

**THE FLORA OF MACAYA BIOSPHERE RESERVE:
ADDITIONAL TAXA, TAXONOMIC AND
NOMENCLATURAL CHANGES, II.**

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Judd, Walter S. and Dana G. Griffin (Department of Botany, 220 Bartram Hall, University of Florida, Gainesville, Florida, 32611, U.S.A.) & James D. Skean, Jr. (Department of Biology, Albion College, Albion, Michigan, 49224, U.S.A.). The Flora of Macaya Biosphere Reserve: additional taxa, taxonomic and nomenclatural changes, II. *Moscosoa*: 114-120. 1998. Twenty-nine taxa new to the flora of the Macaya Biosphere Reserve (including Parc National Pic Macaya) are reported, along with several nomenclatural or taxonomic changes.

Se adicionan veintinueve especies a la flora de la Reserva de Biósfera, Pic Macaya, Haití y se hacen varios cambios taxonómicos.

Palabras clave: Pic Macaya, Haití, Flora, Musgos, Líquenes, Cambios, Taxonomía.

Since the publication of the checklist of the flora of Parc National Pic Macaya (Judd, 1987; Judd et al., 1990), sixteen additional vascular plants, ten additional mosses and liverworts, and three additional macrolichens have been discovered in the region, based mainly upon recent field work by the authors during August of 1989 and June of 1993. Also noted are a few taxonomic or nomenclatural changes affecting the published list of park plants (Judd, 1987; Judd et al., 1990).

Key words: Pic. Macaya, Haití, Flora, Mosses, Liverworts, Taxonomy, Change.

The Macaya National Park, in the Massif de la Hotte near Ville Formon (sometimes spelled Formond), ca. 36 km northwest of Les Cayes, Haiti, was established in June, 1983, and encompasses ca. 2000 hectares (Judd, 1987; Woods et al., 1992). The flora, vegetation, land-use patterns, and history of biological exploration of the region are outlined in Judd (1987), Judd et al. (1990), Woods & Ottenwalter (1992), Woods et al. (1992), and Sergile et al. (1992). The park incorporates much of Haiti's remaining undegraded forest, provides refuge for numerous endemic species, and is the source of the water utilized for irrigation in the agricultural region of the Plain of Les Cayes (Woods et al., 1992). In 1987 the government of Haiti and the University of Florida began the development of a biosphere reserve that included the national park and its buffer zone, totaling ca. 16,000 hectares (Sergile et al., 1992). Thus, it is hoped that the beautiful and biologically diverse forests of the high elevations of the Morne Formon—Pic Macaya region will be preserved.

The following new species have been documented as occurring in the Parc National Pic Macaya. The taxa are listed in alphabetical order by family. Each entry follows a standardized format (as in Judd et al., 1990). The first set of voucher specimens is deposited at the herbarium of the University of Florida, Gainesville (FLAS); a second set of vascular plant specimens will be sent to Haiti; a few additional duplicates have been distributed. Taxa endemic to Hispaniola or the Massif de la Hotte are indicated. All vascular plant species were identified by W.S.J. and/or J.D.S. unless otherwise indicated; all mosses and liverworts were identified by D.G.G. Richard Harris, of the New York Botanical Garden, kindly identified the macrolichens.

Liverworts

Frullaniaceae

Frullania atrata (Sw.) Nees; cloud forest/moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6977.

Ptilidiaceae

Trichocolea elliottii Steph.; cloud forest/moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6981a.

Mosses

Bryaceae

Brachymenium speciosum (Hook.f. & Wils.) Steere; cloud forest/moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6994.

Dicranaceae

Leucobryum polakowskyi (C.M.) Card.; disturbed rak bwa; 1150-1190 m; Bwa Duran [Bois Durand], NW of Ville Formon. Judd 6915.

Pilopogon guadalupensis (Brid.) Frahm; cloud forest/ moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6985.

Hookeriaceae

Hookeriopsis falcata (Hook.) Jaeg.; cloud forest/moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6981b.

Meteoriaceae

Papillaria deppei (Hornsch.) Jaeg.; cloud forest/moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6880.

Pilotrichella cuspidans Ren. & Card.; cloud forest/ moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 6987a.

Sematophyllaceae

Aptychella prolifera (Broth.) Herz.; cloud forest/ moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 7000.

Sematophyllum swartzii (Schwaegr.) Welch & Crum; cloud forest/ moist pine forest; 1850-2150 m; southern slope and ridge of Morne Formon. Judd 7003, 7010.

Vascular Plants**Apocynaceae**

Urechites lutea (L.) Britt.; liana; rak bwa (occasional), 1100-1200 m; ridge directly N of (above) Ville Formon. Skean & McMullen 2514, 2547.

Aquifoliaceae

Ilex cf. fuertesiana (Loes.) Loes.; small tree; rak bwa (uncommon), 1130-1150 m; Bwa Formon—Bwa Duran, karstic hills S of Morne Formon. Judd 6932.

Areaceae

Bactris plumeriana Mart.; moderate-sized, clump-forming palm (rare); disturbed karstic hills, 2-3 km SW of Ville Formon. Judd & Skean 7009. Det. V. Salzman (see also Salzman & Judd, 1995). Endemic to Hispaniola.

Calyptrotrichia plumeriana (Mart.) Lourteig; small palm; rak bwa (rare), ca. 1100 m; Bwa Duran, karstic hills S of Morne Formon. Photo [taken near "Experiment Station House"]; also collected nearby, Judd & Skean 6869, but outside park. Det. Scott Zona (see Zona, 1995).

Asteraceae

Leontodon taraxacoides (Vill.) Merat; herb; moist pine forest/moist cloud forest (locally common along trails), 2100-2170 m; Pic Le Ciel, Morne Formon. Skean & McMullen 2568.

Campanulaceae

Lobelia cliffortiana L.; herb; disturbed open area (rare), 1300-1400 m; S slope of Morne Formon. Judd 6950.

Melastomataceae

Mecranium sp. nov.; shrub; transitional vegetation between rak bwa and moist cloud forest/moist pine forest (uncommon), 1450-1700 m; N slope of Morne Formon, along trail from ridge down into Ravine du Sud. Judd 6962. Species listed as *Miconia* sp. nov. in Judd (1987) on the basis of a single sterile specimen, i.e., Skean 1347. Endemic to Massif de la Hotte.

Miconia pyramidalis (Desr.) DC.; shrub; rak bwa (occasional), ca. 1100 m, near Nan Selle at edge of Ravine Casco. Skean & McMullen 2561.

Menispermaceae

Hyperbaena laurifolia (Poir.) Urb.; shrub; rak bwa (occasional), 950-1200 m; Bwa Formon, directly N of (above) Ville Formon. Judd 3465b; Skean & McMullen 2549.

Piperaceae

Piper sp.; shrub; rak bwa (occasional), ca. 1100 m, near Nan Selle at edge of Ravine Casco. Skean & McMullen 2558.

Rhamnaceae

Colubrina verrucosa (Urb.) M. C. Johnst.; scandent shrub; rak bwa (occasional), 950-1040 m; Bwa Formon, karstic hills to the S of Morne Formon. Judd 3515.

Rubiaceae

Chiococca alba (L.) Hitch.; liana; rak bwa (occasional), ca. 1000 m; Bwa Formon—Bwa Duran, karstic hills S of Morne Formon. Skean & McMullen 2474.

Psychotria cf. *coelocalyx* Urb.; shrub; rak bwa (uncommon), 1100-1150 m; Bwa Formon—Bwa Duran, karstic hills to the S of Morne Formon. Judd 6922; Skean & McMullen 2473.

Sapindaceae

Allophylus haitiensis Radlk. & Ekman; shrub; rak bwa (common), 1130-1150 m; Bwa Formon—Bwa Duran, karstic hills to the S of Morne Formon. Judd 6928. Endemic to Massif de la Hotte and Massif de la Selle.

Simaroubaceae

Picramnia dictyoneura (Urb.) Urb. & Ekman; shrub to small tree; rak bwa (uncommon), 1130-1150 m; Bwa Formon—Bwa Duran, karstic hills to the S of Morne Formon. Judd 6920. Endemic to Hispaniola.

Solanaceae

Solanum virgatum Lam.; shrub; rak bwa (occasional), ca. 1000 m; Bwa Formon. Skean & McMullen 2480.

In addition, specimens were prepared of the following weedy taxa that were listed but not vouchered in Judd (1987): *Centella asiatica* (L.) Urb. (Judd 6925a, 6952), *Plantago major* L. (Judd 6949).

Other vascular plant species of the Macaya Biosphere reserve listed by Judd (1987) or Judd et al. (1990) and requiring taxonomic or nomenclatural comment are presented below.

Allophylus crassinervis Radlk.; this species was listed as *A. rigidus* Sw. in Judd (1987); species limits in this group are quite problematic and the two are probably conspecific.

Calycogonium hispidum Cogn.; species mistakenly listed as *C. cf. calycopteris* (L. C. Rich.) Urb. in Judd (1987).

Haenianthus salicifolius Griseb. var. *obovatus* (Krug & Urb.) Knobl.; this species was listed as *H. oblongatus* Urb. in Judd (1987), a species which was considered to be synonymous with *H. salicifolius* var. *obovatus* by Zona (1991).

Ocotea foeniculacea Mez; populations of this species at low elevations near Ville Formon, i.e., 900-1200 m in the karstic hills S of Morne Formon are distinctive in that their leaves lack (or have only a few slightly) impressed secondary veins (see Judd 6900; Skean & McMullen 2528, whereas individuals collected at 1800-2100 m along the ridge of Morne Formon have conspicuously impressed secondary veins, as is characteristic of this species (see Judd 3891, 3896). These plants were initially considered to be a possibly undescribed taxon, and were listed as *Ocotea* sp. 2 in Judd et al. (1990); we now consider these lower elevation populations within the circumscription of *O. foeniculacea*.

Peperomia reflexa (L.f.) A. Dietr.; species listed as *P. tetraphylla* (S. Forst.) Hooker & Arnott. in Judd (1987).

Salvia paryskii Skean & Judd; see Skean & Judd (1988); this species was listed as *Salvia* sp. nov. and *Salvia* sp. 2, aff. *S. tuerckheimii* Urb. in Judd (1987). This species is quite variable, with corollas ranging from reddish-orange to yellow, and occurs from ca. 1000-1900 m in the Morne Formon region; see discussion in Skean & Judd (1988, 1993).

Sideroxylon cubense (Griseb.) Pennington; species listed as *Dipholis cubensis* (Griseb.) Pierre in Judd (1987), but as outlined by Pennington (1991) the traditional distinctions between *Sideroxylon*, *Dipholis*, and *Bumelia* are inconsistent when the variation pattern is considered on a world-wide basis.

Tetrapteryx haitiensis Urb. & Ndz.; species listed as *T. citrifolia* (Sw.) Pers. in Judd (1987); the species is now known from both flowering and fruiting specimens (Skean 1555, Skean & McMullen 2530) and is endemic to the Massif de la Hotte.

Macrolichens [Additions to list given in appendix of Judd, 1987.]

Cladonia subradiata (Vainio) Sandst.; Judd 6936.

Everniastrum vexans (Zahlbr.) Sipman; Judd 6976.

Parmotrema mellissii (Dodge) Hale; Judd 6933.

The species reported herein raise the total of vascular plants reported in the Parc National Pic Macaya and closely adjacent portions of the Macaya Biosphere Reserve (see figure 1, Judd, 1987) to 678 and the bryophyte total to 173, and strengthen the conclusion (Judd, 1987; Judd et al., 1990; Woods et al., 1992; Woods & Ottenwalder, 1992) that Parc National Pic Macaya supports an extremely diverse and highly endemic flora.

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