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NEW TREES AND SHRUBS FROM YUCATAN.

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The descriptions of the following new species of woody plants from Yucatan, made by the writer several years ago, are published here in order that the names may be available for use in the work on "Trees and Shrubs of Mexico," by Mr. Paul C. Standley of the U. S. National Herbarium, now in course of publication.

***Acacia dolichostachya* Blake, sp. nov.**

Shrub 5 meters high; stem unarmed, glabrous, the older branchlets weakly armed with tiny indurate stipules, the younger minutely appressed-puberulous; upper leaves (immature) bipinnate, 3 to 3.5 cm. long including petiole; stipules 0.7 to 1 mm. long, subulate, straight, at length indurated or deciduous; petiole 1.5 to 2.2 cm. long, sparsely puberulous, bearing below the middle a conspicuous oval or roundish gland 1 mm. long; rachis 1.3 to 1.5 cm. long, bearing an apical gland; pinnae 5 pairs, 2 to 2.5 cm. long, puberulous especially at the base of the leaflets; leaflets 24 to 29 pairs, linear-oblong, 3.5 mm. long, 0.5 mm. wide, or smaller, obtuse, truncate-rounded at base, inequilateral, ciliolate, otherwise glabrous; spikes cylindric, numerous, axillary, erect, 3 to 3.5 cm. long, about 6 mm. thick, the rachis strigillose; peduncle 3 mm. long; flowers rather loosely spicate, 3 mm. long (including the stamens); bracteoles curved, yellowish, 0.5 mm. long, persistent; calyx turbinate, broadly truncate at base, strigillose, 0.6 mm. long, 5-lobed for  $\frac{1}{3}$  its length, the lobes deltoid, obtusish; corolla (in dried specimen) pale yellowish, 1.5 mm. long, strigillose, 5-lobed nearly to the middle, the lobes ovate, acutish; stamens 30, with free filaments, surpassing the corolla, the anther cells elliptic; ovary short-stiped, glabrous, 11-ovulate; style curved.

Type in the herbarium of the Field Columbian Museum, No. 446,819, collected at Las Bocas, Silam, Yucatan, May, 1916, by G. F. Gaumer & Sons (No. 23,329).

This species belongs to the group *Nudiflorae* of the second subseries of the *Vulgares*, as treated by Benth. Its nearest ally is *A. coulteri* Benth., from which it differs in the shorter spikes, smaller flowers with about half



the number of stamens of *A. coulteri*, and particularly in the persistence of the bracteoles on the rachis of the spikes after the fall of the flowers.

***Acacia gaumeri* Blake, sp. nov.**

Tree 8 meters high; stem glabrous, below the stipules armed with firm, retrorse, broad-based, blackish prickles about 4 mm. long, as well as a few very small straight prickles; young branchlets spreading-pilosulous; leaves bipinnate, 4 to 4.5 cm. long including petiole; stipules subulate, deciduous, 1 mm. long; petiole 1.5 to 2 cm. long, canaliculate, subglabrous, bearing below the middle an oval gland 1 mm. long; rachis 2.5 cm. long, 3-canaliculate, pilosulous in the grooves, unarmed, sometimes with a single apical gland; pinnae 4 pairs, 4 to 5 cm. long, narrowly oblong in outline, the axes pilosulous; leaflets 9 to 16 pairs, oblong, 8 to 11 mm. long, 2.5 to 4 mm. wide, inequilateral, rounded or truncate-rounded at apex, at base truncate-rounded and oblique, beneath slightly paler, sparsely appressed-pubescent on both sides; spikes very numerous, fascicled, axillary and terminal, forming an ovoid naked panicle 9 to 16 cm. wide, the axes spreading-pilosulous; ultimate peduncles 8 to 15 mm. long, pilosulous, usually bearing two linear-lanceolate, alternate bracteoles about 1.3 mm. long; spikes rather dense, oblong-cylindric, 1 to 1.4 cm. long, 6.5 mm. in diameter (including the stamens), the bracteoles deciduous; calyx turbinate, rounded at base, 1.5 mm. long, spreading-pilosulous below the teeth, 5-lobed for  $\frac{2}{3}$  its length, the lobes deltoid, acutish; corolla when dry pale yellowish, 2 mm. long, 5-lobed to middle, pubescent below the tip of the lobes with subappressed hairs, the lobes ovate, acutish, densely ciliate with subglandular hairs; stamens about 180, some free, some irregularly fasciculate-connate at base or to the middle, 2.8 mm. long; ovary with slender glabrous stipe, about 11-ovulate, rather densely long-pilose.

Type in the herbarium of the Field Columbian Museum, No. 446,825, collected three miles inland from Silam, Yucatan, May, 1916, by G. F. Gaumer & Sons (No. 23,332).

A member of the *Americanae Spiciflorae*, as the genus is arranged by Bentham.

***Diospyros anisandra* Blake, sp. nov.**

Dioecious shrub, 3 meters high; stem glabrous; leaves alternate, crowded at the tips of the branches; petioles 1 to 2 mm. long, sparsely puberulous; blades obovate, 2.5 to 4.3 cm. long, 1.2 to 2.3 cm. wide, retuse at apex, cuneate at base, shining above, beneath slightly paler, glabrous except for a few hairs at base of blade on upper side, chartaceous-membranaceous, slightly veiny, the lateral veins 4 to 6 pairs; staminate flowers 1 or 2, axillary on the young branchlets, pendulous on pedicels 1 to 1.5 mm. long; calyx funnelform, 4 mm. long, glabrous outside, the 4 lobes lanceolate, 1.5 mm. long, acuminate, recurved, 3-nerved, within spreading-puberulous below the apex; corolla urceolate, "yellow," glabrous, 14 mm. long, the tube 7 mm. long, the 4 lobes lanceolate, 7 mm. long, spreading, acuminate; stamens glabrous, connate at extreme base, alternately longer and shorter, the longer 4 mm. long (filaments 2 mm., anthers 2 mm.), the anthers obliquely cordate



at base, acute at apex, the shorter stamens 2.7 mm. long (filaments 1 mm., anthers 1.7 mm.); pistillate flowers 1 or 2, axillary on the young branchlets, erect on glabrous pedicels 6 to 8 mm. long; calyx tube turbinate, 1.7 mm. long, glabrous outside, appressed-pubescent within, the 4 lobes ovate, acute or obtuse, spreading, at apex ciliate, at base within pilosulous, otherwise glabrous; bud subulate, very acute; corolla urceolate, glabrous, maroon color, the tube 4 mm. long, the 4 lanceolate acuminate lobes about 6.8 mm. long; pistil 4 mm. long; ovary 4-celled, with a pilose ring at base, the cells 1-ovuled; style 1 mm. long; stigma bifid, excavated.

Type in the herbarium of the Field Columbian Museum, No. 446,760, collected in the forests of Suitun, Yucatan, May, 1916, by G. F. Gaumer & Sons (No. 23,307). The pistillate plant (No. 23,308) was collected with the type.

A member of the Section *Danzleria*, not closely related to any described species.

***Citharexylum trinerve* Blake, sp. nov.**

Shrub 1.5 meters high, the stem minutely hispidulous toward the apex, glabrate; leaves opposite, on ciliolate petioles 5 to 12 mm. long, the blades oval or elliptic, 3.2 to 5.2 cm. long, 1.7 to 3.2 cm. wide, obtuse or emarginulate, not mucronate, at base short-cuneate, entire, chartaceous-coriaceous, above glabrous, prominulous-reticulate, beneath equally green, strongly 3-nerved slightly above the base, prominulous-reticulate, barbellate in the axils of the two lateral veins, otherwise glabrous; spikes terminal, solitary or in threes, usually simple, densely flowered, about 2.5 cm. long, about 1.6 cm. wide, the peduncle densely puberulous, 8 to 12 mm. long; bracts triangular, acute, 1.2 mm. long; flowers subsessile; calyx subtubular, 4 mm. long, villous-tomentose at apex in the sinus, otherwise subglabrous, 5-sulcate, with 5 short obtusish deltoid teeth; petals united for  $\frac{2}{3}$  their length, outside essentially glabrous, the tube 4 mm. long, short-pilose within above the base, the lobes 5, oblong, 5 to 5.5 mm. long, obtuse, inside densely barbate-villous; perfect stamens 4, reaching the apex of the tube, the fifth sterile; ovary glabrous.

Type in the herbarium of the Field Columbian Museum, No. 460,289, collected at Xnocac, Yucatan, December, 1916, by G. F. Gaumer & Sons (No. 23,502).

This species is very distinct in its small roundish strongly 3-nerved leaves.

***Randia millspaughiana* Blake, sp. nov.**

Glabrous shrub 6 meters high, 1 dm. thick, the branches armed with stout spines 4 to 9 mm. long; leaves crowded at tips of branchlets, opposite; petioles 1 to 1.5 mm. long, glabrous; blades oval, 1.5 to 2.7 cm. long, 0.9 to 1.7 cm. wide, short-pointed at base and apex, mucronulate, glabrous or sparsely puberulous beneath along the costa, above deep green and somewhat shining, scarcely paler beneath, with 5 to 7 pairs of nerves; flowers solitary, sessile; calyx 5 to 6 mm. long, glabrous outside, the campanulate tube 4 mm. long (measured to apex of inner membrane), with a pilose ring



inside at base of throat, the 5 subulate teeth 3 mm. long from base; corolla salver-shaped, blackening on drying, the tube 13 to 15 mm. long, 2.5 mm. thick, slightly widened at apex, with a pilose ring inside between the base and the stamens, the 5 lobes lanceolate, acuminate, slightly oblique, 9 to 15 mm. long, 5 mm. wide; stamens 5, included, glabrous, the cells 5 mm. long; ovary 2-celled; style 10.5 mm. long; stigma slightly clavate, undivided, 4 mm. long.

Type in the herbarium of the Field Columbian Museum, No. 446,691, collected at Maxcanú, Yucatan, March, 1916, by G. F. Gaumer & Sons (No. 23,260). Additional specimens collected in May are numbered *Gaumer* 23,227.

This species is related to *Randia xalapensis* Mart. & Gal., but has a much larger calyx and corolla. In size of flower it is intermediate between *R. xalapensis* and *R. longiloba* Hemsl.

***Notoptera leptcephala* Blake, sp. nov.**

Shrub 1.5 meters high; stem terete, striate, gray, tuberculate-hispid-pilose with incurved hairs and puberulous; leaves opposite; petioles densely tuberculate-hispid-pilose, 5 mm. long; blades ovate or elliptic-ovate, 5.5 to 8.5 cm. long, 2 to 3.5 cm. wide, acuminate, at base rounded or cuneate, mucronulate-denticulate (teeth 9 to 12 pairs), above very harshly tuberculate-hispidulous, beneath paler, rather softly and densely hispidulous-pilosulous and gland-dotted, reticulate-venose with about 10 pairs of lateral veins; uppermost leaves bracteiform, 1.8 to 3.8 cm. long; panicles terminating stem and branches, 8 cm. wide, 4 to 8 cm. long, convex; bracts 3 to 6 mm. long; peduncles 5 to 14 mm. long; pedicels 1 to 4 mm. long; heads discoid, about 26-flowered, when young subcylindric, 7.5 mm. high, 3.5 mm. thick, in age 9 to 10 mm. high, 6 to 6.5 mm. thick; involucre about 4-seriate, 3.5 to 4.5 mm. high, the phyllaries subcoriaceous, strigose, the outer ovate, obtuse, glabrate, the inner lanceolate, acute; corollas whitish, curved or reflexed, 4.5 mm. long (tube 2 mm. long, ampliate at base, teeth 1.2 mm. long); pales narrow, carinate and winged, obtuse, glabrous, erose-denticulate above; achenes ovate or oblanceolate, 3.5 to 4.5 mm. long (excluding wings), blackish, glabrous, narrowly winged on each side; pappus awns 2, the inner 2.2 mm. long, winged to apex, the wing spinose-ciliolate, the outer 1.5 mm. long, ciliolate, winged to the middle (the wing subglabrous), sometimes trifid at base.

Type in the herbarium of the Field Columbian Museum, No. 460,238, collected at Xnocac, Yucatan, December, 1916, by G. F. Gaumer & Sons (No. 23,473).

This species belongs to the Section *Loxosiphon*, and is readily distinguished from any other species of that group by its subcylindric heads. The sectional character<sup>1</sup> requires a slight modification to cover the ciliate wings of the achene in this species, a feature not previously known in this section. According to the collectors' note, *Notoptera leptcephala* is reported to be used medicinally.

<sup>1</sup>See Blake, Journ. Bot. 53: 225. 1915.



Blake, S. F. 1921. "New trees and shrubs from Yucatan." *Proceedings of the Biological Society of Washington* 34, 43–46.

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