

A Newly Recognized *Gleichenia* Hybrid from Cuba

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While preparing a revision of the *Gleichenia* family for the Cuban fern flora, I found a species that I think is a hybrid, for all specimens of it that I have examined appear to be sterile, with few sporangia and abortive spores. This species was first described by Maxon as *Dicranopteris leonis*. In the arrangement of the Gleicheniaceae made by Holttum (1957), it belongs in *Gleichenia* subg. *Mertensia* (Willd.) Holttum (see also Holttum, 1973). I postulate that the parents of this hybrid are *Gleichenia bifida* and *G. palmata*. The nomenclature and distribution of these species are as follows:

***Gleichenia bifida* (Willd.) Spreng. Syst. Veg. ed. 16, 4: 27. 1827.**

Mertensia bifida Willd. Kongl. Vetensk. Acad. Nya Handl. 11(25): 168, t. 5, f. B. 1804. TYPE: Caracas, Venezuela, Bredemeyer (B!).

DISTRIBUTION: Cuba, Jamaica, Hispaniola, Puerto Rico, St. Kitts, Montserrat, Guadeloupe, Trinidad, Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Colombia, Venezuela, Brazil, and Bolivia.

SELECTED SPECIMENS CITED:

CUBA: Oriente: Prope villam Monte Verde dictam, Wright 921, p. p. (B, BM, P, US); Pinar de Micara, in pineland thickets, ca. 750 m, Ekman 15895 (B, BM); La Prenda, ca. 800 m, Eggers 5210 (B, P, US); Loma del Gato, Clemente 654 (P); Sierra Maestra, Pico Suecia, ca. 1700 m, Samek & Duek 1517 (IBH¹). **Las Villas:** Buenos Aires, ca. 750–840 m, Jack 6512 (IBS¹); Trinidad Mountains, Santa Clara, Aguacate, ca. 750–850 m, Britton & Wilson 5405 (US). **Pinar del Rio:** Environs of Sumidero, Shafer & León 13622 (P); Sierra de los Organos, San Diego de Tapias, in a small savanna, Ekman 10645 (US).

***Gleichenia* × *leonis* (Maxon) C. Chr. Ind. Fil. Suppl. 3: 106. 1934, pro. sp.**

Figs. 1, 2.

Dicranopteris leonis Maxon, J. Washington Acad. Sci. 12: 439. 1922. TYPE: Pico Turquino region, Sierra Maestra, Pcia. Oriente, Cuba, León 11092 (US!)

DISTRIBUTION: Provincia de Oriente, Cuba.

SPECIMENS CITED:

CUBA: Oriente: Sierra Maestra, on the divide between Punta de Palma Mocha and the pass between the Río Yara and the Río La Plata, ca. 1200 m, Ekman 5585 (B, S, US); In the Maestrica, near the Batey "Alto de la Valenzuela," ca. 1300 m, López Figueiras 2025 (UO¹); 16° W from Pico Turquino, ca. 1920 m, basalt-like soil, Samek & Duek 933 (IBH); Behind Pico Cuba, ca. 1840 m, Samek & Duek 794 (IBH); 25° E from Pico Turquino, ca. 1970 m, Samek & Duek 1186 (IBH); At the summit of Pico Cuba, ca. 1994 m, in dark brown, basaltic soil, Samek & Duek 1292 (IBH); 20° SW from Pico Cuba, ca. 1820–1870 m, Samek & Duek 962 (IBH).

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¹The herbarium IBH was created in 1965 at the Institute of Biology, Dept. of Forest Ecology, Academy of Sciences of Cuba, La Habana, by Dr. V. Samek of the Academy of Sciences of Czechoslovakia, when I collaborated with him in 1964–1967. The following acronyms also are not in the fifth edition of "Index Herbariorum": IBS Botanical Garden at Soledad, Cienfuegos, administered by the Institute of Botany, Academy of Sciences of Cuba (formerly Atkins Institution of the Arnold Arboretum); and UO Herbarium of the University of Oriente, Santiago de Cuba (now in HAJB). See Duek (1971).

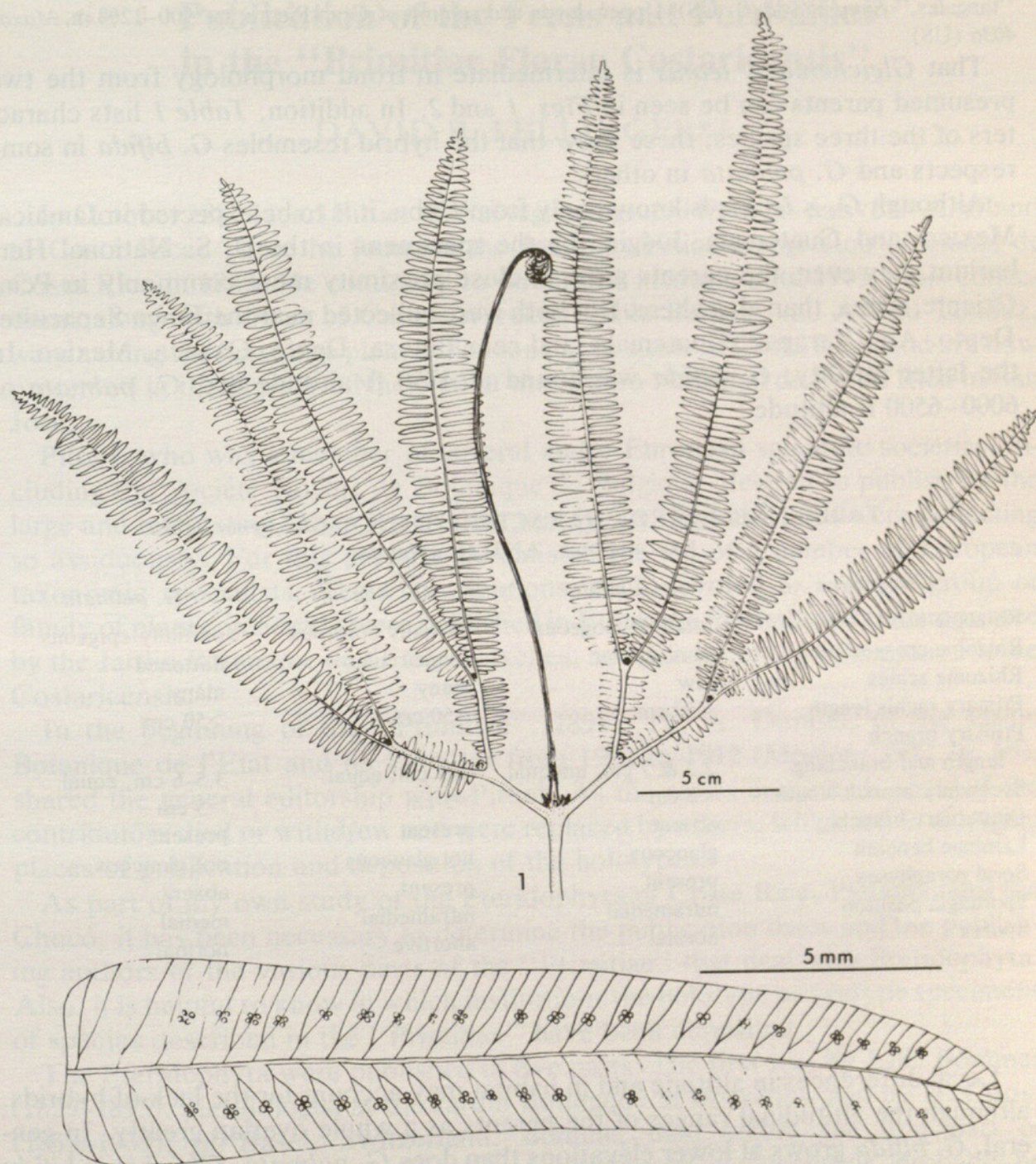


FIG. 1. Holotype of *Gleichenia x leonis*. FIG. 2. A segment from the holotype.

***Gleichenia palmata* (Underw.) C. Chr. Ind. Fil. Suppl. 1: 113. 1913.**

Mertensia palmata Schaffn. ex Fée, Mém. Foug. 9: 32. 1857, *nom. nud.*

Gleichenia palmata Moore, Ind. Fil. 380. 1862, *nom. nud.*

Dicranopteris palmata Underw. Bull. Torrey Bot. Club 34: 259. 1907. TYPE: Orizaba, Edo. Veracruz, Mexico, Pringle 6129 (US!)

Sticherus palmata (Underw.) Copel. Gen. Fil. 28. 1947.

DISTRIBUTION: Cuba, Jamaica, Mexico, and Guatemala.

SELECTED SPECIMENS CITED:

CUBA: Oriente: Gran Piedra, ca. 1500 m, Shafer 9054 (P, S); Loma del Gato, ca. 1100 m, in

“fangales,” *Ekman* 6988 (S, US); Upper slopes and summit of Gran Piedra, ca. 900–1200 m, *Maxon* 4036 (US).

That *Gleichenia* × *leonis* is intermediate in frond morphology from the two presumed parents can be seen in *Figs. 1* and *2*. In addition, *Table 1* lists characters of the three species; these show that the hybrid resembles *G. bifida* in some respects and *G. palmata* in others.

Although *G. × leonis* is known only from Cuba, it is to be expected in Jamaica, Mexico, and Guatemala. Judging by the specimens in the U. S. National Herbarium, however, the parents grow in close proximity more commonly in Pcia. Oriente, Cuba, than elsewhere. But both were collected near the Finca Sepacuite, Depto. Alta Verapaz, Guatemala, and near Betaza, Depto. Oaxaca, Mexico. In the latter locality, *G. bifida* was found at 4750 ft altitude and *G. palmata* at 6000–6500 ft altitude.

TABLE 1. SELECTED CHARACTERISTICS OF *Gleichenia bifida*, *G. × leonis*, AND *G. palmata*.

Character	<i>G. bifida</i>	<i>G. × leonis</i>	<i>G. palmata</i>
Rhizome habit	totally hypogeous	partially epigeous	partially epigeous
Rhizome cross-section	semicircular	semicircular	flattened
Rhizome scales	few	many	many
Primary rachis length	<50 cm	<50 cm	>50 cm
Primary branch length and branching	2.5 & 7 cm, unequal	4–5 cm, equal	3.5–6 cm, equal
Secondary branch length	<5 cm	>5 cm	>5 cm
Quaternary branches	absent	present	present
Laminae beneath	glaucous	not glaucous	not glaucous
Soral paraphyses	present	present	absent
Sporangia position	inframedial	inframedial	medial
Spores	normal	abortive	normal

Local differences in altitude and in habitat may account for the lack of hybrids, although the altitudinal ranges of the parents as a whole overlap greatly. In general, *G. bifida* grows at lower elevations than does *G. palmata*. *Gleichenia bifida* is more a pioneer species, often occurring on raw clay river and road banks, whereas *G. palmata* is commonly recorded from the edges of forests and along trails and ridge tops.

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