

PROCEEDINGS
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NEW PLANTS FROM SOUTH AND CENTRAL AMERICA
COLLECTED BY WILSON POPENOE.

BY S. F. BLAKE.

In the course of identification of the specimens collected by Wilson Popenoe during his recent trip to Central and South America for the Office of Foreign Seed and Plant Introduction I have found nine apparently unnamed species. These are described here in order that the names may be available for use in papers to be published elsewhere by Mr. Popenoe on the results of his trip.

***Tibouchina asperipilis* Blake, sp. nov.**

Shrub 1.3 m. high, much branched; branches terete, densely hispid-pilose, the hairs wide-spreading, about 0.7 mm. long, minutely hispidulous throughout, with blackish base and brownish tip; internodes 1 to 3 cm. long; petioles similarly pubescent, 2 to 4 mm. long; leaf blades ovate or the uppermost suborbicular-ovate, 1 to 2.8 cm. long, 1 to 1.6 cm. wide, acute, at base broadly rounded or slightly cordate, minutely serrulate, above dark green, bullate, densely pilose-setose with ascending yellowish-white hairs with adnate bases, beneath paler green, densely spreading-hispid-pilose and hispidulous along all the veins and veinlets, essentially glabrous between them, 5-plinerved or obscurely 7-plinerved (the lateral nerves shortly coalescent at base), the veins and veinlets impressed above, foveolate-reticulate beneath; cymes 3-flowered, on mostly paired terminal branchlets, subtended by 2 free bracts 7 mm. long or less; pedicels 1 to 4 mm. long; calyx 2-bracteolate at base, the bracteoles oblong, about 2 mm. long, deciduous; calyx tube campanulate, 7 to 8 mm. long, densely setose-pilose with subappressed or ascending hairs, the lobes 5, lance-ovate, 8 to 10 mm. long, strigose and ciliate, contracted near middle, with acute 3-nerved herbaceous tips, persistent; petals 5, "purple," obovate, ciliate, 1.5 cm. long; stamens 10, alternately unequal, glabrous throughout, the filaments 8 and 12 mm. long, the subulate beaked anthers 7 and 9 mm. long, the free portions of the connectives 0.5 and 2.8 mm. long, with 2 large rounded golden lobes at base; ovary strigose at apex, 5-celled, shortly 5-lobed.

Type in the U. S. National Herbarium, no. 1067084, collected in open

places on hillsides, Loja, Ecuador, altitude 2255 meters, April 8, 1921, by Wilson Popenoe (no. 1313).

This attractive species is said to be a common shrub in the region about Loja. It is a member of the Section *Diotanthera*, coming in the group containing species 149 and 150 in Cogniaux's monograph, and is readily distinguished by its pubescence and small ovate leaves.

***Centronia tunguraguae* Blake, sp. nov.**

Small tree, 6 m. high; branchlets quadrangular, flattened below the nodes, 4-grooved, densely ferruginous- or sordid-lepidote, becoming glabrate and greenish; petioles slender, 1 to 3.5 cm. long, lepidote beneath, stellate-tomentose above; blades oval or elliptic, 9 to 15 cm. long, 2.8 to 6.8 cm. wide, acuminate to an obtuse apex, cuneate or somewhat rounded-cuneate at base, crenate-denticulate except toward base (teeth about 30 pairs, callous, obtuse, about 0.5 mm. high), subcoriaceous, above deep green, callous-bullate, essentially glabrous, with impressed venation, beneath densely whitish- or sordid-ferruginous-pubescent with short stellate hairs and longer pinnately branched hairs, strongly 5-plinerved and prominent-reticulate; flowers in clusters of 1 to 4 in the terminal and subterminal axils, the floral leaves not seen; pedicels erect, 1 to 1.5 cm. long, densely stellate-lepidote and somewhat pilose with many-celled hairs; calyx densely ferruginous-stellate-lepidote and less densely ascending-pilose, in bud turbinate-obovoid, obtusely apiculate, 16 mm. long, 10 mm. thick, in anthesis irregularly calyptrate near middle, thick and subcoriaceous throughout; petals 6, "deep salmon-color," broadly obovate, truncate-rounded, 18 mm. long, 14 to 16 mm. wide, glabrous; stamens 12, equal, the linear-subulate glabrous filaments 11 mm. long, the lance-subulate anthers 8.5 mm. long, the free portion of the connectives 1.5 mm. long, with a short blunt posterior appendage and a subequal blunt spur; ovary 6-celled, glabrous, depressed at apex, shortly and bluntly 6-lobed; style thickish, glabrous, 2 cm. long.

Type in the U. S. National Herbarium, no. 1067083, collected by roadside at the settlement Pondoá, on slopes of Mt. Tunguragua, Ecuador, altitude 2745 meters, March 10, 1921, by Wilson Popenoe (no. 1296).

In Cogniaux's monograph this species comes nearest *Centronia brachycera* (Naud.) Triana, of Colombia, which is described as having the leaves rounded at base, pedicels 5 to 10 mm. long, calyx limb thinly membranaceous, petals 2.5 cm. long, and anthers minutely appendaged dorsally. The anthers in *C. tunguraguae* show the peculiar apparent reversal of dorsality noted by Triana¹ in some species of the genus, and correspond precisely with the figure of those of *C. excelsa* (Bonpl.) Triana given by Triana (pl. 5, f. 59a). That species, however, is said to have 7-plinerved leaves with rounded or subcordate base, and numerous herbaceous stems only 2 to 3 meters high. *C. tunguraguae* is described by the collector as rare.

***Gaultheria pubiflora* Blake, sp. nov.**

Shrub 1.5 m. high; stem rimose; branches leafy, densely hispid with ascending or subappressed deep brown hairs; petioles hispid, 1 to 2.5 mm.

¹Trans. Linn. Soc. 28: 165. 1872.

long; leaf blades ovate, 1 to 1.8 cm. long, 5 to 9 mm. wide, acute, callous-tipped, rounded at base, hispid-serrulate, above somewhat shining and along costa puberulous, beneath sparsely ascending-hispid with lepidote-tuberculate-based hairs, prominulous-reticulate on both sides; flowers solitary in the axils toward ends of branches, or the lowest axil rarely bearing a leafy-bracted raceme; pedicels becoming decurved, 8 to 10 mm. long, densely griseous-puberulous with spreading hairs and less densely rufous-hispid with upcurved hairs, bracteate at extreme base; calyx 3.2 to 4 mm. long, 5-lobed about half its length, puberulous above, the lobes ovate, obtusish, densely ciliate; corolla "white," ovoid-urceolate, 7 to 8 mm. long, rather densely puberulous outside, within pilose from shortly above the base to the base of the 5 short suborbicular lobes; stamens 10, the lance-ovate filaments 2 mm. long, densely pilose dorsally and finely glandular-puberulous, essentially glabrous ventrally, the anther sacs (body) 0.5 mm. long, the shorter neck of each cell divided into two awns 0.6 mm. long; capsule 5-celled, subglobose, pubescent, entirely included in the accrescent somewhat fleshy calyx, the whole 6 mm. thick.

Type in the U. S. National Herbarium, no. 1059982, collected near Albán, Cundinamarca, Colombia, altitude 2685 meters, October 5, 1920, by Wilson Popenoe (no. 1133).

Related to *Gaultheria anastomosans* (L. f.) H. B. K., but distinguished from that and from all related species by its externally pubescent corolla.

***Disterigma margaricocum* Blake, sp. nov.**

Shrub 1 to 1.5 m. high; older branches fuscous, hispid-pilose or glabrescent; young branches erect, brownish, densely hispid-pilose with short spreading hairs, densely leafy; petioles broad, 1 mm. long, more or less pubescent; leaf blades narrowly lanceolate or elliptic-lanceolate, 6.5 to 11 mm. long, 1.2 to 2 mm. wide, acuminate, at base rounded or acute, entire, coriaceous, somewhat boat-shaped, short-ciliate, sometimes sparsely pubescent above toward base, whitish-green, veinless above, the costa and 2 or 3 pairs of lateral veins obscure or conspicuous beneath; flowers axillary, solitary, forming dense leafy pseudo-racemes 1 to 2 cm. long at base or apex of branches; pedicels becoming deflexed, spreading-puberulous, 1.5 to 4 mm. long; bracts at base of calyx 2, suborbicular, 2.5 to 3 mm. long, rounded or obtuse, ciliate, equalling the calyx tube, several-striate; calyx tube globose-campanulate, 2.8 mm. long, obtusely 4-angled, essentially glabrous, the 4 teeth deltoid, 1.4 mm. long, acutish, ciliate and sparsely pubescent dorsally toward apex; corolla urceolate, "rich rose-pink," 9 mm. long, about 5 mm. thick, glabrous, fleshy, the 4 teeth deltoid, recurved, acutish, 1.3 mm. long; stamens 8, equal, attached to extreme base of corolla, the filaments narrowly linear-subulate, 5.2 mm. long, densely spreading-hispid-pilose, the anthers muriculate especially below, 3.5 mm. long (body 1.5 mm., tubules 2 mm.); ovary 4-celled; "berry translucent, white, 6 to 12 mm. thick; seeds few, minute."

Type in the U. S. National Herbarium, no. 1067082, collected in paramo on slopes of Mt. Tunguragua, Ecuador, altitude 3050-3965 meters, March 8, 1921, by Wilson Popenoe (no. 1287).

Mr. Popenoe describes this species as a very common shrub on the slopes of Mt. Tunguragua between the altitudes above mentioned, with very juicy, tender and crisp, pleasantly subacid berries which resemble large pearls in appearance. The native name of the plant is "chirimote." It is allied to *D. weberbaueri* Hörold, of Peru, which is described as a shrub only 0.5 meter high, with white corolla, filaments 4 mm. long, and anthers 3 mm. long (body 2 mm., tubules 1 mm.).¹

***Disterigma popenoei* Blake, sp. nov.**

Shrub 2 m. high; branches whitish, becoming purplish brown, glutinous, puberulous, glabrate, leafy; petioles stout, puberulous, 2 to 4 mm. long; leaf blades oval or elliptic-ovate, 2.4 to 3.4 cm. long, 1.2 to 2 cm. wide, acute to obtuse, cuneate at base, coriaceous, entire, glabrous, strongly 3-nerved from the base, the nerves impressed above, prominent beneath, usually evanescent below apex of leaf, the secondaries obscure or obsolete; flowers in dense axillary fascicles of about 6, sessile or on pedicels 1.5 mm. long or less; bractlets 2 at base of calyx, equaling calyx tube, suborbicular, 2 mm. long, ciliolate with subglandular hairs; calyx tube campanulate-subglobose, obtusely quadrangular, glabrous, equaling the limb (1.5 mm. long), the 4 deltoid acutish teeth glabrous or slightly ciliate; corolla "white," cylindric, 6 to 7 mm. long (with teeth straightened out), the tube rather densely spreading-puberulous outside, pilose-barbate within except at base, the 4 recurved lobes triangular-ovate, glabrous, about 2.2 mm. long; stamens 8, the filaments linear, pilose on both sides except toward the glabrous base, 5 mm. long, the anther sacs 1 mm. long, the tubes 2 mm. long, conic; ovary 4-celled; "berry translucent white, about 6 mm. thick."

Type in the U. S. National Herbarium, no. 1059983, collected in very moist scrub in the Cordillera de Zamora, east of Loja, Ecuador, altitude 2440-2475 meters, April 11, 1921, by Wilson Popenoe (no. 1323).

This species, which occurs abundantly in cool and moist places in the Cordillera de Zamora between 2440 and 2745 meters, bears the native name "tira," which seems to be restricted to it. The fruit is said to be similar to that of the "chirimote" (*Disterigma margaricoccum*, described above), but is not quite as good. The species is very distinct from any previously described in its comparatively large strongly 3-nerved leaves and numerous flowers with the corolla densely puberulous outside.

***Macleania irazuensis* Blake, sp. nov.**

Shrub 2 m. high; branch stout, subterete, glabrous; petioles stout, glabrous, 5 mm. long; leaf blades elliptic-ovate, 4 to 6 cm. long, 2 to 2.6 cm. wide, obtuse, broadly rounded or subcordate at base, entire, coriaceous, glabrous, marginate, penninerved, the lateral veins 4 or 5 pairs, sparsely branched, obscure or prominulous above, prominulous beneath; racemes axillary and terminal, 1.5 to 3.8 cm. long, glabrous, erect, straight, becoming loosely flowered in age, about 10-flowered, the bracts ovate, rounded,

¹I take this opportunity to transfer to *Disterigma* a Costa Rican species of this genus described under *Vaccinium* several years ago.

Disterigma dissimile Blake.—*Vaccinium dissimile* Blake, Journ. Bot. 53: 271. 1915.

persistent, 2 to 3 mm. long; pedicels stout, glabrous, articulate with calyx, 1.2 to 1.6 cm. long, bearing near or below middle a pair of oval or suborbicular bracts about 2 mm. long; calyx glabrous, the campanulate subterete tube 4 mm. long, the limb 3 to 4 mm. high, 9 mm. wide, the 5 teeth suborbicular, apiculate, 2 mm. high; corolla ovoid-cylindric, ventricose below, "rose-red," 17 to 19 mm. long, 5 to 6 mm. in diameter below, everywhere glabrous, the 5 teeth somewhat spreading, triangular-ovate, acutish, 3.5 mm. long; stamens 10, equal, the linear-oblong glabrous filaments 3.8 mm. long, the densely muriculate anther sacs 5 to 5.5 mm. long, the tubules 2, connate, 4.8 to 5 mm. long, each opening by a longitudinal slit for more than half its length; style exerted about 4 mm.

Type in the U. S. National Herbarium, no. 1059981, collected in moist region on slopes of Volcán Irazú, Costa Rica, altitude 3050 meters, June 28, 1920, by Wilson Popenoe (no. 1017).

According to Mr. Popenoe, this species grows sometimes as an epiphyte and sometimes on the ground. Its nearest relative, *Macleania turrialbana* Donn. Smith, also of Costa Rica, has oval or elliptic-oblong leaves, acutish to broadly rounded at base, spreading or pendulous racemes, and tubules (despite the original description) somewhat longer than the anther sacs. In Hörold's synopsis¹ of the genus *M. turrialbana* is incorrectly placed in the group with anthers produced into a single tubule. In the type material they are produced into 2 connate tubules. *Macleania costaricensis* (Klotzsch) Hörold, of which I have seen no material, is apparently close to *M. irazuensis*, to judge from the abbreviated original description, but it is placed by Hörold, who had presumably examined material, in the 1-tubular group.

Macleania laurina Blake, sp. nov.

Scandent shrub; stem stout, obscurely puberulous, glabrate, very leafy; leaves variable; petioles stout, obscurely puberulous or glabrous, 3 to 11 mm. long; leaf blades ovate to oblong-elliptic, 5 to 11 cm. long, 2.5 to 3.5 cm. wide, acute to obtusish, at base rounded to rounded-cuneate, entire, not revolute, thick-coriaceous, sparsely short-hirsute with dark hairs which often leave little pits on falling, penninerved, the chief lateral veins about 3 pairs, impressed above, prominulous beneath, the secondaries few and obscure or obsolete; raceme axillary, subumbelliform, spreading-puberulous, its axis 2 cm. long, about 20-flowered; pedicels clavate, 1.5 to 2 cm. long, spreading-puberulous, articulate with calyx, bearing 2 or 3 deciduous bractlets near the base; calyx densely puberulous, the tube campanulate, subterete, 3 mm. high, the limb 5 mm. high, 8 mm. wide, the 5 lanceolate to narrowly subulate teeth 1 to 2 mm. high; corolla ovoid-cylindric, ventricose below, "rose-pink, waxy," 1.8 to 2.2 cm. long, 7 mm. in diameter below, densely griseous-puberulous outside, glabrous within, the 5 triangular-ovate erect acutish teeth 2.5 mm. long; stamens 10, equal, the linear-oblong filaments pilose-ciliate for the upper half of their length, 4 mm. long, the densely muriculate anther sacs 6 mm. long, the tubules 2, connate,

¹Bot. Jahrb. Engler 42: 268. 1909.

dehiscing by slits for about half their length, 4 mm. long; style barely exerted; "berry round, dark purple, juicy, about 12 mm. thick."

Type in the U. S. National Herbarium, no. 1059985, collected among brush on hillsides near El Angel, Province El Carchi, Ecuador, altitude 3355 meters, June 5, 1921, by Wilson Popenoe (no. 1340).

Described by the collector as abundant in the vicinity of El Angel at elevations from 3050 to 3660 meters. It bears the Quichua names "chaqui-lulu" (signifying the ball of a baby's foot, given it from the appearance of the fruit) and "haulicón." The latter name is applied to several related species, while the former is distinctive of this plant. It is not cultivated.

Macleania laurina is allied to *M. loeserneriana* Hörold, from Mt. Pichincha, but in that species the axis of the raceme is 5 cm. long, the bractlets of the pedicels are borne near the middle, the corolla is apparently smaller, and the anthers with their tubules are 1.3 cm. long.

***Macleania popenoei* Blake, sp. nov.**

Shrub 3 m. high, sometimes half-climbing; branches stout, olive-green, glabrous, subangulate, very leafy; petioles stout, fleshy like the base of the costa, glabrous, 7 to 10 mm. long; leaf blades oblong-elliptic to ovate, 7 to 10.5 cm. long, 3 to 4.8 cm. wide, acute to obtusish, at base cuneate to rounded, entire, thick-coriaceous slightly revolute, sparsely impressed-punctate and glabrous on both sides, feather-veined, the stronger lateral veins 2 or 3 pairs, impressed above, prominent beneath, the secondaries rather obscure on both sides; flower buds 7 mm. long, densely covered with imbricated ovate bracts with spreading-recurved acuminate ciliolate tips; flowers in axillary fascicles of about 6 to 10; pedicels deflexed, glabrous, about 8 mm. long, bearing 2 small ciliolate bractlets at or below the middle and a circle of small glands at apex, where articulate with the calyx; calyx campanulate, subterete, glabrous, 5 mm. long, the limb 5 mm. wide, the 5 acutish teeth lanceolate to deltoid, 0.5 to 1 mm. long; corolla "reddish," ovoid-urceolate or tubular-urceolate, 12 to 13 mm. long, fleshy, everywhere glabrous, the 5 teeth ovate, acutish, erectish, 1.5 mm. long; stamens 10, equal, the broad filaments free or connate, about 2.8 mm. long, densely ciliate above, the densely muriculate anther sacs 5 to 5.5 mm. long, the two coherent longitudinally dehiscent tubules 3 mm. long; style exerted about 5 mm.

Type in the U. S. National Herbarium, no. 1059984, collected in cool moist scrub in the Cordillera de Zamora, east of Loja, Ecuador, altitude 2440-2745 meters, April 8, 1921, by Wilson Popenoe (no. 1330).

This species is said to be abundant, and is known as "joyapa," a generic name applied to various species. It produces soft, sweet, juicy fruits about half an inch in diameter, but is not cultivated. It appears to be as near *M. pilgeriana* Hörold as any other species, but is distinguished from that plant by its broader leaves with the nerves impressed above, its somewhat shorter corolla, the ciliation of its filaments, and the different proportions of the anther sacs and the tubules.

***Citharexylum subflavescens* Blake, sp. nov.**

Tree 8 m. high; branchlets elliptic in cross-section, flattened near the nodes, white-pithy, densely flavescent-tomentulose with branched hairs,

becoming griseous or sordid; leaves opposite; petioles slender, those of the main leaves 3 to 6 cm. long, pubescent like the branchlets, channeled beneath and often above; blades ovate or oblong-ovate, 12 to 17.5 cm. long, 4 to 8 cm. wide, acute, at base cuneate to rounded, entire, thick-pergamentaceous, somewhat sinuate and minutely revolute on margin. above in youth densely pubescent with spreading olivaceous-yellowish branched hairs, in age glabrescent except along costa and veins and then pale green, beneath very densely and persistently flavescens-pilose-tomentose with branched hairs, the costa and 13 to 16 pairs of lateral veins (united close to margin) impressed above, prominent beneath, the secondaries obscure or concealed; spikes solitary or paired in the upper axils, about 9 cm. long (including the 0.7 to 1.8 cm. long peduncle), 1.6 cm. thick, rather densely flowered, pubescent like the stem, apparently erect or spreading; flowers sessile; bracts triangular, 1 to 2.5 mm. long, tomentose-pubescent; calyx obovoid, 5 to 6 mm. long, densely pubescent like the stem, its teeth irregularly cohering in two or three groups, these triangular, obtuse or apiculate, about 1 mm. long; corolla "whitish," 8 mm. long (limb about 4 mm. wide), essentially glabrous outside, densely barbate-pilose within from level of insertion of stamens to middle of the 5 (rarely 6) lobes, these cuneate-flabellate, 2 to 2.5 mm. long, somewhat wavy-margined; perfect stamens 5 (rarely 6), inserted near middle of corolla tube, included, the subulate glabrous filaments 1.3 mm. long, equaling the linear-oblong obtuse anthers; ovary 4-celled, the ovules solitary, erect; style bifid; "fruit red, the size of a small cherry, in spikes up to 30 cm. long."

Type in the U. S. National Herbarium, no. 1067081, collected at Bogotá, Colombia, altitude 2640 meters, October 11, 1920, by Wilson Popenoe (no. 1143).

This species is cultivated in Bogotá as a street tree. It is distinguished by its combination of long-petioled comparatively large leaves, densely flavescens-tomentose beneath, and its truly spicate pentandrous flowers. Only a few species with all the stamens perfect have been described, and from all of these *C. subflavescens* is clearly distinct.