

NEPHROLEPIDACEAE

by

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15. **NEPHROLEPIS** Schott, *Gen. Fil.* t. 3. 1834.

Type: *Polypodium exaltatum* L. = *Nephrolepis exaltata* (L.) Schott

Terrestrial or epiphytic. Stems erect or decumbent, bearing scales and many fibrous roots, often stoloniferous. Leaves pinnate, up to ca. 15 cm to 3 m long, borne in a cluster; pinnae entire or deeply pinnatifid, glabrous to pubescent, veins free. Sori round to slightly elongate, borne on a receptacle on the vein-ends, near or back of the margin, covered by a lunate or reniform indusium; spores monolete. $2n = 82$.

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Distribution: a pantropical-subtropical genus of perhaps 20 species, with six native to tropical America and 3 in the Guianas.

KEY TO THE SPECIES

- 1 Leaves more often furcate; pinnae orbicular or with 2 lobes
 4. *N. cordifolia* cv. *duffii*
 Leaves never or very rarely furcate; pinnae elongate 2
- 2 Pinnae regularly forked 6. *N. falcata* cv. *furcans*
 Pinnae not forked 3
- 3 Pinnae irregularly incised, crisped, hairy 7. *N. hirsutula* cv. *superba*
 Pinnae regularly incised 4
- 4 Indusium shallowly reniform to semilunate, the mature sporangia spreading
 obliquely towards the pinna apex 2. *N. cordifolia*
 Indusium of at least the basal sori deeply reniform, suborbicular, the
 sporangia at maturity spreading in all directions 5
- 5 Pinnae, or at least some of them, pinnatifid or more complex
 5. *N. exaltata* cv. *bostoniensis*
 Pinnae simple 6
- 6 Pinnae minutely squamulose to glabrescent beneath, chartaceous, with an
 acute auricle on the acroscopic side of their base; rachis bearing deciduous
 fibrillose scales 3. *N. rivularis*
 Pinnae hirtellous to glabrescent beneath, herbaceous, with an obtuse or rarely
 subacute auricle on the acroscopic side of their base or basally subequally
 and broadly cuneate; rachis deciduously hirtellous 1. *N. biserrata*

1. ***Nephrolepis biserrata*** (Sw.) Schott, Gen. Fil., pl. 3. 1834. – *Aspidium biserratum* Sw., J. Bot. (Schrader) 1800: 32. 1831. – *Lepidoneuron biserratum* (Sw.) Fée, Mém. Fam. Foug. 5 (Gen. Fil.): 301. 1852. – *Nephrolepis exaltata* (L.) Schott var. *biserrata* (Sw.) Baker in Martius, Fl. Bras. 1(2): 493. 1870. Type: Mauritius, Gröndal s.n. (Herb. Sw., S-PA, not seen). Plate 22A

Aspidium acutum Schkuhr, Kr. Gew. L. 32, t. 31. 1806. – *Aspidium ensifolium* Schkuhr ex G. Meyer, Flor. Essequib.: 289. 1818. – *Nephrodium acutum* (Schkuhr) C. Presl, Rel. Haenk. 1: 31. 1825. – *Nephrolepis ensifolia* (Schkuhr) C. Presl in J. Smith, J. Bot. 1. 1842 - *Nephrolepis acuta* (Schkuhr) C. Presl ex Hook., Spec. Fil. 4: 153. 1862., based on the same type. Type: Schkuhr cited only a figure, no collector's name or locality.

Terrestrial or epiphytic. Rhizome erect, stoloniferous. Leaves 30-300 cm long and 15-40 cm wide; petiole pale, scaly at the base, 15-50 cm long, canaliculate; pinnae sessile, more or less equally auriculate at the base,

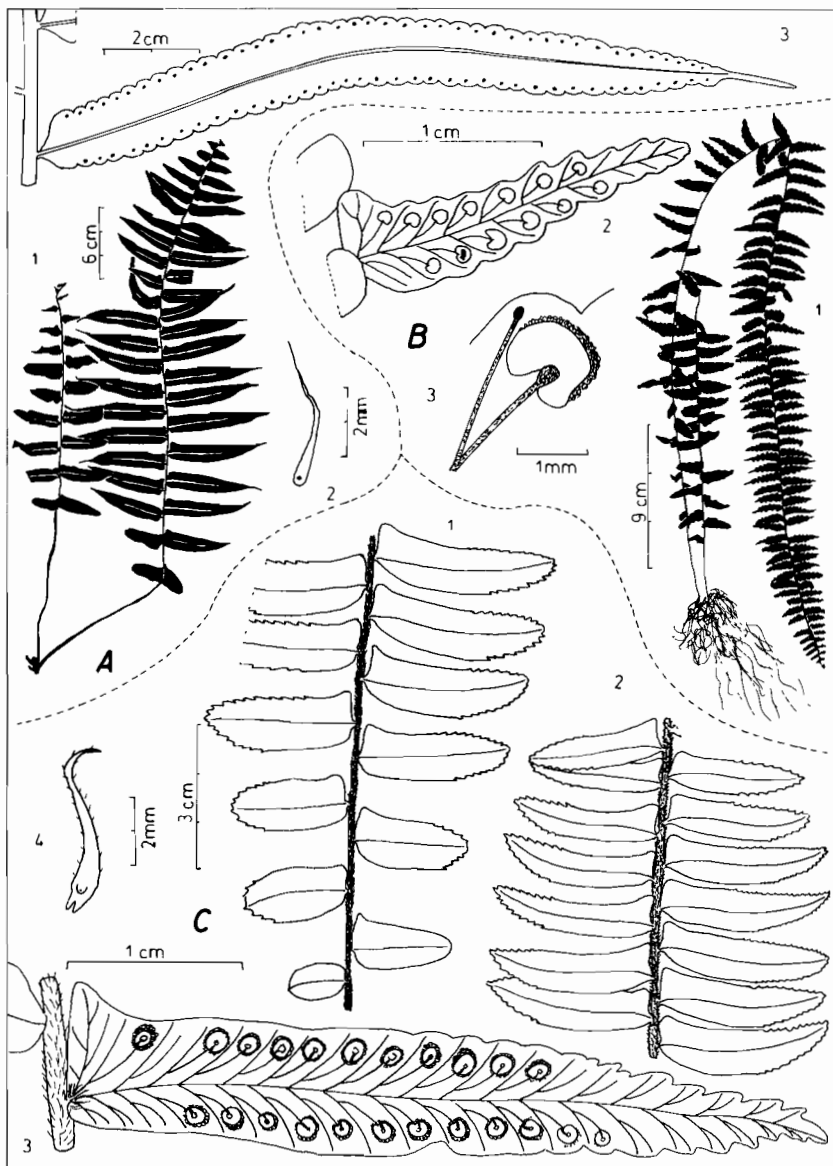


Plate 22. — A, *Nephrolepis biserrata* (Sw.) Schott: 1, a plant; 2, rhizome scale (Deward 246, CAY); 3, pinna (deGranville 920, CAY). — B, *N. cordifolia* (L.) C. Presl: 1, a plant; 2, pinna; 3, veins and sorus (de Granville 1296, CAY). — C, *N. rivularis* (Vahl) Mett. ex Krug: 1, basal part of lamina; 2, subdistal part of leaf; 3, pinna (Cremers 4490, CAY); 4, rhizomescale (Cremers 6611, CAY). Drawing by G. Cremers.

the apex narrowed, acute to (usually) acuminate, margin dentate or sinuate, hirtellous or glabrescent beneath. Indusium orbicular, the sinus mostly facing the costa of the pinna. $n = 41$ in Trinidad (Jermy & Walker, 1905).

Distribution: Old World, tropical and subtropical America; in swamps and wet forests, on dead or decaying trees, epiphytic in petiole bases of palms. 123 collections studied from the Guianas (GU:24; SU:33; FG:66).

Selected specimens: Guyana: Bartica, Essequibo R., de la Cruz 1893 (CM, F, GH, MO, US); Berbice, Ro. Schomburgk I 444 (B, BM, E, G, K, OXF, P).

Surinam: Coppename R., Lindeman 5552 (BBS, K, U, US); without loc., Hostmann & Kappler 1070 (B, C, E, G, U, UC).

French Guiana: Cr. Gabrielle, de Granville 929 (CAY, P, Z); Mt. de la Trinité, de Granville 6595 (BR, CAY, P, U, Z); Mt. Belvédère, upper Camopi R., de Granville 7064 (B, BR, CAY, NY, P, U, Z).

2. *Nephrolepis cordifolia* (L.) C. Presl, Tent. Pterid.: 79. 1836. – *Polypodium cordifolium* L., Sp. Pl. 2: 1089. 1753. – *Aspidium cordifolium* (L.) Sw., J. Bot. (Schrader) 1800: 2. 1801. Type: Petiver, Pter. Amer. t.1, f.11, based on Plumier, Traité Foug. Amér. t.71, on a plant found in Hispaniola. Plate 22B

Epiphytic. Rhizome stoloniferous, sometimes tubers on the stolons. Leaves 20-300 cm long, 8-10 cm wide; petiole pale, glabrous, 5-20 cm long; pinnae sessile to petiolulate, rather unequal at the base, rounded to semicordate on the acroscopic side, acutely to usually obtusely auriculate on the basispic side, apex usually obtuse to acute, glabrous. Indusium reniform, sinus mostly facing the apex of the pinna. $n = ca. 40$ and $2n = 82$ from the Galapagos Islands (Jarrett et al., 1968).

Distribution: Old World and tropical America, in dense forest, in rocky places and on road banks. 15 collections studied from the Guianas (GU:9; SU:2; FG:4).

Selected specimens: Guyana: Kaieteur Plateau, Maguire & Fanshawe 23143 (GH, K, NY, US).

Surinam: Paramaribo, Samuels 429 (B, F, GH, K, L, NY, P, US).

French Guiana: Tumuc Humac, de Granville 1296 (CAY, P, Z); Piste Sophie, La Grève, F. Hallé s.n. (P, U, US).

3. **Nephrolepis rivularis** (Vahl) Mett. ex Krug in Urban, Bot. Jahrb. Syst. 24: 122. 1897. – *Polypodium rivulare* Vahl, Eclog. Amer. 3: 51. 1807.
Type: Montserrat, Ryan s.n. (C, not seen). Plate 22C

Epiphytic. Rhizome stoloniferous. Leaves 100-120 cm long, 8-10 cm wide; petiole pale brown, covered by scales like those of the rhizome at the base, pubescent, unequal at the base, the basiscopic side cuneate, the acroscopic acutely auriculate, apex obtuse to acuminate, minutely appressed-hairy abaxially, basal ones reduced, rounded or obtuse at the apex. Indusium orbicular, sinus very narrow, mostly facing the margin of the pinna. n = 41 in Trinidad (Jermy & Walker, 1985).

Distribution: Tropical America; on tree trunks and palms. 123 collections studied from the Guianas (GU:43; SU:32; FG:48).

Selected specimens: Guyana: Upper Mazaruni R., de la Cruz 2166 (CM, F, MO, NY, US); Pomeroon R., Pomeroon Distr., de la Cruz 2994 (CM, F, GH, MO, US).

Surinam: Paloemeu, junction with Tapanahony R., R. Tryon 5666 (GH, NY, U, US); Wilhelmina Mts., confl. Lucie R., Irwin et al. 55725 (BR, F, MO, NY).

French Guiana: Cr. Parepou, upper Approuague R., Oldeman T.167 (CAY, NY, P); Saül, Mt. Galbao, de Granville 8878 (CAY, NY, P, US, Z).

Cultivars

Many cultivars are derived from *N. cordifolia* and *N. exaltata*.

4. **Nephrolepis cordifolia** (L.) C. Presl cv. **duffii**. – *N. cordifolia* (L.) C. Presl f. *duffii* (T. Moore) Proctor, Bull. Inst. Jamaica, Sci. Ser. 5: 42. 1953. – *N. duffii* T. Moore, Gard. Chron. n.s. 9: 622, f. 113. 1878. Type: Territory of New Guinea, Duke of York's Island, Hort. Veitch. ex Duff (Herb. Moore in K, not seen). Plate 23A

This cultivar produces the characteristic tubers. The fronds are often dichotomously branched, sometimes several times. The pinnae are small, either orbicular or consist of two orbicular lobes and are mostly sterile.

Specimens examined: Guyana: Upper Rupununi R., near Dadanawa, de la Cruz 1680 (F, NY); Malali, Demerara R., de la Cruz 2606 (GH, NY). Surinam: Zanderij, cultivated, Tryon & Kramer 5617 (GH). French Guiana: cultivated at Cayenne, Cremers 10109 (CAY).

Note: In the Flora of Venezuela (1969) Vareschi listed this cultivar as *N. cordifolia* cv. *nummularius* Vareschi.

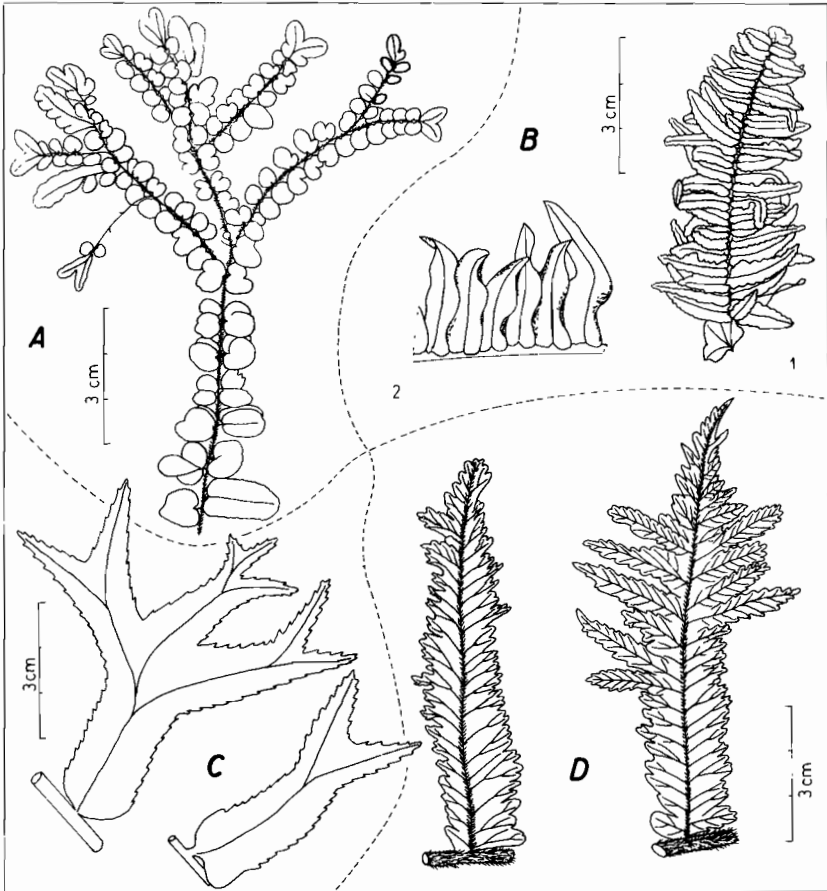


Plate 23. — A, *Nephrolepis cordifolia* (L.) C. Presl cv. *duffii*: distal part of leaf (Cremers 10109, CAY). — B, *N. exaltata* (L.) Schott cv. *bostoniensis*: 1, part of leaf; 2, pinnae (Cremers 10110, CAY). — C, *N. falcata* (Cav.) C. Chr. cv. *furcans*: pinnae (Cremers 9630, CAY). — D, *N. hirsutula* (Forst.) C. Presl cv. *superba*: pinnae (Cremers 9631, CAY). Drawing by G. Cremers.

5. ***Nephrolepis exaltata*** (L.) Schott cv. **bostoniensis** = “Boston fern“. –
N. exaltata (L.) Schott var. *bostoniensis* Davenport, New England
 Florist. 2: 137. 1896. Plate 23B

After Morton (1958): “The origin of this, the commonest of all house ferns, is unknown. Over a hundred named cultivars of the Boston Fern have appeared between the years 1900-1920.“ These cultivars combine variation in several respects – division (pinnate to 5-pinnate), ruffling of the pinnae, forking of the blade and pinnae, dwarfing.

Specimens examined: Guyana: Baracara Cr., Mazaruni R., C.A. Persaud 7 [FD. 5260] (BRG-FD).

Surinam: no specimen, but seen in a garden in Paramaribo.

French Guiana: Cayenne, Cremers 10110 (CAY).

6. ***Nephrolepis falcata*** (Cav.) C. Chr. cv. **furcans**. – *N. falcata* f. *furcans*
 (T. Moore) Proctor, Rhodora 63: 32. 1961. Plate 23C

Each pinna is regularly forked like a fish tail; this is commonly known as the “Fishtail Fern“. It is reported to be of cultivated origin in New Guinea, but is now naturalized in many countries.

Specimens examined: Guyana: Hyde Park East Bank, Demerara R., 1922, Warren s.n. (F).

Surinam: no specimen, but seen in a garden in Paramaribo.

French Guiana: Cayenne, Cremers 9630 (CAY).

Note: Vareschi in Flora of Venezuela cited this cultivar as *N. cordifolia* cv. *furcata* Vareschi. Jones (1987) called this cultivar *N. falcata* forma *furcans*.

7. ***Nephrolepis hirsutula*** (Forst.) C. Presl cv. **superba** Plate 23D

This cultivar is pinnate, hairy; pinnae are deeply and irregularly incised, and have crisped and wavy margins.

Specimens examined: Guyana: Hyde Park East Bank, Demerara R., 1922, Warren G.B. s.n. (F).

Surinam: no specimen, but seen in a garden in Paramaribo.

French Guiana: Cayenne, Cremers 9631 (CAY).

Note: In Jones (1987) this cultivar is called *N. exaltata* “Hillii“.

OLEANDRACEAE

by

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LITERATURE

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Taxon 18: 538-541.
- Maxon, W.R. 1914. – Studies of tropical American ferns. 5. The American
species of *Oleandra*. Contr. U. S. Natl. Herb. 17: 392-398.
- Scamman, E. 1961. – The genus *Oleandra* of Costa Rica. *Rhodora* 63: 335-340.

16. **OLEANDRA** Cav., *Anales Hist. Nat.* 1: 115. 1799.

Type: *Oleandra neriiformis* Cav.

Terrestrial or epiphytic. Rhizome climbing or long-creeping, slender, bearing scales. Leaves mostly monomorphic, 10-50 cm long, articulate in the petioles, lamina entire, veins free. Sori roundish, dorsal on the veins, not paraphysate, covered by an orbicular indusium; spores monoete. 2n = 40, 41, ca. 80.

Distribution: A pantropical genus of perhaps 50 species. In America the 9 species of *Oleandra* occur in southern Mexico through Central America, in the Antilles, in northern South America and in the Andes south to Bolivia and southeastern Brazil, but only 2 occur in the Guianas.

KEY TO THE SPECIES

- 1 Rhizome creeping or scandent, with spreading scales 1. *O. articulata*
Rhizome erect, with appressed scales 2. *O. pilosa*

1. ***Oleandra articulata*** (Sw.) C. Presl, *Tent. Pterid.* 78. 1836. – *Aspidium articulatum* Sw., *J. Bot. (Schrader)* 1800(2): 30. 1802. Iconolectotype: Martinique, Morne Rouge, Plumier, *Traité Foug. Amér.* 118 t. 136.

Plate 24A

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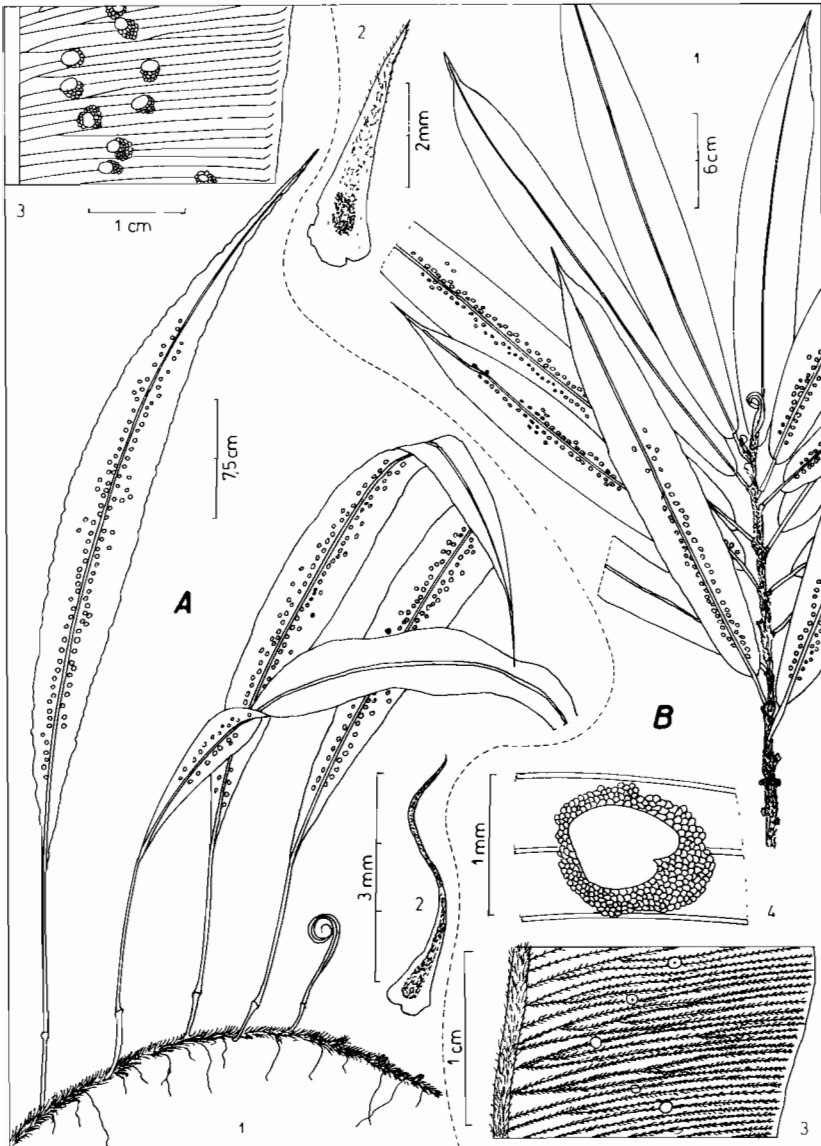


Plate 24. — A, *Oleandra articulata* (Sw.) C. Presl: 1, plant (by W.H.A. Hekking in U); 2, rhizome scale; 3, part of fertile lamina (Billiet & Jadin 1584, CAY). — B, *O. pilosa* (Sw.) C. Presl: 1, plant (after W.H.A. Hekking); 2, rhizome scale; 3, part of pinna; 4, vein and sorus (de Granville 1266, CAY). Drawing in part by G. Cremers.

Oleandra nodosa (Willd.) C. Presl, Tent. Pterid.: 78. 1836. – *Aspidium nodosum* Willd. in L., Sp. Pl., 5(1): 211. 1810 (nom. superfl., illegit.). Type: the same as that of *Aspidium articulatum* Sw.

Rhizome creeping or scandent, covered by spreading scales. Leaves on ca. 5-30 mm long, slender, scaleless phyllopodia; petiole articulate at base, 1-4 + 2-8 cm long; lamina elliptic, 18-30 x 3.5-5.5 cm, acute, gradually narrowed at the base, glabrous; veins simple or once-forked, parallel. Sori orbicular, medial to inframedial, irregularly placed on the veins; indusium glabrous. 2n = 41 from Jamaica and Trinidad (Jermy & Walker, 1985).

Distribution: West Indies, Guatemala to Panama, tropical South America; scandent and epiphytic, in dense forest, 0-850 m. 89 collections studied from the Guianas (GU:19; SU:20; FG:50).

Selected specimens: Guyana: Kaieteur Falls, Potaro R., Maguire & Fanshawe 23431 (K, NY, US); Essequibo R., Moraballi Cr., near Bartica, Richards 373 (BM, K).

Surinam: Brownsberg, Kramer & Hekking 2574 (B, BBS, GH, K, P, U, US, Z); Tafelberg, Maguire 24366 (F, K, NY, U, US).

French Guiana: Mt. Bellevue, Inini R., Cremers 9176 (B, CAY, P, U, Z); Conana R., June 1831, Leprieur 13 (B, BR, F, G, GH, LE, NY, P, US).

2. ***Oleandra pilosa*** Hooker in Hooker & Bauer, Gen. Fil., pl. 45B. 1840.
Type: Guyana, Berbice, Ro. Schomburgk I 416 (B, E, G, K, OXF, P).

Plate 24B

Aspidium pendulum Splitg., Tijds. Nat. Gesch. 7: 412. 1840, non Raddi. 1819.
Type: Surinam, Splitgerber 738 (holotype L not seen; isotype P).

Rhizome ascending to erect, branched, covered by closely appressed scales. Phyllopodia ca. 1-5 mm long, at first scaly like the rhizome; petiole articulate at base, 0.5-2 cm long, lamina elliptic, 18-32 x 3-4.5 cm, acute to acuminate, gradually to abruptly narrowed at base, pubescent especially on the costa, margin ciliate, veins once or twice forked, pubescent. Sori orbicular, mostly inframedial, at irregular distances from the costa; indusium pubescent and ciliate.

Distribution: Colombia to Brazil; terrestrial, rarely epiphytic, in moist forest, 0-150 m. 46 collections studied from the Guianas (GU:13; SU:9; FG:24).

Selected specimens: Guyana: Kaieteur Plateau, Maguire & Fanshawe 23142 (F, K, MO, NY, U, US); Pakaraima Mts., Mt. Aymatoi, Maas, Menega et al. 5707 (K, MO, NY, P, U, Z).

Surinam: Zanderij, Kramer & Hekking 2717 (BBS, K, U); near Kappel-savanne, S of Tafelberg, Kramer & Hekking 3061 (U, US).

French Guiana: Tumuc Humac, de Granville 1266 (CAY, P, U, Z); Cr. Gabaret, Oyapock R., Cremers 9917 (B, CAY, INPA, MO, NY, P, U, US, Z).

Cremers Georges, Kramer K.U. (1993)

Nephrolepidaceae

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