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NEW OR NOTEWORTHY SPERMATOPHYTES FROM MEXICO, CENTRAL AMERICA AND THE WEST INDIES

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CHICAGO, U. S. A.
December, 1907.

New or Noteworthy Spermatophytes from Mexico, Central America, and the West Indies.

By J. M. GREENMAN.

The diagnoses and notes here presented are the results of critical study in the determination of several recent collections of plants from Mexico, Central America and the West Indies, particularly those of Mr. Edward A. Goldman, Professor Cassiano Conzatti, Dr. George F. Gaumer, Professors C. R. Barnes, C. J. Chamberlain and W. J. G. Land, Dr. Charles F. Millspaugh, Dr. J. N. Rose and assistants, Sr. Dr. Fernando Altamirano, Professor W. A. Kellerman, the late Dr. G. M. Emrick, Mr. H. A. Van Hermann, and several others including the writer. The material of certain groups, especially in the genus Senecio collected by Mr. C. G. Pringle, has been generously submitted to me for identification by Professor B. L. Robinson. The new species here proposed in this genus are preliminary to a forthcoming monograph of the North American Senecios.

CYPERUS OCHRACEUS Vahl, Enum. ii. 325 (1805).

Specimens agreeing well with the original description and with West Indian representatives of this species were collected at Laguna, near the City of Vera Cruz, Mexico, 22 January, 1906, *J. M. Greenman*, no. 30 (hb. Field Mus.). This species seems not to have been noted by Hemsley in the Biologia Centrali-Americana.

Hechtia macrophylla Greenman, sp. nov.

Leaves about 1 m. in length, 3.5 cm. broad just above the base, gradually tapering to the apex, glabrous above, lepidote-cinereous beneath; margins spinose; spines 3 cm. or less apart, upwardly curved, 6 mm. or less in length, usually bearing a tuft of persistent white floccose tomentum in the axils: inflorescence paniculate, about 4 dm. long, 1.5 to 2 dm. broad, lepidote-tomentulose; ultimate branches 2 to 12 cm. long, spicate, more or less loosely but evenly flowered throughout their entire length; floral bracts ovate, acute, 4 mm. long: staminate flowers sessile, about 5 mm. long in anthesis, spreading or reflexed; sepals

broadly ovate, 2.5 mm. long, acute; petals elliptic or elliptic-obovate, about 4 mm. long, strongly concave, free or slightly united at the base; ovary rudimentary: pistillate flowers and fruit unknown.— MEXICO. State of Vera Cruz: Carrizal, 12 to 14 May, 1901, *E. A. Goldman*, no. 712 (hb. U. S. Nat. Mus.; fragment and photograph in hb. Field Mus.).

The species here described is apparently nearest related to *Hechtia Schottii* Baker, and *H. texensis* Watson; from the former it differs in having longer leaves, more profusely branched inflorescence, and somewhat smaller floral bracts; from the latter it is readily separated by the longer leaves, the presence of conspicuous tufts of tomentum in the upper axils of the leaf-spines, and by the smaller and more scattered flowers.

HECHTIA SCHOTTII Baker, in Hemsl. Biol. Cent.-Am. Bot. iii. 318 (1884) & Handb. Bromel. 139 (1889); Mez in DC., Monogr. Phan. ix. 548 (1896).

In the herbarium of the Field Museum there is a specimen, collected by Schott in Yucatan, which is unmistakably referable to *Hechtia*. The label accompanying the plant bears no number, and likewise no time of collection, but it bears the data "Maxeana." The specimen consists of leaves, an inflorescence of staminate flowers, and a portion of a panicle bearing mature fruit. The characters exhibited by all these parts agree well with Baker's description, hence the plant is confidently referred to the above species; and, moreover, it probably represents a part of the same collection on which the species was founded. With this species are also identified specimens collected at Xcholac, Yucatan, *Dr. Geo. F. Gaumer*, no. 578 (hb. Field Mus.).

TILLANDSIA BALBISIANA Schult. f. in Roem. & Schult. Syst. vii. 1212 (1830); Mez in DC. Monogr. Phan. ix. 709 (1896). *T. setacea*, Millsp. Field Col. Mus. Bot. Ser. i. 356 (1898), not Sw.

To this species are referred the following.— MEXICO. State of Yucatan: Merida, 11 July, 1865, *Dr. A. Schott*, nos. 842, 842a in part (hb. Field Mus.); Izamal, 21 February, 1906, *J. M. Greenman*, no. 403 (hb. Field Mus.).

TILLANDSIA BRACHYCAULOS Schlecht. Linnaea, xviii. 422 (1844); Morr. Belg. Hort. 1878, 185, t. 11; Baker, Handb. Bromel. 201 (1889); Mez in DC. Monogr. Phan. ix. 732 (1896); Millsp. Field Col. Mus. Bot. Ser. i. 356 (1898).

Fruiting specimens of this species were collected by the writer at Izamal, Yucatan, in February of 1906. These agree in habit and foliar characters with flowering specimens which were secured in the same locality by Dr. A. Schott and also by Dr. Geo. F. Gaumer. The species is widely distributed, occurring from Mexico to South America, and although well known from flowering specimens, the fruit seems not to have been hitherto described, hence the following characterization is here given:

Mature capsules large, 3.5 to 4 cm. long, subcylindrical or obtusely triangular, short-acuminate at the apex; valves dorsally pale-stramineous, glabrous, 1-nerved, recurved and somewhat spirally twisted; exocarp readily separating from the endocarp; seeds including the coma about 3 cm. long.— MEXICO. State of Yucatan: Izamal, 21 February, 1906, *J. M. Greenman*, no. 404 (hb. Field Mus.).

TRADESCANTIA FLORIDANA Watson, Proc. Am. Acad. xvii. 381 (1882). *Tradescantella floridana* Small, Fl. Southeastern U. S. 238 (1903).

Dr. Sereno Watson very clearly defined the above species and pointed out the characters by which it is readily distinguished from *T. gracilis* HBK. to which it was referred by C. B. Clarke in DC. Monogr. Phaner. iii. 297 (1881). The examination of a considerable number of specimens from Florida and elsewhere shows that Dr. Watson's species retains the distinctive characters originally ascribed to it without any evidence, at least as far as yet observed by the writer, of intergradation with the South American species. It seems best therefore to regard *T. floridana* Watson as well worthy of specific rank. The following specimens are identical in every detail with Dr. Watson's species.— MEXICO. State of Yucatan: Izamal, *Dr. Geo. F. Gaumer*, no. 573 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, no. 1855 (hb. Field Mus.). This species has not been recorded hitherto from Yucatan.

SMILAX MOLLIS Humb. & Bonpl. in Willd. Sp. Pl. iv. 785 (1805); A. DC. in DC. Monogr. Phaner. i. 67 (1878); Hemsl. Biol. Cent.-Am. Bot. iii. 365 (1884).

Mature fruiting specimens of this species were collected on old sand dunes along the shore, north of the City of Vera Cruz, 24 January, 1906, *J. M. Greenman*, no. 116 (hb. Field Mus., and hb. Kew). The mature fruit in the fresh state is bright red.

I am indebted to Lieut.-Col. David Prain, Director of the Royal Botanic Gardens, Kew, for the identification of this plant.

POUZOLZIA PRINGLEI Greenm. Proc. Am. Acad. xxxiii. 476 (1898).

This species, hitherto known only by Mr. Pringle's no. 6736 from Tomellin Canyon, has been recollected at El Parion, District of Etla, Oaxaca, Mexico, altitude 1,400 m., 2 September, 1906, *C. Conzatti* no. 1551 (hb. Field Mus.). While Señor Conzatti's specimens present no additional characters, yet the collection records a second station towards mapping the distribution of the species.

PSITTACANTHUS AURICULATUS, Oliver, acc. to Eichl., in Mart. Fl. Bras. v. II, 25 (1866). *Loranthus auriculatus* D. Oliver in Kjoeb. Vidensk. Meddel. 1864, p. 174.

To this well marked species are referred specimens collected at Alturas de Ejutla, Oaxaca, Mexico, altitude 1,300 m., 13 December, 1907, *C. Conzatti*, no. 1641 (hb. Field Mus.).

PHORADENDRON MUCRONATUM Krug & Urban in Engl. Bot. Jahrb. xxiv. 34 (1897). *P. flavescens* Millsp. Field Col. Mus. Bot. Ser. i. 294 (1896) in part, not Nutt.

MEXICO. State of Yucatan: near Izamal, *Dr. Geo. F. Gaumer*, no. 561 in part (hb. Field Mus.). Dr. Gaumer's specimens correspond in every essential detail with the descriptions of this species, and with material in the herbarium of the Field Museum from the West Indies and from South America. This species seems not to have been reported hitherto from Mexico or Central America.

PHORADENDRON QUADRANGULARE Krug & Urban in Engl. Bot. Jahrb. xxiv. 35 (1897) & Urban, Symb. Antil. iv. 207 (1905).

Fruiting specimens of this species were collected near the coast north of the City of Vera Cruz, Mexico, 24 January, 1906, *J. M. Greenman*, no. 120 (hb. Field Mus.).

Phoradendron vernicosum Greenman, sp. nov.

Glabrous throughout: younger parts more or less vernicose: stems and branches terete; ultimate branchlets compressed at the nodes: leaves lanceolate-oblong to ovate-elliptic, often slightly oblique or subfalcate, 2 to 7 cm. long, 1 to 2.7 cm. broad, obtuse or rounded at the apex, entire, narrowed below to a subpetiolate base, 3–5-nerved: spikes sessile or essentially so, 1 to 3 (rarely 5) in the leaf-axils, 1 to 2 cm. long; segments 2 to 5 (usually 4), 5 mm. or less in length, 6–12-flowered in the staminate spike, 2-flowered in the pistillate spike; perianth 3-merous: berry ovate-oblong, about 5 mm. long, not contracted below the calyx-limb, more or less glaucous; endocarp distinct, ovate-oblong, 4 mm. long, 2 mm. wide, abruptly acuminate.— *P. flavescens*, Millsp. Field Col. Mus. Bot. Ser. 1. 294 (1896) in part, not Nutt.— MEXICO. State of Yucatan: Izamal, 22 February, 1906, *J. M. Greenman*, no. 440 (hb. Field Mus.), type; Silam, June, 1895, *Dr. Geo. F. Gaumer*, no. 876 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, nos. 1850, 2011 (hb. Field Mus.).

The vernicose character of the young stem and leaves, the short axillary inflorescences, the two-flowered segments of the fertile spike and the distinctly acuminate endocarp well characterize this species. The nearest affinity of *P. vernicosum* is with *P. Wattii* Krug & Urban, from which it differs in having relatively shorter and broader leaves, the fruit not constricted below the limb of the calyx, and a smaller and distinctly acuminate instead of acute endocarp.

MILLSPAUGHIA ANTIGONOIDES Rob. in Engl. Bot. Jahrb. xxxvi. Beibl. 80: 14 (1905).

In addition to the specimens cited in the original publication

of this very interesting genus the following collections in the herbarium of the Field Museum represent further the above species.— MEXICO. State of Yucatan: Merida, April, 1865, *Dr. A. Schott*, no. 217; Colonia San Cosme, 20 February, 1906, *J. M. Greenman*, no. 348; Izamal, collection of 1888, *Dr. Geo. F. Gaumer*, without number; Izamal, *Dr. Geo. F. Gaumer*, nos. 3001, 3002, 3004; Puerto Morelos, 12 to 31 March, 1901, *E. A. Goldman*, no. 626 (hb. U. S. Nat. Mus.; fragment in hb. Field Mus.).

Guatteria Gaumeri Greenman, sp. nov. Tree, 10 to 15 m. high: stem and branches covered with a gray bark; ultimate branchlets glabrous or sparingly strigulose-puberulent: leaves alternate, petiolate, lanceolate to elliptic-lanceolate, 5 to 15 cm. long, 2 to 2.5 cm. broad, usually short-acuminate and obtuse, rarely retuse at the apex, entire, glabrous on both surfaces or in the very early stages slightly pubescent with a few scattered appressed hairs, soon glabrate and rather strongly reticulate-nerved; petioles stoutish, 3 to 10 mm. long, canaliculate, often turning blackish in the dried state: inflorescence terminal or lateral; peduncles thickish, 1 to 3 cm. in length, jointed, sparingly pubescent with appressed tawny hairs, bracteate at the base and usually bearing a single ovate acute or acutish ciliate ferrugineous-pubescent bract below the middle: sepals subrotund, 3 to 5 mm. high, usually broader than long, ciliate and sparingly pubescent to glabrous: petals large, oblong-ovate to somewhat obovate, 2 to 4.3 cm. long, 1.2 to 3 cm. broad, thick and leathery: berries numerous, elliptic-obovoid, about 1 cm. long, 7 to 8 mm. in diameter, minutely verrucose, glabrous: stipes slender, 1.5 cm. or less in length; torus somewhat depressed-globose.— MEXICO. State of Yucatan: vicinity of Izamal, specimens communicated February, May, June, and July, 1906, *Dr. Geo. F. Gaumer* (hb. Field Mus., catalogue nos. 189976–189978, 189160, 189161). In general appearance the species here proposed resembles *G. dolichopoda* Donn. Sm., but it differs in the less acuminate and blunt leaves, character of the pubescence, subrotund sepals, larger petals, shorter peduncles and stipes.

G. Gaumeri is rich throughout all its parts in oil-glands, and when crushed it produces a pleasant aromatic odor. Dr. Gaumer in whose honor the species is named states that the plant is known about Izamal under the name of "*Elemuy*," and that from it is obtained one of the most valuable medicines used in Yucatan.

TRISTICHA HYPNOIDES Spreng. Syst. Veg. iv. pt. 2, 10 (1827); DC. Prodr. xvii. 44 (1873); Hemsl. Biol. Cent.-Am. Bot. iii. 39 (1882).

Specimens well representing this species were found growing on stones under water near Cordoba, State of Vera Cruz, Mexico, 25 January, 1906, *J. M. Greenman*, no. 124 (hb. Field Mus.). This interesting species, known from Cuba, from Guatemala to Brazil, from tropical and south Africa and Madagascar, seems not to have been recorded hitherto from Mexico. Specimens

collected at Cordoba by Dr. Asa Gray and referred by him to the above species, although no published record of them has been found by the writer, bear somewhat larger fruit than my number 124, but differ in no other apparent regard.

Caesalpinia yucatanensis Greenman, sp. nov.

Shrub or small tree: stem covered with a light gray bark, dotted with numerous lenticels, glabrous; cortex defoliating in thin scarious layers; ultimate branchlets puberulent; leaves alternate, bipinnate, petiolate, unarmed; petioles 2 to 6 cm. long; pinnae 2 to 3 pairs; leaflets 2 to 4 pairs, oblong-elliptic, 1.5 to 4 cm. long, 0.7 to 2.5 cm. broad, obtuse to rounded at both ends or slightly retuse at the apex, entire, glabrous on both surfaces or somewhat pubescent in the early stages and glabrate; midrib slightly sunken from the upper surface and, as well as the lateral nerves, somewhat prominent beneath; petiolules 1 to 1.5 mm. long: inflorescence usually in terminal panicles, 0.5 to 1.5 dm. in length, occasionally terminating the lateral branches in simple racemes, finely pubescent; pedicels 1 to 2 cm. long, jointed above the middle, pubescent: calyx about 1 cm. long, 5-parted; segments oblong-rotund, imbricated, densely soft-pubescent on the outer surface: petals oblong to oblong-obovate, about 1.5 cm. long, 8 to 10 mm. broad, narrowed at the base into a villous-pubescent claw, chocolate-brown or dark red in color and margined with pale yellow, covered externally in the lower half with sessile or short-stipitate glands; the uppermost petal producing a short fold on the inside near the base: stamens barely exserted; filaments pubescent with more or less matted hairs: ovary and lower part of the style densely pubescent: mature fruit sessile, oblong, slightly oblique, 6 to 12 cm. long, 2 to 2.5 cm. broad, short-pubescent and closely beset with stipitate tack-shaped glands; seeds suborbicular, flat, about 1 cm. in diameter, smooth.— *Caesalpinia exostemma* Millsp. Field Col. Mus. Bot. Ser. i. 21 (1895), not Moc. & Sesse ex DC.— MEXICO. State of Yucatan: vicinity of Izamal, collection of 1895, *Dr. Geo. F. Gaumer*, no. 371 (hb. Field Mus.), type; near Izamal, 13 January, 1895, *Dr. C. F. Millspaugh*, no. 75 (hb. Field Mus.); Izamal, 22 February, 1906, *J. M. Greenman*, no. 417 (hb. Field Mus.); San Anselmo, *Dr. Geo. F. Gaumer*, no. 1715 (hb. Field Mus.); near Merida, *Dr. A. Schott*, without number (hb. Field Mus.); on old hennequin plantations near Merida, February, 1903, *C. & E. Seler*, no. 3844 (hb. Field Mus.); Colonia San Cosme, 20 February, 1906, *J. M. Greenman*, no. 349 (hb. Field Mus.); Itzimna, 19 February, 1906, *J. M. Greenman*, no. 335 (hb. Field Mus.); near Progresso, 5 March, 1899, *Dr. C. F. Millspaugh*, no. 1660 (hb. Field Mus.); without definite locality, coll. of 1896, *Sr. Porfirio Valdez*, no. 7 in part (hb. Field Mus.). State of Campeche: without locality, *Dr. Henry Perrine* (hb. Gray, and hb. Torrey).

This species is related to *C. exostemma* Moc. & Sesse ex DC.