appressed; stipels 1(–2) mm long, caducous. **Leaflets** in 2–4(–5) pairs, 2.4–11.5(–14) × 1.7–4.5(–6) cm, elliptic, broadly elliptic, narrowly ovate, ovate (rarely narrowly elliptic, suborbiculate to broadly ovate), coriaceous to thick-chartaceous, base obtuse, rounded to slightly cordate, often slightly decurrent, apex acute, obtuse, rounded, often slightly retuse or with a short acumen to 10 mm long, glabrous adaxially, very sparsely hairy abaxially or glabrous, hairs red-brown, short (<0.2 mm long), appressed; primary vein channelled adaxially; secondary veins 6–13, +- plane to slightly sunken adaxially, +- plane to slightly raised abaxially, pattern eucamptodromous becoming brochidodromous, or +- completely brochidodromous; tertiary veins plane adaxially and abaxially. **Panicles** 6–30 cm long, terminal and axillary, with sparse to very sparse, short, appressed, red-brown hairs at branch tips, becoming less hairy towards the base; bracts 1.5–2 mm long, narrow, caducous, sparsely to very sparsely hairy, hairs red-brown, +- appressed; pedicels to 2 mm long or flowers sessile; bracteoles 0.5–1 mm long, indumentum like that of bracts. **Flowers** 10–13 mm long; calyx 4–5.5 mm long, red-brown to reddish to +- black, with sparse red-brown, appressed hairs or glabrous except around the margins of the lobes; lobes 0.2–0.5 mm, obtuse; petals pinkish white to purple, the standard pale with violet markings or pinkish with a central white marking, standard blade 8–8.5 mm wide, wing 5.6–8 × 3–3.5 mm, lamellate sculpturing present, keel 5–7.5 × 2.6–3.5 mm; stamens 8.5–10 mm long, the vexillary stamen 6–7.5 mm long; gynoecium 9–13 mm long, glabrous or stipe, lower portion of style, upper and lower surfaces of the ovary very sparsely hairy, hairs red-brown, appressed, ovules (1–)2–4. **Fruits** 3–7 cm long, elongated, weighing ca. 20 g or less when dry, green, often glaucous, smooth or ridged from upper to lower suture, drying +- smooth or wrinkled, brown to very dark brown with or without a waxy bloom; stipe to 8 mm long (many fruits breaking off without a stipe); suture prominently raised adaxially, raised but obscure abaxially; styler remnant raised and obvious or imperceptible; mesocarp 4–7 mm thick when fresh, 1–2.5 mm thick when dry, pale green to green, fibrous, sweet-smelling, drying brown, hard, slightly granular; endocarp 2–5.5 mm thick, brown to dark brown, drying paler, fibrous.

COMMENTS

This species is most likely to be confused with *A. humilis*, *A. marauensis*, and *A. carvalhoi*. *Andira humilis* is distinguished by its unique geoxylic suffrutex growth. *Andira carvalhoi* is clearly distinct because of its much larger brown fruits.

Life Form

Shrub, Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Atlantic Rainforest

Vegetation Types

Seasonally Semideciduous Forest, Ombrophylous Forest (Tropical Rain Forest), Coastal Forest (Restinga)

Geographic DistributionConfirmed occurrences

Northeast (Alagoas, Bahia, Paraíba, Pernambuco, Rio Grande do Norte, Sergipe)

Southeast (Espírito Santo, Rio de Janeiro)

HERBARIUM MATERIAL

D. Sucre, 8656, RB, NY, K

M.A.P. Wied-Neuwied, s.n., BM (BM000901306), M (M0121106), BR (BR0000008489838), **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira ormosioides Benth.

DESCRIPTION

Leaf: side abaxial glabrous; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial/with hair adaxial; tertiary vein flat; number of the leaflet 3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary pilose; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp brown; mesocarp granular; seed 3; suture indistinct. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree up to 30 m tall, long-boled with small crown (even in open situations), with small buttresses; bark pale brown to grey-brown, fissuring vertically and flaking slightly. **Stipules** to 16 × 1 mm, moderately persistent, with red-brown, +- appressed hairs. **Leaves** with axis 9–30(–35) cm long; rachis with red-brown erect hairs, glabrescent; stipels 2–3(–6) mm long; pulvinules 2–5 mm long, indumentum like that of rachis. **Leaflets** in (3–)4–5 pairs, 4.7–15.5 (–19 on sterile shoots) cm long, 1.8–7 cm wide, elliptic to narrowly obovate, subcoriaceous, shiny, dark green adaxially, base obtuse to rounded, often very slightly decurrent, apex obtuse to rounded, occasionally with an acumen to 7 mm long, glabrous adaxially except scattered hairs in the groove of the primary vein, hairy to sparsely hairy abaxially, indumentum most dense on veins, hairs red-brown, erect, >0.2–1.0 mm long; primary vein channelled adaxially; secondary veins 8–11, slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane to slightly impressed adaxially and raised abaxially. **Panicles** 10–30 cm long, terminal (more rarely axillary), with red-brown, erect hairs; bracts 3–7 mm long, with red-brown, +- appressed hairs; pedicels 3–7 mm long; bracteoles 1–2.5 mm long, indumentum like that of bracts. **Flowers** 18–23 mm long; calyx 9–10 mm long, with red-brown, +- appressed to +- erect hairs, lobes 0.8–2 mm long, obtuse to acute; petals pink to purple, standard blade 17–20 mm wide, wing 12–15 × 5–6.5 mm, lamellate sculpturing present, keel 10–12 × 4–7 mm; stamens 15–20 mm long, the vexillary stamen 11.5–15 mm long; gynoecium 18.5–20 mm long, ovary sparsely hairy, stipe and style sparsely hairy, hairs red-brown, +- appressed, ovules 5–8. **Fruits** 4.7–5.6 cm long, elongated, weighing ca. 20 g or less when dry, smooth, very dark brown with green beneath when fresh, drying very dark brown, appearing smooth but minutely tuberculate (best seen with lens or microscope); stipe 6–8 mm long; suture slightly raised adaxially, flanked by two shallow grooves, very slightly raised abaxially; stylar remnant raised at apex of fruit; mesocarp 3–4 mm thick, pale greenish white, drying pale brown, granular; endocarp 2–3 mm thick, dark brown, woody, fibrous.

COMMENTS

Growth form and fruit indicates that *A. ormosioides* is distinct from the three species to which it is most similar: *A. fraxinifolia*, *A. legalis*, and *A. anthelmia*. The fruit of *A. ormosioides* are small (4.7 – 5.6 cm long, vs 5.6 – 12 cm long in *A. legalis*) and have a pale greenish white mesocarp (in comparison to the green mesocarp of *A. fraxinifolia* and *A. anthelmia*).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Atlantic Rainforest

Vegetation Types

Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

Northeast (Bahia, Pernambuco)

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

HERBARIUM MATERIAL

J.G. Kuhlmann, 528, F, NY, RB, UB

H.W. Schott, s.n., K (K000118487), F (F0058851F), K,  (K000118487), **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira parviflora Ducke

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx brown reddish; ovary pilose; petal white. **Fruit:** endocarp woody fibrous; exocarp yellow; mesocarp woody/granular; seed 1/2; suture indistinct. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree to 20 m tall, buttresses absent; bark smooth, pale brown, cracking vertically, not flaking, some horizontal markings. **Stipules** to 6 × 5 mm, densely covered with erect, tangled red-brown hairs. **Leaves** with axis 2.5–17.5 cm long; rachis with red-brown erect, tangled hairs; stipels 0.5–1.5 mm long; pulvinules 0.5–1.5 mm long, indumentum like that of rachis. **Leaflets** in (2–)3–4(–5) pairs, 2–10 × 1–4 cm, narrowly obovate, elliptic (rarely oblanceolate), coriaceous, base obtuse or rounded (rarely slightly cordate), apex obtuse, often with a short acumen to 5 mm long, glabrous adaxially, abaxially with sparse red-brown, erect hairs, >0.2–1.0 mm long, the veins more densely hairy; primary vein channelled adaxially; secondary veins 10–15, slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous, the brochidodromous veins anastomosing very close to the margin; tertiary veins impressed to slightly impressed adaxially and raised abaxially. **Panicles** 3–18 cm long, axillary and terminal, densely covered with red-brown, erect, tangled hairs; bracts 2.5–3 × 1.5–2.5 mm, densely covered with pale brown, +- appressed hairs; bracteoles 1.5–2 × 0.75–1 mm, indumentum like that of bracts. **Flowers** 6–7.5 mm long; calyx 3–4 mm long, lilac to purple, with sparse, appressed, pale brown hairs; petals sessile, whitish, the standard with purple marking, standard blade 6.2–7.5 mm wide, wing 4.5–5 × 2.8–3.2 mm, sculpturing absent, keel 4–5 × 2–2.5 mm; stamens ca. 5 mm long, the vexillary stamen ca. 3 mm long; gynoeceum 4.7–5.2 mm long, the ovary with pale brown, +- appressed hairs on upper and lower surfaces, indumentum extending to the top of the stipe and base of the style with scattered hairs at the sides of the ovary, or ovary sparsely hairy on upper and lower surfaces only, ovules 1–2. **Fruits** 3–4.1 cm long, +- globose to elongated, weighing ca. 20 g or less when dry, green, drying red-brown to dark brown to almost black, appearing smooth but somewhat tuberculate (best seen with lens or microscope); stipe insignificant (fruit +- sessile); suture indistinct adaxially and abaxially; stilar remnant tiny; mesocarp 1.5 mm thick, pale brown, granular, hard; endocarp 1.5–4 mm thick (thickened along upper side), cream to pale brown, hard, non-fibrous.

COMMENTS

This distinctive species is the only species in the genus from the Amazon region which bears red-brown hairs on the lower face of the leaflets, which makes the species very distinctive among its counterparts.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types







Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amazonas, Pará)

HERBARIUM MATERIAL

A. Ducke, s.n., US, 23865,  (US00004367), S, 23865 (S-R-9641), RB, 23865,  (RB00606114), RB, 23865,  (RB00606109), RB, 23865,  (RB00540135), NY,  (NY00005111), K,  (K000118486), K, G, F, RB, 23865, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira praecox Arroyo ex R.T.Penn.

DESCRIPTION

Leaf: side abaxial pubescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet trifoliolate/2 pairs of the leaflet/3 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx brown reddish; ovary pilose; petal pink. **Fruit:** endocarp woody fibrous; exocarp green; mesocarp granular; seed 2; suture indistinct. **Seed:** number 2.

ADDITIONAL DESCRIPTION

Tree to 30 m tall; presence of buttresses unknown; bark and slash unknown; twigs brown, densely covered with red-brown appressed hairs, becoming grey-brown, glabrescent. **Stipules** to 10 mm long, to 1 mm wide, caducous, with appressed, red-brown hairs. **Leaves** with axis 3–10(–18.5) cm long; rachis with sparse, red-brown, appressed hairs; stipels 1–2 mm long; pulvinules 2–5 mm long, sparsely to densely hairy, hairs red-brown, +- appressed, short (<0.2 mm long). **Leaflets** in (1–)2(–3) pairs, 3.5–9.5(–14) × 1.9–4.3(–6) cm, narrowly obovate (rarely elliptic), terminal leaflets distinctly obovate, thick-chartaceous to subcoriaceous, base obtuse (rarely acute or rounded), slightly decurrent, rounded (rarely obtuse), apex slightly retuse (or rarely with an acumen to 4 mm long), glabrous adaxially, sparsely hairy abaxially, hairs short, appressed, red-brown or pale with a red-brown base; primary vein channelled adaxially; secondary veins 8–12, plane adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous, or +- completely brochidodromous; tertiary veins plane adaxially. **Panicles** 9–15 cm long, axillary and terminal, with red-brown hairs at branch tips, hairs +- appressed, glabrescent at base; bracts caducous, not seen; pedicels 1–2 mm long, glabrous; bracteoles caducous, not seen. **Flowers** 6.5–7 mm long; calyx 3–3.5 mm long, glabrous except the margins of the lobes sparsely covered with red-brown hairs, lobes 0.5 mm, obtuse; petal color unknown (probably white), standard blade 5.5 mm wide, wing 3.5–5 × 2–2.5 mm, sculpturing absent, keel 3–4 × 2–2.5 mm; stamens 5–5.5 mm long, the vexillary stamen 3–4 mm long; gynoeceum with ovaries swollen, sparsely hairy on upper surface, stipe ca. 3 mm long, style 2.5–3 mm long, ovules 1–2. **Fruits** 3.1–4.1 cm long, +- globose, weighing ca. 20 g or less when dry, very dark brown, almost black, slightly wrinkled (with brown pock-marks where the surface is broken) and minutely tuberculate with a slight waxy bloom (best seen with lens or microscope); stipe to 9 mm long; sutures raised adaxially and abaxially; styler remnant insignificant; mesocarp 1–2 mm thick, pale brown, hard, granular; endocarp 2–5 mm thick, buff, woody, non fibrous, very hard.

COMMENTS

Andira praecox is most similar to *A. teverquinata*, especially in leaf morphology, however several characteristics can be pointed out to distinguish both species, mainly its smaller flowers (6.5–7 mm long vs 9 mm long in *A. teverquinata*).

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types




Terra Firme Forest, Ombrophylous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amapá)

HERBARIUM MATERIAL

H.S. Irwin, 48442, F, NY, U, UB, K,  (K000908029), NY,  (NY00005112), US,  (US00170401), **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira surinamensis (Bondt) Splitg. ex Amshoff

This treatment is composed of the following taxa: *Andira surinamensis*, .

Has as synonym

basionym *Geoffroea surinamensis* Bondt

heterotypic *Andira retusa* var. *oblonga* Benth.

heterotypic *Andira retusa* (Poir.) A.DC.

heterotypic *Andira surinamensis* var. *ovatifoliolata* N.F.Mattos

DESCRIPTION

Leaf: side abaxial pubescent; side adaxial glabrous; **veins secondary** eucamptodromous brochidodromous/proeminent/flat; **midrib** canaliculate adaxial; **tertiary vein** prominent/flat; **number of the leaflet** 3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet. **Inflorescence:** **indumentum** brown reddish; **type** terminal. **Flower:** **wing** with lamella; **indumentum of the calyx** brown reddish; **ovary** glabrous; **petal** pink. **Fruit:** **endocarp** woody fibrous; **exocarp** green; **mesocarp** fibrous; **seed** 2; **suture** conspicuous. **Seed:** **number** 3.

ADDITIONAL DESCRIPTION

Tree to 40 m tall with spreading crown in open situations; large trees buttressed; bark brown to dark brown, scaling. **Stipules** 2–3 mm long, narrow, caducous. **Leaves** with axis 10–30 cm long; rhachis sparsely hairy, glabrescent, hairs short, golden-brown to red-brown, appressed; stipels 1–3 mm long; pulvinules 3–5 mm long, indumentum like that of rhachis. **Leaflets** in 3–5 pairs, 3–15 × 1.5–6 cm, narrowly obovate, broadly obovate, narrowly elliptic, elliptic, broadly elliptic, oblong to suborbiculate, subcoriaceous, base rounded, obtuse to acute and occasionally slightly decurrent or somewhat cordate, apex retuse to rounded, occasionally acute and with an acumen to 7 mm long (to 20 mm long on sapling leaflets), glabrous adaxially, sparsely hairy abaxially, hairs short (<0.2 mm long), appressed, golden-brown to red-brown; primary vein channelled adaxially; secondary veins 7–13, sunken or slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous; tertiary veins plane to slightly impressed adaxially and raised abaxially. **Panicles** terminal or occasionally axillary, 11–28 cm long, with brown to pale brown hairs at the branch tips, glabrescent towards the base, hairs short, appressed; bracts 2 mm long, hairy to sparsely hairy, hairs golden-brown to red-brown; pedicels 2–4 mm long; bracteoles 1 mm long, indumentum like that of bracts. **Flowers** 13–18 mm long; calyx 6–7 mm long, with red-brown hairs, lobes 0.5–1.5 mm long, acute, occasionally obtuse; petals pink-purple to purple, the standard with a central pale marking, standard blade 10–12 mm wide, wing 8–11 × 3–4 mm, lamellate sculpturing present, keel 7–9 × 3–5 mm; stamens (9–)12–13.5(–17.5) mm long, the vexillary stamen 8–12.5 mm long; gynoeceum 13–17 mm long, very sparsely hairy on the upper and/or lower surface of the ovary, hairs red-brown, erect, ovules 3–4. **Fruits** 4–6 cm long, elongated, weighing ca. 20 g or less when dry, green, slightly glaucous, smelling very sweet, drying dark brown and distinctly wrinkled; stipe 12 mm long; suture raised adaxially and below, but hard to discern because of wrinkles; styler remnant minute; mesocarp 4–7 mm thick when fresh, thinner when dry, green, fibrous, drying with abundant air spaces; endocarp 2–8 mm thick, woody, fibrous, brown, drying paler.

COMMENTS

Andira surinamensis might be confused with *A. vermifuga*, *A. humilis*, *A. galeottiana*, and *A. macrocarpa*. *Andira macrocarpa* and *A. galeottiana* differ in their much larger fruits and, like *A. vermifuga*, by the longer, erect indumentum on the abaxial leaflet surface. *Andira humilis* has short, appressed hairs on its leaflet undersurfaces, like those of *A. surinamensis*, but it is a geoxylic suffrutex rather than a tree.

Life Form

Shrub, Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna

Vegetation Types

Caatinga (stricto sensu), Cerrado (lato sensu), Seasonally Deciduous Forest, Seasonally Semideciduous Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Acre, Amazonas, Amapá, Pará, Rondônia, Roraima)

Northeast (Bahia, Ceará, Maranhão, Paraíba, Piauí)

Central-west (Mato Grosso)

Possible occurrences

Northeast (Alagoas, Rio Grande do Norte)

HERBARIUM MATERIAL

R.L. Fróes, 11805, US, U, NY, K, IAN, GH, A

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira trifoliolata Ducke

DESCRIPTION

Leaf: side abaxial glabrous; side adaxial glabrous; veins secondary brochidodromous/eucamptodromous brochidodromous/flat; midrib canaliculate adaxial/flat adaxial/proeminent abaxial; tertiary vein flat; number of the leaflet trifoliolate. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary glabrous; petal pink. **Fruit:** endocarp woody fibrous; exocarp yellow; mesocarp woody/granular; seed 1/2; suture sulcate. **Seed:** number 2.

ADDITIONAL DESCRIPTION

Tree to 20(–30) m tall; presence of buttresses unknown; bark dark brown. **Stipules** to 9 × 1 mm, brown, caducous, with appressed, red-brown hairs at tips, glabrous near base; leaves pinnately trifoliolate. **Leaves** with leaf axis 2.5–9(–12) cm long; rhachis dark brown, this layer peeling to reveal pale brown beneath, glabrous; stipels 1 mm long, caducous; pulvinules 3–7(–8) mm long, glabrous. **Leaflets** in 1 pair, 3.7–11.5 × 1.9–5 cm, broadly elliptic, elliptic (rarely suborbiculate and some terminal leaflets narrowly obovate), subcoriaceous, base obtuse to rounded and often slightly decurrent, apex obtuse with a short acumen to 5 mm long, glabrous; primary vein plane adaxially; secondary veins 5–8, plane adaxially, slightly raised abaxially, curving uniformly, pattern +- completely brochidodromous or +- eucamptodromous or mixed; tertiary veins plane adaxially and abaxially. **Panicles** axillary or terminal, 6.5–17.5 cm long, with sparse red-brown hairs at branch tips, glabrescent below; bracts early caducous (seen only on young inflorescence of a single specimen), 5 mm long, with sparse red-brown hairs; pedicels to 0.3 mm long or absent; bracteoles 2–2.5 mm long, early caducous, indumentum as on bracts. **Flowers** 8–10 mm long; calyx 4–5 mm long, black, glabrous or with a few scattered appressed red-brown hairs, the lobes very sparsely hairy becoming more hairy at the margins, 90+ to obtuse, 0.5–1 mm deep; petals white or dull flesh-colored, the standard probably marked with red or purple, standard blade 7.5–9 mm wide, wing 6–7 × 3–3.5 mm, sculpturing absent, keel 4–5.7 × 2.2–3 mm; stamens 6–7 mm long, the vexillary stamen 4.5–5 mm long; gynoeceum 7.2–8.5 mm long, the ovary sparsely hairy on upper and lower surfaces and often on the sides, ovules 1–2. **Fruit** 2.3–3.5 cm long, +- globose, weighing ca. 20 g or less when dry, green, drying dark brown or almost black, appearing smooth but minutely wrinkled (best seen with lens or microscope), with pale pock-marks where surface is broken; stipe 15–25 mm long; suture a thin raised line adaxially, not visible abaxially; stilar remnant tiny; mesocarp 1.5–2 mm thick, pale to dark brown (or greenish), hard, granular; endocarp 2–3 mm thick, pale buff, very hard, non-fibrous.

COMMENTS

Andira trifoliolata is the only species in the genus that has all leaves trifoliolate. It is likely to be confused only with *A. praecox*, which rarely has a few trifoliolate leaves, and *A. tervequinata*, which has 1–2 pairs of leaflets; neither of these species is uniformly trifoliolate like *A. trifoliolata*.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types

Inundated Forest (Igapó), Terra Firme Forest, Ombrophylous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amazonas)

HERBARIUM MATERIAL

A. Ducke, s.n., RB, 35079, G, K, U, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira unifoliolata Ducke

DESCRIPTION

Leaf: side abaxial glabrescent; side adaxial glabrous; veins secondary eucamptodromous brochidodromous; midrib canaliculate adaxial; tertiary vein flat; number of the leaflet 2 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type axillary/terminal. **Flower:** wing without lamella; indumentum of the calyx brown reddish; ovary glabrous; petal pink. **Fruit:** endocarp woody fibrous; exocarp brown; mesocarp woody/granular; seed 2; suture indistinct. **Seed:** number 1/2.

ADDITIONAL DESCRIPTION

Tree to 35 m tall with small buttresses; bark rough, flaking; twigs dark brown, with very sparse, red-brown hairs when young, rapidly glabrescent. **Stipules** to 4 mm long, very early caducous (seen only on a seedling), with sparse, red-brown hairs. **Leaves** unifoliolate (1–2 pairs leaflets in seedlings); petiole 5–16(–18) cm long, glabrous, dark brown, this layer peeling to reveal pale brown beneath; stipels to 2 mm long (seen only on seedlings); pulvinule 3.5–6 mm long, glabrous. **Leaflets** 4.7–13 × 1.3–5 cm, elliptic (to narrowly ovate), dark green, shiny adaxially, much paler and matt abaxially, the venation pale, thick-chartaceous (seedlings) to coriaceous, base obtuse (or rarely acute), often slightly decurrent, apex acute to obtuse with an acumen to 10 mm long, glabrous adaxially, very sparsely hairy abaxially, glabrescent, hairs short, appressed; primary vein plane adaxially; secondary veins 6–7, plane adaxially, raised or only slightly raised abaxially, pattern disorganized, eucamptodromous with occasional brochidodromous linkages (particularly at the leaflet tip), the veins curving uniformly; tertiary veins plane adaxially and abaxially. **Panicles** 2–4.5 cm long, axillary (and terminal), with sparse, pale red-brown hairs at branch tips, glabrescent proximally; bracts and bracteoles early caducous (not seen); pedicels 0.8–1 mm long. **Flowers** 6–7 mm long; calyx 3–4 mm long, dark brown or +- black, glabrous or with a few scattered appressed pale red-brown hairs, the margins of the lobes sparsely to very sparsely hairy; lobes obtuse with small pointed tips, 0.3–0.8 mm. Petals white, the standard marked with red; standard blade ca. 6 mm wide, wing 4.5–4.8 × 2–2.2 mm, sculpturing absent, keel 3.3–4 × 2–2.2 mm; stamens ca. 6 mm long, the vexillary stamen ca. 4 mm long; gynoecium ca. 7 mm long, very few scattered hairs on ovary upper surface, ovules 1–2. **Fruits** 2.5–3.7 cm long, +- globose, weighing ca. 20 g or less when dry, green, turning yellow, sweet-smelling, very dark brown, almost black, with a slight waxy bloom, very slightly wrinkled; stipe 3–4 mm long; suture a thin line adaxially, not detectable abaxially; stylar remnant tiny; mesocarp pale reddish brown, hard, granular; endocarp unknown.

COMMENTS

Unifoliolate leaves are unique to *A. unifoliolata*, and this species cannot be confused with any other of *Andira*. Morphologically it is most similar to *A. trifoliolata*. The two species are easily distinguished vegetatively: *A. trifoliolata* is uniformly trifoliolate, whereas *A. unifoliolata* is uniformly unifoliolate. *Andira unifoliolata* also has flowers 6–7 mm long compared to 8–10 mm long in *A. trifoliolata*.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains

Amazon Rainforest

Vegetation Types





Terra Firme Forest, Ombrophyllous Forest (Tropical Rain Forest)

Geographic Distribution

Confirmed occurrences

North (Amazonas, Pará, Roraima)

HERBARIUM MATERIAL

A. Ducke, s.n., NY,  (NY01288128), NY,  (NY00005133), NY,  (NY00005132), K,  (K000118480), K, INPA, U, RB, 35078, G, **Typus**

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.

Andira vermifuga (Mart.) Benth.

Has as synonym

basionym *Geoffroea vermifuga* Mart.

homotype *Andira spinulosa* (Mart.) Benth.

heterotypic *Andira kuhlmannii* N.F.Mattos

heterotypic *Andira paniculata* Benth.

heterotypic *Geoffroea spinulosa* Mart.

DESCRIPTION

Leaf: side abaxial pilose; side adaxial glabrous; veins secondary brochidodromous/eucamptodromous brochidodromous/flat; midrib canaliculate adaxial; tertiary vein prominent/flat; number of the leaflet 2 pairs of the leaflet/3 pairs of the leaflet/4 pairs of the leaflet/5 pairs of the leaflet/6 pairs of the leaflet. **Inflorescence:** indumentum brown reddish; type terminal. **Flower:** wing with lamella; indumentum of the calyx brown reddish; ovary glabrous; petal purple/pink. **Fruit:** endocarp woody fibrous; exocarp green/brown; mesocarp fibrous/granular; seed 3; suture indistinct. **Seed:** number 3.

ADDITIONAL DESCRIPTION

Tree to 12(–25) m tall with spreading crown, occasionally a shrub, able to root sprout; buttresses very slight or absent; bark thick, rough with deep vertical fissures. **Stipules** to 5 × 1 mm wide, caducous. **Leaves** with axis 6–30 cm long; rachis brown to red-brown, hairy to sparsely hairy, glabrescent, hairs pale brown, erect; stipels 1–2 mm long; pulvinules 2–5 mm long. **Leaflets** in (2–)3–5(–6) pairs, 4–11 × 1.8–6.6 cm, broadly elliptic, elliptic, broadly obovate (rarely ovate, broadly ovate, suborbiculate, orbiculate to narrowly obovate), subcoriaceous to coriaceous, dark green, shiny adaxially, matt abaxially with red-brown indumentum, base obtuse to rounded (rarely acute), apex obtuse to retuse (rarely acute or emarginate), glabrous adaxially, hairy to sparsely hairy abaxially, hairs erect, pale red-brown, >0.2–1.0 mm long; primary vein channelled adaxially; secondary veins 5–11, slightly sunken adaxially, raised abaxially, pattern eucamptodromous becoming brochidodromous (occasionally completely brochidodromous); tertiary veins plane adaxially and raised abaxially. **Panicles** terminal (more rarely axillary), densely covered red-brown erect hairs at branch tips, glabrescent towards the base; bracts narrow, caducous, ca. 1.5–2 mm long, with red-brown, +- appressed to erect hairs; pedicels 2–4 mm long; bracteoles narrow, caducous, ca. 1 mm long, indumentum like that of bracts. **Flowers** 12.5–18 mm long; calyx 6–7 mm long, brown to deep purple-brown, sparsely hairy, hairs red-brown to pale red-brown, +- appressed, lobes 1–2 mm long, acute to obtuse; petals pink to purple, standard blade 9–15 mm wide, wing 8–10 × 3.5–6 mm, lamellate sculpturing present, keel 7–10 × 3.5–5 mm; stamens 12–16 mm long, the vexillary stamen 8–11 mm long; gynoeceum 12–15 mm long, ovary glabrous or the upper and lower surfaces sparsely hairy, hairs +- erect, pale with red-brown bases, ovules (2–)4–6. **Fruits** 2.4–4 cm long, elongated, weighing ca. 20 g or less when dry, green, strongly scented, drying brown (more rarely red-brown or dark brown), wrinkled, suture a fine raised line or indiscernible adaxially, indiscernible abaxially; stylar remnant tiny; mesocarp 0.5–2 mm thick, fibrous, often drying with oily granules; endocarp 1–3 mm thick, pale red-brown, woody, fibrous.

COMMENTS

Andira vermifuga is most closely related to *A. galeotiana*, although there is a wide geographical separation between the two species, with *A. galeotiana* occurring only in Mexico.

Life Form

Tree

Substrate

Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains

Amazon Rainforest, Caatinga, Central Brazilian Savanna, Atlantic Rainforest

Vegetation Types

Cerrado (lato sensu), Seasonally Deciduous Forest, Seasonally Semideciduous Forest

Geographic DistributionConfirmed occurrences

North (Acre, Amazonas, Tocantins)

Northeast (Bahia, Ceará, Maranhão, Piauí)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)

Southeast (Minas Gerais, São Paulo)

HERBARIUM MATERIAL

B.A.S. Pereira, 1134, UB, K, F, E

FIELD IMAGES / ILLUSTRATIONS

Figure 1: *Andira vermifuga* (Mart.) Benth.



Figure 2: *Andira vermifuga* (Mart.) Benth.



Figure 3: *Andira vermifuga* (Mart.) Benth.



Figure 4: *Andira vermifuga* (Mart.) Benth.



Figure 5: *Andira vermifuga* (Mart.) Benth.



Figure 6: *Andira vermifuga* (Mart.) Benth.



Figure 7: *Andira vermifuga* (Mart.) Benth.

REFERENCE

Pennington, R.T. 2003. Monograph of *Andira* (Leguminosae-Papilionoideae). Systematic Botany Monographs. Vol. 64. 143 pp.