

Leaves ca. 35 cm to 1 m long. **Petiole scales** more or less persistent, especially toward the base, dark brown to atropurpureous, or some light brown, often many ca. 2 cm long and to 1 cm broad. **Lamina** 2-pinnate, very rarely nearly 3-pinnate at the base of some pinnae, ca. 8–20 cm broad, rarely 5–7 cm broad; the apex lacking a bud, gradually to rather abruptly reduced. **Rachis** bearing usually very many brown fibrils and brown or darker, long, often involute or twisted, narrow scales, some lanceolate scales and broader ones usually also present. **Pinnae** patent to strongly ascending, the apex subacute to acuminate and deeply pinnatifid to the tip; basal pinnae reduced or not, usually ascending, sometimes patent or reflexed; pinnules with revolute to strongly revolute margins, the tip usually revolute.

Most commonly growing on open, rocky hillsides, in rock crevices, and at the edge of large rocks, also on grassy or shrubby slopes and in heath lands, 1700 to usually 3000–4400 m, Amazonas to Puno.

Venezuela and Colombia south to Bolivia.

Aspidium pycnolepis is evidently the correct basionym, among those names proposed by Klotzsch in the same publication. *Aspidium gelidum* was reduced to *Phegopteris pycnolepis* by Mettenius (Abh. Senckenberg Naturf. Ges. 2; 295. 1858; Über einige FarnGattungen, 4; 11. 1859) and *Polypodium cochleatum* (as *Phegopteris cochleata* Mett.) was reduced to *Polypodium pycnolepis* by Hooker (Sp. fil. 4: 248. 1862).

This species is characterized by dense, brown fibrils on the rachis and narrow, involute or twisted, usually brown or darker scales, especially toward the apex of the petiole and on the rachis. The usually large petiole scales are persistent.

Amazonas: Prov. Chachapoyas, Cerro Campanario, Wurdack 1589 (F, GH, UC, US). **La Libertad:** Between Huamachuco and Cajambamba, Correll & Smith P924 (GH). **Huánuco:** Tambo de Vaca, Macbride 4369 (F, GH, US). Mito, Macbride & Featherstone 1699 (F, US). **Apu-rimac:** Prov. Abancay, Dist. Abancay, Saunders 762 (GH). **Cuzco:** Prov. Calca, Vargas 15583 (GH). Prov. Urubamba, Chincheros, Taucsa, Davis et al. 1572 (F). **Puno:** Prov. Sandia, S of Limbani, Metcalf 30436 (F, GH, MO, UC, US). Prov. Huancané, Occa Pampa, Shepard 74 (GH).

Comments

Polystichum muricatum (L.) Fée, (Mém foug. 5) Gen fil. 278. 1852.

Polypodium muricatum L., Sp. pl. 1093. 1753. TYPE: Haiti, Petiver, Pteri-graphia Amer., no. 53, t. 1, f. 6. 1712. (evidently a poor copy of Plumier, Traité foug. Amér. t. 39). *Polystichum moritzianum* (Klotzsch) Hieron., Hedwigia 46: 354. 1907.

This species has been commonly recorded from Peru; however, the collections are mostly either *P. platyphyllum* or *P. montevidense*. *Polystichum muricatum* is a species of Mexico and Central America, the Greater Antilles, and the northern part of South America.

It is characterized by large leaves, to 1 m or more long, attenuate pinnae that are deeply pinnatifid to the tip, flat pinnules, large, and brown or darker petiole scales that are often short-ciliate, and usually persistent well above the base, and especially by the rachis bearing only fibrils and very narrow scales, rather than some broad scales. The species is commonly indusiate, although Smith (1985) indicates that in Venezuela it is both indusiate and exindusiate.

XIV. Olfersia

Contributed by Robbin C. Moran

Olfersia Raddi, Opusc. Sci. 3: 283, t. 11b. 1819. TYPE: *Olfersia corcovadensis* Raddi = *O. cervina* (L.) Kunze. **Figure 14.**

Plants terrestrial or low-climbing. **Stem** short-creeping, in cross-section with the meristemes arranged irregularly and each one not surrounded by a dark sclerenchymatous sheath. **Sterile and fertile leaves** strongly dimorphic. **Sterile lamina** pinnate with a conform terminal pinna. **Veins** forking near or at the base, parallel, ca. 1 mm apart, connected by a submarginal vein (this sometimes difficult to see in dried material). **Fertile leaves** 2-pinnate, rarely 1-pinnate. **Sori** exindusiate, linear to oblong. **Spores** monoletе, echinulate, ca. 50 microns long.

Olfersia is a monotypic genus that occurs from southern Mexico to southeastern Brazil and in the Antilles. It has been included in *Polybotrya* because of its strongly dimorphic leaves and creeping, scaly stem; however, *Olfersia* differs in stem anatomy, venation, and shape of the leaf apex.

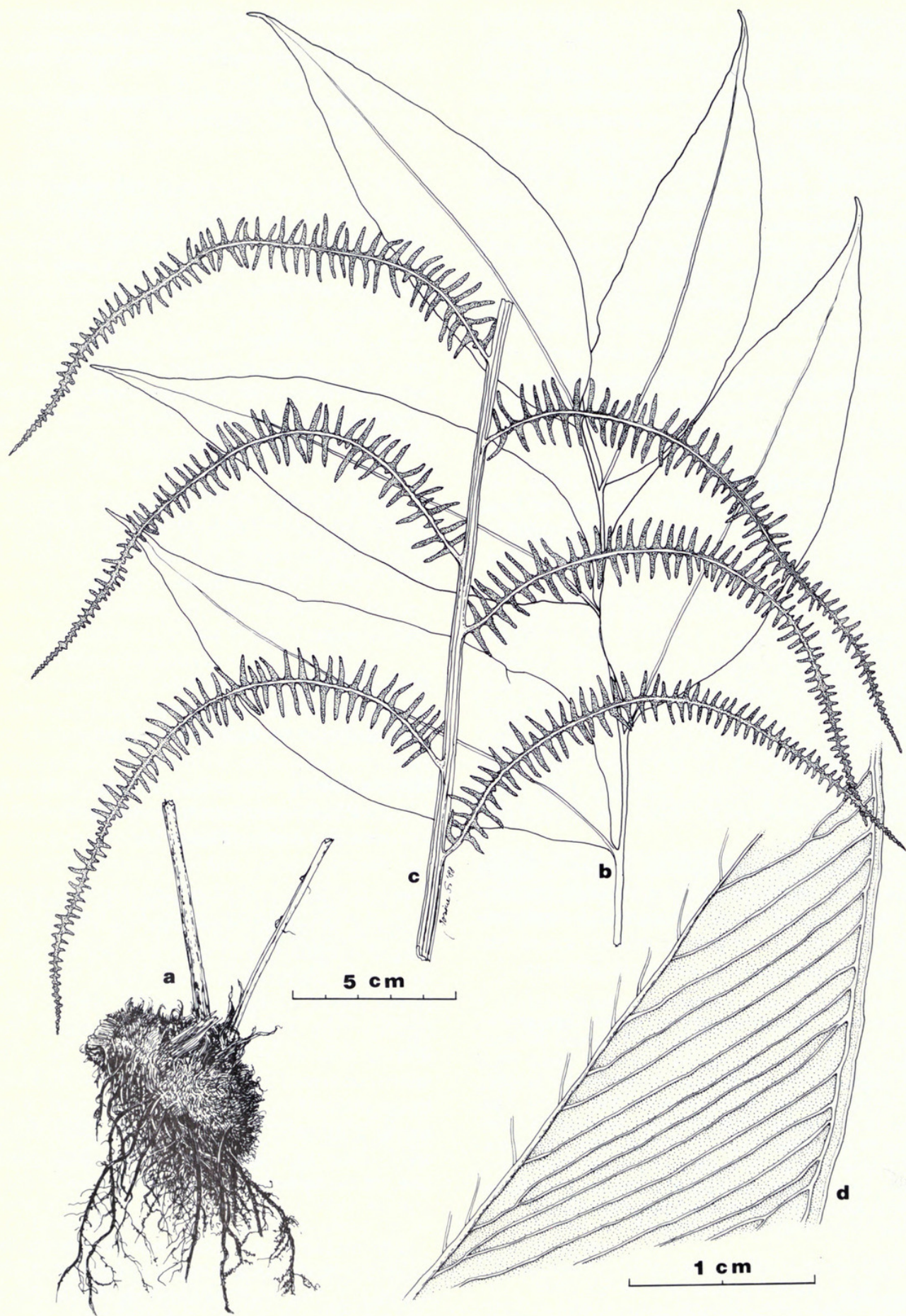


FIG. 14. *Olfersia cervina*: a, stem; b, apex of sterile leaf; c, portion of fertile leaf; d, portion of pinna, abaxial side. (a from Pabst 4771, Brazil, f; b, c from H. H. Smith 1075, Colombia, f; d from Madison et al, 4616, Ecuador, f.)

Reference

MORAN, R. C. 1986. The neotropical fern genus *Olfersia*. Amer. Fern. J., **76**: 161–178.

1. *Olfersia cervina* (L.) Kunze, Flora 7: 312. 1824. **Figure 14.**

Osmunda cervina L., Sp. pl. 2: 1065. 1753. LECTO-TYPE (designated by Proctor, Flora Lesser Antilles 223. 1977): Plumier, Traité foug. Amér. t. 154. 1705, illustrating a plant from Martinique. *Olfersia corcovadensis* Raddi, Opusc. Sci. 3: 283, t. 11b. 1819. TYPE: Brazil, Rio de Janeiro, Mt. Corcovado, Raddi (holotype, presumably FI). *Polybotrya cervina* (L.) Kaulf., Enum. fil. 55. 1824.

Stem scales to 2.5 cm long and 0.1 cm broad, linear, golden-brown, entire. **Sterile leaves** 0.5–1.2 m long and 0.3–0.5 m broad, subcoriaceous, glabrous. **Petiole** shorter than the lamina, scaly at base. **Pinnae** 15–30 cm long and 3–8 cm broad, ovate-lanceolate to lanceolate, 4–12 pairs, short-stalked, entire, the basiscopic side excavate. **Rachis and costae** not or only faintly grooved, glabrous. **Fertile leaves** produced freely on terrestrial as well as scandent stems, more erect than the sterile leaves and taller due to the longer petiole, soon withering after the spores are shed. **Petiole** 40–85 cm long. **Pinnae** 7–20 cm long, subdistant. **Pinnules** 0.5–1 cm long and 0.1–0.3 cm broad, pectinately arranged, broadly adnate and joined by a narrow wing of tissue.

Shaded forests, ravines, swamps, mostly terrestrial or on dead logs, only occasionally climbing, 0–2000 m, Amazonas, Huánuco, Cuzco, Madre de Dios, Puno.

Entirely neotropical, West Indies; southern Mexico south to Bolivia and southeastern Brazil.

Amazonas: Prov. Bagua, 43 km by road NE of Chiriac, *Barbour 4514* (MO). **Huánuco:** Ridge E of Tingo María, *Allard 22301* (GH, US). **Cuzco:** Prov. La Convención, *Dudley 10324* (GH). **Madre de Dios:** Pantiacolla, serranía across Río Alto Madre de Dios from Shintuya, *Gentry et al. 27366* (MO). **Puno:** Prov. Carabaya, *Vargas 18936* (GH).

XV. Polybotrya

Contributed by Robbin C. Moran

Polybotrya Willd., Sp. pl., ed. 4, 5: 99. 1810. TYPE: *Polybotrya osmundacea* Willd. **Figure 15.**

Soromanes Fée, Mém. foug. 2: 16. 1845. TYPE: *Soromanes serratifolium* Fée = *Polybotrya serratifolia* (Fée) Klotzsch.

Plants hemiepiphytic or (in 2 species) terrestrial. **Stem** 1–3 cm thick, densely scaly, long-creeping in the hemiepiphytic species, short-creeping in the terrestrial ones, in cross-section with 4–10 circularly arranged meristemes, each surrounded by a dark sclerenchymatous sheath. **Sterile and fertile leaves** strongly dimorphic. **Sterile lamina** 1–4-pinnate, the apex pinnatifid or (in *P. polybotryoides*) subconform. **Veins** free or (in 4 of the 1-pinnate species) anastomosing. **Indusia** absent. **Sporangial capsules** glabrous or (in *P. pubens*) setose. **Spores** monolete, echinate.

Polybotrya contains 35 species and is entirely neotropical, occurring from Mexico to southeastern Brazil and the West Indies. Its center of diversity is in the Andes, where 23 species occur, 12 of them in Peru, with four more expected there.

The genus is divided into three subgenera, all of them in Peru. Subgenus *Sorbifolia* Moran (1987a), type, *P. sorbifolia* Kuhn, is represented in Peru by species 1. *P. fractiserialis* and 2. *P. crassirhizoma*. Subgenus *Soromanes* (Fée) Moran (1987a), type, *P. serratifolia* (Fée) Klotzsch, is represented in Peru by 3. *P. polybotryoides*, 4. *P. suberecta*, and 5. *P. andina*. The other species, 6–16, belong to subgenus *Polybotrya*.

The genus is readily identified by its strong sterile-fertile leaf dimorphism, unique stem cross-section, and (in most species) hemiepiphytic habit.

References

- MORAN, R. C. 1987a. Monograph of the Neotropical fern genus *Polybotrya* (Dryopteridaceae). Bull. Illinois Nat. Hist. Surv., **34**: 1–138.
MORAN, R. C. 1987b. Sterile-fertile leaf dimorphism and evolution of soral types in *Polybotrya* (Dryopteridaceae). Syst. Bot., **12**: 617–628.



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