

BOTANY.—*New plants from the Dominican Republic.*¹ E. C. LEONARD, National Museum (Communicated by WILLIAM R. MAXON).

The new species described in this paper are based upon material collected by Dr. W. L. Abbott in the early part of 1922. Prior to 1920 only a small proportion of the plants known to occur in the Dominican Republic were represented in the National Herbarium by specimens from that country, these consisting mainly of collections by Wright, Parry, and Brummel in 1871, Rose in 1913, and certain numbers of Türckheim, Fuertes, and Raunkiaer received from Berlin and Copenhagen. During the past four years, however, Dr. Abbott has collected nearly 3,000 numbers. Of these many have proved new to science and a considerable number are new to the National Herbarium.

Botanically, Hispaniola is probably the least known of the West Indies, and both Haiti and the Dominican Republic offer an extremely rich field to the collector.

Sophora albo-petiululata Leonard, sp. nov.

Plant shrubby; stipules none; leaves 5 to 10 cm. long, the rachis white-pubescent, deeply grooved on upper side; leaflets 12 to 16, elliptic, 8 to 10 mm. long, 2 to 5 mm. wide, rounded at both ends, entire, recurved on margins, obscurely punctate, the upper surface bright green, the lower surface paler; petiolules yellowish white, about 1.5 mm. long, pubescent; racemes terminal, 8 to 10 cm. long, velvety-pubescent; flowers 14 to 20, white, the standard broadly ovate, abruptly narrowed to a claw, 15 mm. long, 13 mm. broad, emarginate, the other petals 12 to 13 mm. long, 4 to 5 mm. broad; stamens 10, 9 to 10 mm. long; calyx 5 mm. long, silky-pubescent; pedicels 6 to 7 mm. long, silky-pubescent; ovary densely white-pubescent; pods not seen.

Type in the U. S. National Herbarium, no. 1,079,459, collected at Maniel Viejo, Province of Barahona, Dominican Republic, altitude 750 meters, March 10, 1922, by W. L. Abbott (no. 1934). Abbott's no. 1911 collected at the same locality is of this species.

No West Indian *Sophora* closely related to this species has hitherto been described. In shape and size of the leaflets it bears some resemblance to *S. macrocarpa* from Chile, but differs in its much smaller flowers.

Zanthoxylum bifoliolatum Leonard, sp. nov.

Tree, glabrous throughout, the branches sparingly armed with straight spines 2 to 4 mm. long; petioles 2 cm. long, grooved on upper surface, bearing a pair of spines at base of leaflets; leaflets 2, opposite, obovate, 4 to 8 cm. long, 2 to 4.5 cm. wide, rounded and emarginate at apex, gradually narrowed to a sessile, often oblique base, coriaceous, entire, the upper sur-

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face shining, prominently veined, the lower surface duller, minutely glandular, the veins prominent, the midrib usually bearing a spine below the middle; flowers 2 to 3 in the axils of the leaves; staminate flowers on pedicels 2 to 2.5 mm. long; calyx 3-lobed, minute; petals 3, ovate, 2 mm. long, 1.5 mm. broad; stamens 3, 4 to 5 mm. long; fruit not seen.

Type in the U. S. National Herbarium, no. 1,079,511, collected on Quita Espuela, in the vicinity of San Francisco de Macorís, Provincia Pacificador, Dominican Republic, altitude 1,000 meters, April 7, 1922, by W. L. Abbott (no. 2083).

Zanthoxylum bifoliolatum differs from other tropical American plants of this genus in having only two leaflets and in its small axillary inflorescence.

***Zanthoxylum venosum* Leonard, sp. nov.**

Tree (?) or shrub, glabrous throughout, armed with straight conical spines 2 mm. long; leaves odd-pinnate, 6 to 12 cm. long; petioles seldom armed, not grooved; rachis sparingly armed with short spines, shallowly grooved above; leaflets usually 5, opposite, elliptic to obovate, 3 to 7 cm. long, 1.5 to 3 cm. wide, narrowed to an obtuse point at apex, narrowed at base to a grooved petiolule 3 to 6 mm. long, prominently nerved and veined, very firm, coriaceous, entire, glabrous, both surfaces pellucid-glandular, shining, dark green above, paler beneath, the midrib on the under surface often bearing a small spine near the middle; inflorescence terminal, corymbose, glandular, armed with slender spines 2 to 2.5 mm. long, the flowers numerous; staminate flowers on pedicels 1.5 to 2 mm. long; sepals 3, 1 mm. long, ovate, rounded at apex; petals 3, ovate, 2.5 mm. long, 1.5 mm. wide; stamens 3, equaling the petals; pistillate flowers and fruit not seen.

Type in the U. S. National Herbarium, no. 1,079,475, collected on the summit of Loma de Cielo, near Polo, Province of Barahona, Dominican Republic, altitude 1,300 meters, March 12, 1922, by W. L. Abbott (no. 1969).

Although apparently related to *Zanthoxylum coriaceum* A. Rich.,* this plant differs strongly from that species in its more pointed, conspicuously veined, pellucid-glandular leaves and armed stems.

***Maba urbaniana* Leonard, sp. nov.**

Shrub or tree (?); bark gray, the tips of the young branches densely brown-pubescent; petioles 2 to 3 mm. long, densely pubescent; leaves obovate to oval, 1.5 to 3 cm. long, 0.5 to 2.5 cm. wide, rounded and occasionally emarginate at apex, narrowed from above the middle to a truncate or subcordate or rarely rounded base, entire, strongly reticulate, the upper surface shining, glabrous or slightly pubescent, drying tawny-olive, the veins impressed, the lower surface densely and softly pubescent, drying buckthorn-brown, flowers 2 to 3 in short axillary clusters; pedicels 2 to 3 mm. long, densely and softly tawny-brown pubescent; calyx 3 mm. long, 3-lobed, the lobes broadly triangular, pubescent without, glabrous within; corolla about 8 mm. long, pubescent, 3-lobed, the lobes 1 mm. long, thick, leathery; stamens 10, the longer 3 mm., the shorter 1.5 mm.; fruit not seen.

Type in the U. S. National Herbarium, no. 1,179,585, collected in the vicinity of San Lorenzo Bay, Dominican Republic, near sea level, April 26, 1922, by W. L. Abbott (no. 2235).

This species is distinct from its nearest relative, *M. caribaea* (A.DC.) Hieron, in the smaller and more crowded leaves and the denser soft brown pubescence of the under surface of the leaf blades.

***Solanum abbottii* Leonard, sp. nov.**

Shrub, 1 to 1.5 meters high; young twigs rather densely stellate-pubescent with 5 to 7-rayed hairs and armed with straight yellow spines about 5 mm. long; petioles 10 to 15 mm. long, stellate-pubescent and spinose; leaves oblong-elliptic in outline, 10 to 15 cm. long, 3 to 6 cm. wide, acutish at apex, narrowed from near the middle to base, sinuately 5 to 7-lobed, the lobes obtuse, the sinuses shallowly rounded, the upper surface dull green with occasional spines and stellate hairs on the impressed veins, otherwise glabrous, the lower surface yellowish green, rather densely pubescent with easily detached stellate hairs and with occasional spines; racemes axillary, up to 8 cm. long, 8 to 14-flowered; pedicels 6 to 10 mm. long, glabrous; calyx stellate-pubescent and spiny, the lobes triangular, abruptly long-acuminate; corolla violet, the lobes lance-ovate, 10 to 12 mm. long, 4 mm. broad, acutish, glabrous within, stellate-pubescent without; stamens and style equal and nearly erect, the anthers 4 to 5 mm. long; fruit not seen.

Type in the U. S. National Herbarium, no. 1,079,509, collected on the summit of Quita Espuela in the vicinity of San Francisco de Macorís, Provincia Pacificador, Dominican Republic, altitude 900 meters, April 7, 1922, by W. L. Abbott (no. 2073). An additional specimen was collected in the same region, April 10, 1922, by W. L. Abbott (no. 2124).

According to description, *Solanum orthacanthum* O. E. Schulz² agrees with the proposed new species in many respects, especially in general leaf-shape and in the character of the pubescence, but differs in having larger leaves (15 to 20 cm. long) with oblique cordate base and faintly repand margin, fewer flowers (about 4 in each raceme), shorter tomentose pedicels (2 to 4 mm. long), and larger corolla lobes (lobes 15 mm. long).

***Tabebuia rugosa* Leonard, sp. nov.**

Small tree; young branches thick, gray; leaves 3-foliolate; petioles very stout, 1 cm. long; petiolules 1 cm. long or less; leaflets ovate to elliptic, 12 to 17 cm. long, 6 to 11 cm. wide, rounded and usually minutely apiculate at apex, obliquely subcordate at base, coriaceous, the margins entire or undulate, recurved, the upper surface glabrous, lepidote (?), strongly rugose and shining, the veins impressed, the lower surface drying light grayish brown, prominently and reticulately veined, the midrib and primary and secondary veins glabrous, the anastomosing veins densely and softly pubescent, otherwise glabrous; inflorescence terminal, umbellate, brown-lepidote; pedicels 4 to 5 mm. long; calyx 12 to 13 mm. long, lepidote, the lobes triangular, acute; corolla 3 to 3.5 cm. long, "red," the stamens inserted on the corolla tube 5 mm. above the base, the longer stamens 15 mm. long, the shorter 12 mm., the anthers 3.5 mm. long.

Type in the U. S. National Herbarium, no. 1,079,609, collected near Lajana on the Samaná Peninsula, Dominican Republic, altitude 100 meters, April 30, 1922, by W. L. Abbott (no. 2272).

This species may be related to *T. acrophylla* (Urban) Britton, as a similarity in texture and shape of leaves seems to indicate, but in other respects

² Urban. Symb. Antill. 7: 537. 1903.

the two plants are different. The flowers of *T. acrophylla* are twice as large and the leaflets are smaller and obovate and pubescent on both surfaces, including the primary and secondary veins of the lower surface.

Dr. Abbott's no. 2293, collected in the same region, May 2, 1922, and possibly from the same tree, consists of leaves and mature pods. The pods are up to 18 cm. long, 5 mm. thick, rough-lepidote, with slender awn-like tips; the seeds are 7 mm. long, 5 mm. wide, the wings 5 to 7 mm. long.

***Tabebuia rubriflora* Leonard, sp. nov.**

Large tree; twigs thick, gray; leaves 4 or 5-foliolate, the petioles up to 8 cm. long; petiolules 0.5 to 2 cm. long; leaflets elliptic to obovate-oblong, 5 to 12 cm. long, 2.5 to 6 cm. wide, obtusish at apex, rounded or subcordate at base, coriaceous, entire, slightly lepidote on both surfaces, pubescent in the angles of the veins on the lower surface, otherwise glabrous; flowers in axillary, 2 to 4-flowered, subsessile clusters; pedicels 8 to 10 mm. long; calyx 6 to 7 mm. long, sparsely lepidote, the lobes triangular, 2 to 3 mm. long, acute; corolla 2.5 to 3 cm. long, deep red, the tube 2.5 mm. wide at base, 15 mm. wide at throat; capsules smooth, up to 12 cm. long; seeds 10 mm. long, 4 to 5 mm. wide, the wings 4 to 5 mm. long.

Type in the U. S. National Herbarium, no. 1,079,657, collected in the vicinity of Laguna, on the Pílon de Azúcar, Dominican Republic, altitude 500 meters, May 12, 1922, by W. L. Abbott (no. 2346).

In texture and size of leaflets this species resembles *T. pachyphylla* Britton, from Cuba, but differs in its much smaller flowers and broader leaflets.

***Tabebuia paniculata* Leonard, sp. nov.**

Shrub or small tree; petioles 1 to 2 cm. long; leaves 3 to 5-foliolate, the petiolule of the middle leaflet 5 to 10 mm. long, the lateral leaflets subsessile; leaflets elliptic to obovate, 3 to 8 cm. long, 1.5 to 4 cm. wide, rounded and emarginate at apex, gradually narrowed at base (the lateral leaflets oblique), thick, coriaceous, entire, the upper surface with impressed nerves, glabrous or slightly lepidote, drying dark brown, the lower surface with prominent nerves, lepidote, drying light brown; inflorescence terminal, paniculate, lepidote, the bracts subulate 1.5 to 8 mm. long, the flowers numerous; pedicels 1 to 2 cm. long, lepidote; calyx 2-lipped, 10 to 12 mm. long, lepidote; corolla 4 cm. long, purplish (?), veiny, the tube 3 mm. wide at base, enlarging to 15 mm. at throat; pods not seen.

Type in the U. S. National Herbarium, no. 1,079,633, collected in the vicinity of Laguna, on the Pílon de Azúcar, Dominican Republic, altitude 500 meters, May 11, 1922, by W. L. Abbott (no. 2330).

Tabebuia paniculata is related to *T. pentaphylla* Hemsl., and differs chiefly in its short petioles and more rounded leaflets. It resembles *T. gonavensis* Urban in some respects, but has much larger leaflets and smaller flowers.

***Justicia alsinoides* Leonard, sp. nov.**

Diffuse herb; stems weak, branched, usually decumbent, rooting at the nodes, 10 to 15 cm. long, terete, obscurely grooved, pubescent with downwardly curved hairs, bearing white linear straight cystoliths 0.25 mm. long; petioles 5 to 8 mm. long, the under surface pubescent with curved hairs,

the upper bearing cystoliths; leaves ovate, 10 to 18 mm. long, 8 to 10 mm. wide (the upper and lowermost usually smaller), obtuse at apex, rounded, subcordate, or abruptly narrowed at base, shortly decurrent on petiole, the upper surface bearing numerous cystoliths, glabrous or with a few scattered hairs, the lower surface glabrous, bearing a few cystoliths; inflorescence spicate, 2 to 4 cm. long, 4 to 6-flowered; bracts linear, lanceolate, 2.5 mm. long; calyx lobes linear-lanceolate, 4 mm. long, sparsely pubescent, 3-nerved, the lateral nerves less prominent than the median; corolla 5 mm. long, pinkish, the tube glabrous, the lips equal, 2 mm. long, puberulent without, the upper ovate, notched, the three lobes of the lower lip equal in size, rounded; style 3.5 mm. long (?); capsule 6 mm. long, puberulent, 4-seeded, the retacula 1 mm. long; seeds flat, stipitate at base, orbicular, 1 mm. in diameter, reddish brown, minutely reticulate.

Type in the U. S. National Herbarium, no. 1,979,513, collected on the summit of Quita Espuela, in the vicinity of San Francisco de Macorís, Provincia Pacificador, Dominican Republic, altitude 900 meters, April 8, 1922, by W. L. Abbott (no 2119a).

This plant is closely related to *J. reptans*, and may be only a form of that species. It differs chiefly in the size of the sepals, which are at least twice as long as those of *J. reptans*. Likewise, both corolla and capsule are noticeably larger and the leaves are more rounded at the base.

Siphocampylos linearifolius Leonard, sp. nov.

Herbaceous; stems 36 cm. high (or higher?), glabrous; leaves narrowly ovate-oblong, 4 to 7 cm. long, 4 to 11 mm. wide, tapering from below the middle to an obtuse apex, narrowed to a short winged petiole 1 to 2 mm. long, serrate with small sharp teeth or the upper nearly entire, glabrous on both surfaces; flowers in the axils of the upper leaves; pedicels 2 cm. long, puberulent, bearing two subulate bracts near the middle; calyx lobes narrowly triangular, 6 to 7 mm. long, 1 mm. wide at base, puberulent, often reddish; corolla 2.5 to 3 cm. long, red, the lips equal, the lobes of the lower lip narrowly triangular, 5 mm. long, 2 mm. broad at the base, obtuse at apex, yellow in dried plants, the lobes of the upper lip ovate, 7 to 8 mm. long, 3 mm. broad at base, obtuse at apex; styles 2 cm. long; anthers 3.5 to 4 mm. long, densely barbellate at apex; capsule 6 mm. long; seeds 0.5 mm. in diameter, grayish brown, reticulate.

Type in the U. S. National Herbarium, no 1,079,436, collected at Maniel Viejo, Province of Barahona, Dominican Republic, altitude 1060 meters, March 8, 1922, by W. L. Abbott (no. 1903). Dr. Abbott's no. 1851, collected in the same region from the upper slopes of Loma de Cielo, near Polo, altitude 1,200 meters, March 2, 1922, is of this species.

Related to *S. tuerckheimii* Urban in the similarity of the flowers, the glabrous stems, and thin glabrous leaves, this plant is sufficiently distinct in its very narrow leaves and more distant teeth to deserve specific rank.