

NEW PLANTS FROM GUATEMALA AND HONDURAS.

By S. F. BLAKE.

INTRODUCTION.

In the spring of 1919 an Economic Survey Mission, headed by the late Major Percy H. Ashmead, was sent out by the United States Department of State to make a general survey of the natural conditions and resources of the region lying between the Motagua Valley in Guatemala and the Chamelecón Valley in Honduras. The botanical collections on which the present paper is based, amounting to about 810 numbers, were made by Henry Pittier, G. B. Gilbert, and S. F. Blake, of the United States Department of Agriculture, and also by Dr. H. N. Whitford and Mr. L. R. Stadtmiller, who were attached to the expedition as foresters. A considerable part of Mr. Pittier's Honduran collection was unfortunately lost in transit to Washington.

The period of our work, May 2 to June 4, 1919, fell within the end of an unusually extended dry season, to which was due the fact that we were able to follow some of the mountain trails which in wet weather become nearly or quite impassable. Mr. Pittier's collections were made chiefly on the main trail leading from Los Amates, Department of Izabal, Guatemala, through the Moljá Valley to El Paraíso and La Florida, Department of Copán, Honduras, thence back through the Espíritu Santo Mountains and the valleys of the Mojanales and Tepemechín rivers to Morales in Guatemala, with later collections at Quiriguá and Quebradas, Guatemala. He was accompanied by Mr. Gilbert, Dr. Whitford, and Mr. Stadtmiller. The specimens collected by Dr. Whitford and Mr. Stadtmiller were chiefly from El Lancetillal and Macuelizo, Honduras. The writer later followed the same trail from Los Amates through El Paraíso and La Florida to Quebradas, and in addition collected around Los Amates, at Gualán, and on a trip made in company with Mr. Stadtmiller and Mr. H. H. Bennett from Los Amates over the Sierra de las Minas to Izabal.

The vascular cryptogams collected have been determined by Mr. William R. Maxon, the grasses by Prof. A. S. Hitchcock and Mrs. Agnes Chase, the Nyctaginaceae, Amaranthaceae, and Rubiaceae by

Mr. Paul C. Standley, and the Eupatorieae by Dr. B. L. Robinson, who has described a new species of *Eupatorium* collected on this expedition. The remainder have been determined by the writer, with the exception of a few species named by Mr. Pittier, who has already published a paper¹ describing a chicle-yielding species of *Achras* which he collected.

CYPERACEAE.

Fuirena bulbipes Blake, sp. nov.

Rootstock creeping, about 2 mm. thick; base of stems bulbous-thickened, about 13 mm. long, 6 mm. thick; stems approximate, erect, 60 to 70 cm. high, about 3 mm. thick below, angulate, striate, the lower internodes hispid-pilose with spreading hairs, the upper glabrous; basal sheaths short, hispid-pilose, nearly or quite bladeless; stem leaves about 4, the hispid-pilose sheaths 2.5 to 4.5 cm. long, the brown pilose-ciliate scarious ligules 2 mm. long, the lance-linear erectish blades flat, 3.5 to 14 cm. long, 5 to 8 mm. wide, about 6-nerved, pale green, rather densely ascending-hispidulous above, spreading-hispid-pilose on margin and on nerves beneath; panicle small, 8 cm. long, slightly branched; spikelets sessile in clusters of 3 to 8, ellipsoid, acutish, 5 to 6 mm. long, 2 mm. thick; scales obovate, pale brown, scarious, ciliate, rounded, about 2 mm. long, the 3 green nerves converging and abruptly produced into a spreading or recurved stiff green mucro 0.2 to 0.7 mm. long; perianth scales 3, about equaling the achene in the dried state, the slender bent stipe about one-third as long as the body, the body obovate-oval, strongly 3-ribbed, papillose-puberulous and cillolate, membranaceous, about 0.8 mm. long, 0.4 mm. wide, at tip abruptly contracted into a bulbous-thickened blunt appendage about 0.2 mm. long, this provided with a slender incurved hispidulous awn about 0.2 mm. long; achene broadly obovoid-trigonous, pale brown, shiny, short-stiped, about 0.8 mm. long (excluding beak), 0.7 mm. wide, the whitish hispidulous beak about 0.5 mm. long.

Type in the U. S. National Herbarium, no. 989612, collected in dryish ditch along railroad at Cristina, Department of Izabal, Guatemala, May 22, 1919, by S. F. Blake (no. 7578).

With a general resemblance to *F. umbellata* Rottb., this species may be readily distinguished by its perianth scales, which are oval, 3-nerved, bulbous-thickened above, and provided with a minute incurved awn. Those of *F. umbellata* are obovate, emarginate, membranaceous, not apically thickened, and tipped with a comparatively long curving awn.

MORACEAE.

Dorstenia contrajerva tenuiloba Blake, subsp. nov.

PLATE I.

Habit and flowers of the typical form; leaves broadly ovate in outline, 16 cm. long, 15 to 18 cm. wide, deeply pinnatifid, the lobes 7, the middle and upper ones lanceolate, attenuate, 8 to 11 cm. long, 1.5 to 2 cm. wide, about four times as long as the breadth of the blade between them.

Type in the United States National Herbarium, no. 989610, collected in damp woods along trail from Los Amates to Izabal, in the lower region of the Sierra de las Minas, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7803).

¹ On the origin of chicle with descriptions of two new species of *Achras*, Journ. Washington Acad. Sci. 9: 431. 1919.

From the series of *D. contrajerva* and *D. contrajerva houstoni* L. in the National Herbarium, this plant differs so markedly in leaf form as to merit subspecific separation.

EXPLANATION OF PLATE 1.—*Dorstenia contrajerva tenuiloba*, from the type specimen. One-half natural size.

OLACACEAE.

Heisteria media Blake, sp. nov.

Tree; young branchlets dull olive-green, the older grayish-barked, glabrous; leaves alternate, the blades oval to oblong-elliptic or rarely obovate-oval, 10 to 15 cm. long, 4.5 to 7 cm. wide, abruptly short-pointed with obtuse tip or rarely and abnormally rounded, cuneate at base, pergamentaceous, deep green and slightly shining above, dull beneath, glabrous, the primary veins about 7 pairs, alternate, obscure above, prominulous beneath, forked near the tip and anastomosing near the margin, the secondaries obscure; petioles sulcate, 10 to 15 mm. long; calyx in young fruit 2 to 2.8 cm. wide, coriaceous, glabrous, 5-lobed to middle, the lobes deltoid, obtuse, plicate in the sinus; young fruit ovoid, acutish, 6 mm. long.

Type in the U. S. National Herbarium, no. 989624, collected near Los Ranchos, Department of Copán, Honduras, May 6 or 7, 1919, by H. Pittier (no. 8448).

Heisteria media in its leaf characters comes between *Heisteria acuminata* (Humb. & Bonpl.) Benth. & Hook.¹ and *H. coccinea* Jacq., uniting nearly the texture of the leaf of *H. acuminata* with the obscure venation of *H. coccinea*. It is, however, perfectly distinct from either of these species.

LAURACEAE.

Phoebe ambigens Blake, sp. nov.

PLATE 2.

Tree up to 30 meters high and about 1 meter in diameter; branchlets angled, striate, in youth finely strigillose, glabrate; leaves alternate; petioles stout, obscurely puberulous above, glabrate, unmarginated, 1.3 to 2.8 cm. long; blades elliptic to oval-oblong, 9.5 to 26 cm. long, 3.5 to 10 cm. wide, obtuse or usually short-pointed with obtuse apex, at base cuneate, pergamentaceous, in youth finely appressed-puberulous especially above along costa, in age glabrous, often tufted in the axils of the veins beneath, elegantly prominulous-reticulate on both sides, the 5 to 7 pairs of lateral veins prominent on both sides, diverging at an angle of about 45°; peduncles axillary toward tips of branches, 5.5 to 7.5 cm. long, obscurely puberulous or glabrous; panicles pyramidal, loose, obtuse, rather few-flowered, 3.5 to 6 cm. long, 4 to 8 cm. wide, finely griseous-puberulous; flowers umbellulate in 3's or 4's at the tips of the ultimate branchlets, the pedicels 4 to 9 mm. long, the bractlets deciduous; perianth 7 mm. long, 15 mm. wide when expanded, the tube short, turbinate, 1 mm. long, the segments broadly oval, broadly rounded at apex, slightly or not at all narrowed at base, 6 to 7 mm. long, 4.8 to 5.5 mm. wide, densely appressed-griseous-puberulous outside, puberulous within; stamens of series I quadrate-oblong, 2.4 mm. long, 1.7 mm. wide, truncate, contracted into a short-pubescent base only 0.4 mm. long, the upper pair of cells directly over the lower; stamens of series II similar, with longer stipe (1 mm. long), the anther 1.8 mm. long, subtruncate; stamens of series III 2.8 mm. long, the anther 1.4 mm. long, truncate, the cells lateral-extrorsely dehiscent, the filament 1.4 mm. long, short-pubescent,

¹ *Heisteria acuminata* Benth. & Hook.; Donn. Smith, Enum. Pl. Guat. 3: 18. 1893; *Rhaptostylum acuminatum* Humb. & Bonpl. Pl. Aequin. 2: 139. pl. 125. 1809.

bearing two-fifths its height above its base two whitish subglobose sessile glands essentially as long as itself; pistil 2.2 mm. long, the depressed-globose ovary with a circumferential ring of hairs near middle, the style equaling the ovary; perianth limb deciduous, the tube persistent as a shallow cup.

Type in the U. S. National Herbarium, no. 989623, collected in clay soil at Rodezno, Department of Copán, Honduras, at an altitude of about 120 meters, May 3, 1919, by H. N. Whitford and L. R. Stadtmiller (no. 7).

OTHER SPECIMENS EXAMINED:

GUATEMALA: In rich clay, Las Playitas, Department of Izabal, altitude 45 meters, May 13, 1919, *Whitford & Stadtmiller* 32.

This species bears the native names "guambo" (Honduras) and "aguacatillo" (Guatemala). The species is well distinguished by the size of the flowers and the character of the leaves. The wood is used for boards. The nature of the fruit is unfortunately not known.

EXPLANATION OF PLATE 2.—*Phoebe ambigens*, from the type specimen. Natural size.

SILENACEAE.

Drymaria idiopoda Blake, sp. nov.

Prostrate annual, several-stemmed, the stems 10 to 40 cm. long, simple or sparsely branched, very sparsely spreading-pilose; leaf blades broadly ovate or suborbicular-ovate, 4 to 11 mm. long, 4 to 10 mm. wide, abruptly apiculate and slightly cuspidulate at the rounded or obtuse tip, broadly rounded or subtruncate at base, thin, light green, ciliate, glabrous above, sparsely pilose along the costa beneath; petioles 1 to 3 mm. long, pilose-ciliate; pedicels solitary in the upper axils, sparsely spreading-pilose, 10 to 18 mm. long; sepals 5, oblong-ovate, 3 to 4 mm. long, obtuse to acutish, the outer herbaceous, obscurely 3-nerved, pilose-ciliate and sparsely spreading-pilose dorsally, the 2 inner glabrous and with narrow pale margin; petals 5, white, linear-cuneate, 2 to 4-fid, 2 to 4-nerved, equaling or at length exceeding the sepals, persistent; stamens 10, unequal, the 4 longer equaling or somewhat surpassing the pistil; ovary ovoid, obtuse; styles 4, recurved, strongly papillose; capsule equaling the sepals, obtuse, the 4 valves thickened at tip; seeds 23, brownish black, papillose-muricate, 0.6 to 0.8 mm. long.

Type in the U. S. National Herbarium, no. 989609, collected along brook at Hacienda La Zumbadora, Department of Copán, Honduras, May 12, 1919, by S. F. Blake (no. 7381).

Drymaria idiopoda belongs to the group of closely related species centering around *D. cordata* (L.) Willd., and is distinguished by its sparse spreading pubescence, ovate (not cordate) leaves, and solitary axillary flowers.

FABACEAE.

Stylosanthes eriocarpa Blake, sp. nov.

Frutescent, ascending, branched, 30 cm. high; young branches olive-green, densely pilose with ascending hairs, the older fuscous, at length gray-barked, subglabrate; stipules pilose, 5.5 to 6 mm. long, the sheath 3 to 4 mm. long, the free tips subulate, subspinescent, 2 to 2.5 mm. long; petioles pilose, the free portion 2 to 2.5 mm. long; leaflets 3, oblong-elliptic to oblong-obovate, 3 to 7.5 mm. long, 1.5 to 2.5 mm. wide, acute at each end, slightly mucronulate, slightly denticulate above, thick, deep green and sparsely short-pilose above, beneath paler, short-pilose, with 3 pairs of prominulous whitish veins; spikes composed of 2 or 3 spikelets; primary bracts pilose, unifoliate, otherwise



DORSTENIA CONTRAJERVA TENUILOBA BLAKE.



PHOEBE AMBIGENS BLAKE.

similar to the leaflets but smaller; secondary bract 1, scarious, pilose-ciliate, 2.8 mm. long, bifid to middle, the lobes lance-ovate, acute; axis rudiment slender-subulate, pilose-ciliate, shorter than the bract; bractlet 1, similar to the secondary bract but with narrower lobes; calyx 6.5 mm. long (including the 4 mm. long stipelike base), membranaceous, 5-lobed, the 4 upper lobes rounded, ciliate, the lowest lobe the longest, obtuse, ciliate and dorsally pilose; corolla yellow, marked with red on banner, 5 mm. long; banner oval, barely emarginate; lateral petals equaling the keel, rounded; stamens subequal, the alternate ones with longer filaments and very small didymous anthers; pod 8 mm. long, the sterile basal joint densely long-villous, 1.5 mm. long, the fertile joint villous, 3 to 3.5 mm. long, 1-nerved on the sides and loosely reticulate, the villous hooked beak 3 mm. long.

Type in the U. S. National Herbarium, no. 989608, collected on an open rocky hillside along trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7792).

This species is a member of the section *Styposanthes*, and is most closely related to *S. hamata* (L.) Taub. (*S. procumbens* Swartz), from which it differs in its shorter stipules and the few-veined pubescent leaflets.

Melbomia albida Blake, sp. nov.

Herb, the stems prostrate, rooting at the nodes, about 1 meter long, green, densely and finely spreading-hirtellous and with sparse longer uncinete hairs, the internodes 2.5 to 14 cm. long; stipules lance-ovate, 6 mm. long, attenuate, deciduous, herbaceous, becoming dry and brownish, striatulate, finely hirtellous, those of the pairs united on one side at base; leaves 3-foliolate; petioles erect, 6 to 9 cm. long, slender, densely and finely spreading-hirtellous, the rachis similar, 3 to 7 mm. long; stipels linear-subulate, striatulate, deciduous, 2.5 mm. long; petiolules densely hirtellous, 2 to 3 mm. long; lateral leaflets ovate, 4 to 6 cm. long, 2 to 3 cm. wide, acuminate, at base broadly rounded, papery, above green, sparsely puberulous, glabrate, beneath glaucescent, densely short-pilose with ascending white hairs, the chief lateral veins about 4 pairs, the secondaries somewhat prominulous-reticulate above, the secondaries and tertiaries densely prominulous-reticulate beneath; terminal leaflet ovate or suborbicular-ovate, 4.7 to 7 cm. long, 3 to 4.2 cm. wide, acuminate, at base rounded or cuneate-rounded, otherwise similar to the lateral leaflets; peduncles solitary, axillary, erect, 16 to 22 cm. long, densely spreading-hirtellous and with sparse longer uncinete hairs, bearing about 3 pairs of ovate, acute, striate, mostly deciduous bracts about 4 mm. long; raceme simple, loose, few-flowered, about 7 cm. long in young fruit, like the pedicels uncinete-hirtellous; bracts herbaceous, ovate, 4 mm. long, acuminate, striate, deciduous, finely hirtellous and sparsely ciliate; pedicels mostly in pairs, in flower 5 mm., in fruit 10 mm. long; calyx finely hirtellous and sparsely ascending-pubescent, the ovate entire upper lip 2.7 mm. long (from base of tube), the lower lip subequal, 3-lobed to below the middle, the lobes ovate, acuminate, the middle one longest; corolla white, faintly tinged with pink, 5.5 mm. long, glabrous, densely and finely papillose all over outside, the banner quadrate-orbicular, subemarginate, short-clawed; loment (submature) on an erect, densely uncinete-hirtellous stipe 4 mm. long, 2-jointed, densely uncinete-hirtellous, slightly curved on the upper margin, lobed beyond the middle on the lower, the isthmus broad, not inflexed above, the joints semi-orbicular, straight on the dorsal margin, broadly rounded on the lower, 7 mm. long, 4.5 mm. wide, the style 1.8 mm. long in flower, glabrous, deciduous in fruit.

Type in the U. S. National Herbarium, no. 1,037,056, collected in wood path at Quebradas, Department of Izabal, Guatemala, May 19, 1919, by S. F. Blake (no. 7510).

Meibomia albida is readily distinguished from its nearest relative, *M. axillaris* (Swartz) Kuntze, by its ovate acuminate leaflets and white flowers. The description of *M. axillaris* var. *sintensisii* Urban³ is suggestive of *M. albida*, but I can not believe that the plant above described is only varietally distinct from *M. axillaris*.

***Meibomia macrodesma* Blake, sp. nov.**

Scandent herb; stem slender, green, finely and densely spreading-puberulous and more sparsely or on the young parts densely hispid with ascending or spreading brownish uncinata hairs; leaves alternate, 3-folliolate; stipules deciduous, not seen; petioles 2.5 to 5.5 cm. long, the rachis 1.2 to 2.2 cm. long, pubescent like the stem, but the long hairs scarcely hooked; petiolules densely rufescent-hairy, about 2.5 mm. long; stipels linear-subulate, deciduous, about 5 mm. long; lower pair of leaflets obliquely ovate, 3.5 to 7 cm. long, 2 to 3.8 cm. wide, obtuse or acute, apiculate (the apiculation about 1 mm. long), at base broadly rounded, papyraceous, above deep green, evenly but not densely pilose with subappressed brown hairs, densely rufescent-ciliate, beneath paler green and subglaucous, similarly but more densely and softly pilose, the hairs denser and more rufescent along the prominent veins; terminal leaflet similar but larger and equilateral, acute, 4 to 11 cm. long, 2.2 to 5.8 cm. wide; racemes axillary, about 12 cm. long, curved, very loose, few-flowered, pubescent like the stem; flowers paired; bracts deciduous, not seen; pedicels in fruit 5 to 12 mm. long, pubescent like the stem; calyx puberulous and hispid, 4 mm. long, its 4 teeth acuminate, the lowest longest; flowers not seen; stipe of fruit 5 mm. long, exceeding the calyx, densely hispidulous with straight brownish hairs; pod 1 or 2 jointed, 3.4 to 5.5 cm. long, divided on the lower side nearly to the dorsal isthmus, rufescent-ciliate and rather sparsely rufescent-pilose with ascending, not hooked hairs; joints reniform-suborbicular, 3 cm. long, 2.5 cm. wide, reticulate, marginate, whitish, with a sinus 2 to 3 mm. deep in the middle of the back, not at all or only very obscurely beaked at apex.

Type in the U. S. National Herbarium, no. 989635, collected on edge of woods, along trail from Hacienda El Limón to El Paraíso, Department of Copán, Honduras, May 12, 1919, by S. F. Blake (no. 7359).

This species is a member of the group *Nephromeria* and is closest to *Meibomia purpusii* (T. S. Brandeg.) Blake,⁴ but may be distinguished by its much broader leaflets, pubescent with longer rufescent hairs, and by its larger loment joints, which are not beaked at apex.

***Meibomia prorepens* Blake, sp. nov.**

Herbaceous, the stems prostrate, 1 meter long, densely spreading-pilose with dull-white hairs about 1 mm. long, the internodes 3 to 11 cm. long; stipules lance-subulate, 8 to 10 mm. long, attenuate, persistent, connate on one side at base for about 3 mm., quickly becoming brown and stiff, striate, densely pilose; leaves 3-folliolate; petioles 4 to 9.5 cm. long, densely spreading-pilose; rachis 5 to 12 mm. long, like the petiolules (2 to 4 mm. long) densely spreading-pilose; stipels linear-subulate, striate, persistent, 4 to 6 mm. long; lateral leaflets ovate, 5 to 10 cm. long, 2.5 to 5 cm. wide, acuminate, mucronulate, at base broadly rounded or subcordate-rounded, papery, above deep green, evenly ascending-

³ Symb. Antill. 2: 303. 1900.

⁴ *Desmodium lunatum* T. S. Brandeg. Zoe 5: 246. 1908. Not *D. lunatum* Huber, 1906; *Meibomia lunata* Rose & Standl. Contr. U. S. Nat. Herb. 16: 215. 1913; *Desmodium purpusii* T. S. Brandeg. Univ. Calif. Publ. Bot. 6: 53. 1914.

pilose with short hairs, glabrescent, beneath glaucescent, in youth densely sericeous-pilose, at maturity rather densely pilose with ascending white hairs, those along the veins spreading, the lateral veins 5 or 6 pairs, whitish and prominent beneath, the secondaries and tertiaries prominulous-reticulate beneath and to a less degree above; terminal leaflet rhombic-ovate, 5.5 to 10.8 cm. long, 2.5 to 6 cm. wide, acuminate, broadest usually below the middle, cuneate-rounded at base; peduncles solitary in the axils, erect, about 18 cm. long, rather densely spreading-pilose, and pubescent with shorter uncinata spreading hairs, bearing two or three pairs of broadly ovate short-pointed pilose bracts about 5 mm. long, these connate on one side for half their length; raceme simple, loose, about 14 cm. long in fruit, the somewhat zigzag rachis densely uncinata-pubescent with short, stiff, spreading, yellowish white hairs; bracts suborbicular-ovate, about 3 mm. long, short-pointed, dry, striate, deciduous; pedicels mostly paired, 5 mm. long in flower, 10 mm. in fruit, spreading or ascending, uncinata-pubescent; calyx uncinata-puberulous and toward tip spreading-pilose, the upper lip suborbicular, emarginate, 1.8 mm. long (from base of tube), the lower 3-lobed to middle, the lobes ovate, acute, the middle one 2.5 mm. long (from base of tube); corolla deep magenta, 5 mm. long, glabrous, the banner obovate-orbicular, scarcely emarginate; loment on an erect uncinata-puberulous stipe 5 to 6 mm. long, 1 or 2-jointed, densely uncinata-puberulous especially toward the lower margin, straightish above, lobed about to middle on lower side, the broad isthmus dorsal, scarcely inflexed above, the joints oval-semi-orbicular, 6 to 8 mm. long (scarcely mature), 4 mm. wide, slightly inflexed on the dorsal suture, broadly rounded on the lower, the persistent recurved style glabrous except at base, 2 mm. long.

Type in the U. S. National Herbarium, no. 1,037,058, collected at Los Amates, Department of Izabal, Guatemala, May 29, 1919, by S. F. Blake (no. 7718).

Meibomia prorepens is related to *M. umbrosa* Britton, of Jamaica. That species, however, is described as having the leaflets finely pubescent beneath and obliquely obtuse at the base, the bracts of the peduncle lance-subulate, the fruiting pedicels 2 cm. long, and the joints of the loment obliquely oblong, nearly separated, 8 mm. long and 5 mm. high.

***Lonchocarpus izabalanus* Blake, sp. nov.**

Tree 8 meters high, with dense head; older branches gray-barked, glabrate, the younger olive-green, finely strigillose with rusty hairs and glanduliform-papillose; petioles 6 to 6.5 cm. long, subterete, striatulate, pubescent like the younger branches; rachis 6 to 7 cm. long; petiolules 5 to 6 mm. long, densely rusty-strigillose; leaflets 7, opposite, oblong to obovate-oblong, those of the lowest pair 6.5 cm. long, 3.5 cm. wide, the others 8 to 11.8 cm. long, 4 to 5 cm. wide, abruptly short-pointed, rounded or cuneate-rounded at base, papery, obscurely punctate, entire, above green, sparsely and minutely strigillose, glabrescent, beneath glaucescent with glanduliform-papillose hairs, finely strigillose with whitish and rusty hairs, with some longer curved hairs along the veins. the lateral veins 7 to 9 pairs, prominent, the secondaries somewhat prominulous-reticulate; panicles axillary, cylindric, normally 15 cm. long (including the 3 to 5 cm. long peduncle), 2.5 cm. thick, dense above; primary pedicels mostly 2-flowered, 1.5 mm. long, finely strigillose like the rachis; secondary pedicels 0.8 mm. long; calyx 3 mm. long, rusty-strigillose, the depressed-deltoid teeth acutish, the lowest one longer and acute; banner suborbicular-oval, 12 mm. long, 9.5 mm. wide when spread out, retuse, slightly cordate at base and very short-clawed (claw 1.2 mm. long), densely silky-strigillose outside with subrufescent hairs, outside greenish with maroon border, inside maroon with

green spot at base; lateral petals obliquely cuneate, strigillose toward base of lamina above, deep maroon, 11.5 mm. long (claw 2 mm.); keel petals similar to the lateral, strigillose toward base of lamina; staminal sheath white; ovary and style strigose; ovules 3.

Type in the U. S. National Herbarium, no. 989626, collected on shore of Lake Izabal, Izabal, Department of Izabal, Guatemala, June 1, 1919, by S. F. Blake (no. 7841).

Although it is difficult to place this species definitely in the absence of fruit, it seems to be most nearly allied to *L. luteomaculatus* Pittier, which has a purple keel with a large yellow spot at the base. Its native name is "almen-dro."

OXALIDACEAE.

Oxalis stenomeres Blake, sp. nov.

Slender annual, once forked near the middle, 35 cm. high; stem terete, purplish, glabrous; leaves pinnately 3-foliolate, the leaflets deflexed; petioles 5 to 10 mm. long, glabrous or sparsely pilose above, the rachis 2 to 4 mm. long; lateral leaflets subsessile, elliptic-ovate, 3.5 to 6 mm. long, 1.5 to 2 mm. wide, oblique at base, obliquely emarginate at apex, thickish, glabrous, pale beneath; terminal leaflet narrowly elliptic-lanceolate, 12 to 23 mm. long, 2 to 5 mm. wide, obscurely cordate at base, emarginate at apex, the spreading-pilose petiolule 0.6 mm. long; peduncles axillary, glabrous, 1.6 to 2.6 cm. long; cymes short, bifurcate, about 7-flowered; bracts subulate, 1.2 mm. long; pedicels 1.5 to 3 mm. long, glabrous, jointed in the lower third; sepals oval-ovate, obtuse, membranaceous, 3.5 to 4.5 mm. long, sparsely ciliolate with stipitate glands, bearing 2 or 3 bristles at apex and a few loose deciduous hairs at base; petals yellow, 6 mm. long; longer filaments appendaged dorsally, ciliolate above the appendage; styles 5, hairy; capsule oval-ovoid, blunt, 4.5 mm. long, ciliate on the angles.

Type in the U. S. National Herbarium, no. 989607, collected on open rocky hillside thinly wooded with pine, on trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7791).

Oxalis stenomeres is closely related to the rare *O. angustifolia* H. B. K. (*Lotoxalis angustifolia* Rose), but differs from the description of that species in its habit, its small lateral leaflets, and its somewhat pubescent calyx.

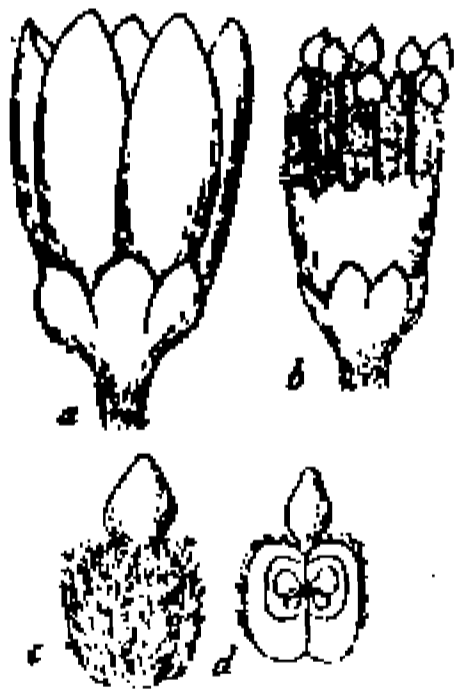


FIG. 1.—Details of *Decazyx macrophyllus*. a, Flower; b, androecium; c, gynoecium; d, the same in longitudinal section. Scale 4.

Decazyx Pitt. & Blake, gen. nov.

Tree with alternate large simple punctate leaves; flowers white, in slender racemiform panicles; sepals 5, free, imbricate, persistent; petals 5, free, imbricate, generally deciduous; disk short, spreading, repand-crenate; stamens 10, alternately unequal, united for about half their length and deciduous in a ring, the filaments lance-subulate, the short anthers dorsifixed; carpels 5, coherent; style 1, short, thick, the stigma globose-ovoid; ovules 2, superposed, subhorizontal; one or two (rarely five) follicles maturing, coriaceous, dehiscing by the ventral suture and over the top; seed solitary, filling the pod, inclosed by the crustaceous 2-lobed free endocarp except at the hilum; embryo with flat oval cotyledons, in thin horny endosperm, the short radicle bent against the broad side of a cotyledon.

RUTACEAE.



DECAZYX MACROPHYLLUS PITT. & BLAKE.

Decazyx macrophyllus Pitt. & Blake, sp. nov. PLATE 3. FIGURES 1, 2.

Large tree; branches rufous-strigillose, glabrate, grayish-barked; leaves alternate, rather crowded, the blades cuneate-obovate, 18 to 28 cm. long, 5 to 9 cm. wide, short-pointed, long-cuneate at base, pergamentaceous, densely punctate, entire, slightly repand, glabrous, somewhat shining above, paler green and duller beneath, the lateral veins 18 to 28 pairs, prominulous beneath, the secondaries loosely prominulous-reticulate; petioles stout, sulcate above, glabrous, 2.5 to 3.5 cm. long, somewhat enlarged at apex; panicles several toward tips of branches, probably subtended by reduced leaves, slender-cylindric, 18 to 27 cm. long (including the 1.5 to 4.5 cm. long peduncle), about 1.8 cm. thick, rather dense, strigillose; primary branches of panicle 5 to 15 mm. long, erect, simple or forked, the usually zigzag rachis 1 to 6-flowered; pedicels 1.5 to 4.5 mm. long; bracts and bractlets triangular, persistent, 1 to 2 mm. long; sepals ovate, obtusish, subherbaceous, thickish, ciliolate and strigillose, 1 mm. long; petals rhombic-cuneate, obtuse, sparsely gland-dotted, glabrous, 3.5 mm. long, 1.4 mm. wide; stamens shorter than the petals, the flattened filaments hairy; gynoecium shorter than the stamens, the pistils hairy; mature follicles broadly oval, erect, 4 mm. long, sparsely pubescent, densely verrucose; endocarp yellowish white; seed oblong-ellipsoid, 3 mm. long, blackish brown, slightly shining.

Type in the U. S. National Herbarium, no. 989606, collected near Los Ranchos, Department of Copán, Honduras, May 6 or 7, 1919, by H. Pittier (no. 8453).

A large tree, known to the natives as "mangle," and used for house building.

This new genus is difficult to allocate satisfactorily among the subtribes of the Rutaceae, as the family is divided by Engler, but it clearly belongs to the tribe Xanthoxyleae and probably is a member of the subtribe Evodiinae. In this group it keys to the Old World genus *Melicope*, which is tetramerous and differs in many other characters. From the Decatropidinae, to which subtribe it proceeds in Engler's key, it differs in the lack of a gynophore and in its simple leaves, as well as in its united filaments. The flowers are described as white from Mr. Pittier's field notes. In the dried plant they are a dull yellowish white with darker central portion.

EXPLANATION OF PLATE 3.—*Decazyx macrophyllus*, from the type specimen. One-half natural size.

MELIACEAE.

Cedrela longipes Blake, sp. nov.

Tree about 27 meters high, the trunk 0.7 meter in diameter; branchlets fuscous, glabrous, lenticellate, the older gray-barked; leaves alternate, 9 or 11-foliolate; petioles terete, sulcate above toward tip, glabrous, 7.5 to 11 cm. long, the rachis similar, 9 to 12 cm. long; petiolules slender, glabrous, sulcate above, 1.5 to 2.2 cm. long; leaflets alternate or subopposite, the blades obliquely ovate or oblong-ovate, acuminate or attenuate and usually somewhat falcate, at base obliquely and unequally rounded, 9.5 to 12 cm. long, 3.5 to 4.5 cm. wide, chartaceous, glabrous, shining above, dull beneath, reticulate both sides with slightly prominulous veinlets, the chief veins about 10 pairs, whitish and prominulous on both sides; panicles subterminal, glabrous, nearly equaling the leaves, the peduncle about 1 cm. long, the panicle broadly pyramidal, 22 cm. long, 23 cm.

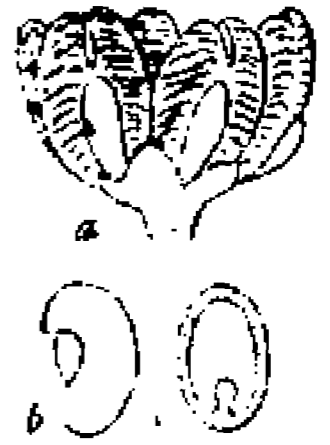


FIG. 2.—Details of *Decazyx macrophyllus*. a, Fruit; b, seed enclosed in the crustaceous endocarp; c, seed in longitudinal section. Scale 2.5.

wide or more, the many-flowered branches and branchlets spreading at right angles, the cymules 2 or 3-flowered, the pedicels 1 to 2 mm. long; calyx 2.5 mm. long, splitting irregularly, the 5 teeth deltoid, obtusish, obscurely ciliolate; petals 5, quincuncial in aestivation, narrowly oblong, obtuse or apiculate, 7.5 mm. long, 2.5 mm. wide, densely griseous-puberulous outside, short-ciliate, pilose within, adnate to the column by a ventral ridge for nearly half their length; column glabrous, equaling the pistil; stamens 5, shorter than the pistil, the subulate filaments 2 mm. long, sparsely pilose at middle, the oblong sagittate-based apiculate glabrous anthers 1 mm. long; pistil 4 mm. long, glabrous, the ovary subglobose, scarcely exceeding the stout style, the stigma 1.5 mm. wide.

Type in the U. S. National Herbarium, no. 989582, collected in clay soil at El Paraiso, Department of Copán, Honduras, altitude about 750 meters, May 8, 1919, by H. N. Whitford and L. R. Stadtmiller (no. 30).

This species is easily distinguished by its glabrous long-petioluled leaflets. It bears the vernacular name "cedro."

***Trichilia izabalana* Blake, sp. nov.**

Tree 8 meters high; branches olive-green, obscurely puberulous, glabrate; leaves alternate, 7-foliolate; petioles dully puberulous, somewhat flattened above, 5.5 to 7.5 cm. long; rachis flattened and sulcate above, puberulous, 9 to 14 cm. long; petiolules of the lateral leaflets 3 to 7 mm. long, of the terminal 2 cm. long, puberulous; lowest pair of leaflets disjunct, the blades oval, obtuse, normally 6 to 8 cm. long, 4.5 to 5.5 cm. wide; two upper pairs of leaflets opposite, the blades oval to obovate-oval, 9.5 to 15 cm. long, 4.8 to 7.2 cm. wide, obtuse or bluntly short-pointed, at base cuneate to rounded, papery, entire, glaucescent-green above, glabrous except for the puberulous sulcate costa, beneath brighter green, puberulous along the prominent costa and sparsely so along the 9 to 11 pairs of prominent veins, elsewhere glabrous, the secondaries obscure; terminal leaflet obovate, equaling or sometimes smaller than the upper pairs; panicles axillary, slender-cylindric or in fruit conic-cylindric, less than half as long as the leaves, puberulous, the peduncle 4.5 to 7 cm. long, the rachis 5 to 7.5 cm. long; primary branches of panicle short, the lower about 3-flowered, the upper 1-flowered; pedicels 1 to 2.5 mm. long; calyx 1 mm. long, 5-lobed to middle with obtusish lobes, sparsely strigillose; petals 5, white, oblong-ovate, obtuse, 3.5 mm. long, sparsely puberulous outside; stamens 10, the filaments united for one-third their length, pilose on margin; anthers short, pilose; disk broad, cupular, embracing base of ovary; ovary subsericeous-velvety, 2-celled; ovules 2, collateral; style one-third as long as ovary, pubescent.

Type in the U. S. National Herbarium, no. 989604, collected on edge of woods along Río Mosinga, Izabal, Department of Izabal, Guatemala, June 2, 1919, by S. F. Blake (no. 7863).

Trichilia izabalana seems to be most nearly related to *T. oaxacana* Blake, but may be easily distinguished by its narrow panicle, odd-pinnate leaves, and evenly puberulous petioles.

EUPHORBACEAE.

***Phyllanthus capillipes* Blake, sp. nov.**

Shrubby below, about 30 cm. high; stem slender, simple, or branched, glabrous, somewhat zigzag; leaves alternate; stipules subulate, subscarious, persistent, 1.5 mm. long; petioles very slender, glabrous, 3 to 13 mm. long; blades lance-ovate, 3.5 to 5.5 cm. long, 11 to 21 mm. wide, acuminate, cuspidate, cuneate-rounded at base, membranaceous, glabrous, deep green above, pale beneath, pinnate-veined with about 6 pairs of lateral veins; flowers few in the axils, usually 1 pistillate and 2 or 3 staminate; pedicels of staminate flowers 5 to 7

mm. long, capillary; sepals 5, about 0.8 mm. long; disk membranaceous, broad, 5-lobed; stamens 5, united into a column, 3 of the filaments free about half their length, the other 2 united nearly to apex; anthers vertically dehiscent; pedicels of pistillate flowers capillary, 2 to 2.8 cm. long; sepals 5, broadly ovate, acutish, entire, imbricate, 1 to 1.3 mm. long, greenish-centered and pale-margined; disk cupular; styles 3, united at base, 2-parted nearly to base; stigmas capitate; capsule 3-celled, greenish white, glabrous, about 3 mm. long and wide; seeds brownish, curved, 1.8 mm. long, verrucose in about 5 lines on the broader face.

Type in the U. S. National Herbarium, no. 989594, collected in gravelly places at Quebradas, Department of Izabal, Guatemala, May 19 to 22, 1919, by H. Pittier (no. 8614).

In many features this species agrees with the description of *P. neogranatensis* Muell. Arg., but it differs in the character of the stamens, which do not agree precisely either with those of the section *Peltandra* or of the section *Kirganelia*.
Croton tragioides Blake, sp. nov.

Erect annual, about 60 cm. high, much branched, often trifurcate near middle; stem yellowish white, stellate-pilose with subsessile hairs, their knob-like bases persistent; leaves alternate; stipules linear-subulate, entire, setose-pilose, about 1.8 mm. long, persistent; petioles stellate-pilose, 3 to 18 mm. long, bearing a pair of yellowish white peziziform glands at apex; blades triangular-ovate or ovate, 2 to 5.5 cm. long, 1.3 to 3.7 cm. wide, obtusish, at base truncate-rounded to subcordate, coarsely crenate-serrate with entire or slightly dentate obtusish teeth, thin, green and sparsely pilose with mostly simple hairs above, beneath paler and more densely stellate-pilose; racemes bisexual, axillary, 4 to (at length) 15 mm. long, much shorter than the leaves, stellate-pilose; pistillate flowers one or two, basal, their pedicels in fruit 2.5 to 3 mm. long; staminate flowers crowded, about 6, their pedicels 0.6 to 1 mm. long; bracts triangular, about 0.5 mm. long, entire, hispid-pilose-ciliate but eglandular; calyx of pistillate flower 5-parted, the sepals spatulate-oblongate, acutish, slightly accrescent, subequal or 2 slightly larger than the others, stellate-pilose, in fruit about 3 mm. long; petals none; hypogynous glands short, lanceolate, obtuse, free, alternate with the sepals; ovary densely stellate-pilose; stigmas 3, sessile, spreading, thickish, 2-parted nearly to base; calyx of staminate flower about 1 mm. long, the 5 sepals ovate-triangular, obtuse, sparsely hispid-pilose; petals 5, oblong-ovate, acuminate to an acutish tip, 1.5 mm. long, ciliate near base with a few long hairs and sparsely ciliate at tip; hypogynous glands 5, ovate, obtuse, free; receptacle pilose; stamens 9, glabrous; capsule pale, subglobose, 4 mm. long, sparsely pilose with chiefly simple hairs; seeds compressed, dark olive-gray, lucid, 3 mm. long, finely and obscurely impressed-punctulate in longitudinal lines.

Type in the U. S. National Herbarium, no. 989621, collected on shore of Lake Izabal, Izabal, Department of Izabal, Guatemala, June 2, 1919, by S. F. Blake (no. 7854).

OTHER SPECIMENS EXAMINED:

TABASCO (?): La Colmena, August, 1889, *Rovirosa* 562.

GUATEMALA: Along roads, Livingston, February, 1905, *Türckheim* 8751 (also distributed as no. II. 1150). Weed, Livingston, April, 1905, *Maxon & Hay* 3777. Weed in banana field, St. Thomas, May, 1909, *Deam* 6056.

HONDURAS: On railroad bank, plain of Sula, 1887, *Thieme* 246. Roadsides, San Pedro Sula, May, 1888, *Thieme* 335; September, 1888, *Thieme* 558.*

COSTA RICA: Savannas of Boruca, November, 1891, *Pittier & Durand* 457.

* These three collections by Thieme were distributed under J. D. Smith's no. 5465.

This new species is closely allied to *C. glandulosus septentrionalis* Muell. Arg., and is evidently of the same weedy nature. It is distinguished from that plant by the lack of either sessile or stipitate glands on the bracts of its inflorescence and by its smaller seeds. The specimens distributed by Captain Smith have uniformly been named *Tragia nepetaefolia*, which plant, indeed, *C. tragioides* closely resembles in general appearance.

***Caperonia pubescens* Blake, sp. nov.**

Annual, 35 to 65 cm. high, simple or branched at base, erect or sometimes creeping and rooting at base; stem slender, densely spreading-hispid-pilose and setose-hispid, many of the hairs thickened and glandular at tip; leaves alternate; stipules linear-subulate, hispid-pilose, persistent, 3.5 mm. long; petioles 4 mm. long or less, densely pubescent like the stem; blades of lower leaves oblong to oval-oblong, 2 to 4 cm. long, 1.2 to 1.5 cm. wide, obtuse, those of the middle and upper leaves linear-lanceolate to narrowly oblong-lanceolate, 4.7 to 6 cm. long, 8 to 14 mm. wide, acute to acuminate, rounded at base, serrulate throughout with 20 to 25 pairs of acute teeth, deep green and rather sparsely hispid-pilose with simple hairs above, paler and more densely hispid-pilose chiefly along the veins beneath, the upper with 12 to 16 pairs of veins; racemes axillary, longer or the uppermost shorter than the leaves, hispid-pilose with mostly gland-tipped hairs, the peduncle about 4 cm. long, the rachis about as long; pistillate flowers solitary at base of raceme, on pedicels about 7 mm. long; staminate flowers separated by about 1 cm. from the pistillate, crowded above, on pedicels 1 mm. long; bracts triangular, persistent, hispid-pubescent, 0.8 mm. long; sepals of pistillate flower unequal, 3 larger, 2 smaller, united below, oblong to obovate-oblong, obtusish, slightly accrescent, rather sparsely pilose-setose with gland-tipped hairs, the larger 3 to 3.5 mm. long; petals not seen; ovary densely muricate, hispid-pilose and more sparsely pilose-setose; styles laciniate-parted into about 5 lobes; calyx of staminate flower 2.3 mm. long, hispid-pilose and more sparsely glandular-hispid-setose, unequally 5-lobed about to middle, the free lobes lanceolate to triangular-ovate, acute; petals 5, cuneate to cuneate-obovate, truncate to emarginate, white, glabrous, unequal, 3 larger, 2.8 mm. long, 2 smaller, about 2.3 mm. long; staminal column truncate-apiculate, glabrous; anthers in two whorls of 5, the lower with short filaments, the upper with long filaments; capsule subglobose, about 4 mm. in diameter, hispid-pilose and more sparsely glandular-hispid-setose; seeds globose, grayish, 2 mm. in diameter, finely punctulate.

Type in the U. S. National Herbarium, no. 989603, collected in an open grassy plain at Cristina, Department of Izabal, Guatemala, May 22, 1919, by S. F. Blake (no. 7574). Also collected in essentially the same locality by H. Pittier on June 12, 1905 (no. 383).

This species is well distinguished by its dense pubescence. Unfortunately no young pistillate flowers are present, so that the presence or absence of petals in them cannot be determined.

***Dalechampia molliuscula* Blake, sp. nov.**

Twining; stem slender, branched, dull-pilose with loosely matted hairs, glabrescent; leaves alternate, trifoliolate; stipules subulate, herbaceous, deciduous, 2.5 to 4 mm. long; petiole dull-subtomentose-pilose, 6 to 15 mm. long; stipules subulate, 1.5 mm. long; leaflets abruptly contracted into a petiolule-like base about 1 mm. long, the lateral blades obliquely ovate, 3.5 to 6.5 cm. long, 1.3 to 3.3 cm. wide, acute or acuminate, truncate-rounded on lower side at base, oblique on the upper, crenate-serrulate with blunt depressed teeth, pergamentaceous, deep green above and sparsely pilosulous, densely so along the costa, glabrate, beneath duller green and rather densely dull-pilosulous with spreading hairs

especially along the veins, prominulous-reticulate; terminal leaflet oval or elliptic, acute to acuminate, acute at base, 5 to 8 cm. long, 1.8 to 3.8 cm. wide; peduncles solitary in the axils, about 1 cm. long; bracts of the involucre sub-orbicular-ovate, in fruit 2 cm. long, 2.5 cm. wide, 3-lobed about to middle with the middle lobe smallest, 5-nerved, sessile, pubescent like the leaves; calyx of pistillate flowers about 8 mm. long in fruit, the 12 sepals linear, laciniate-pinnate above, pilose-spinose; capsule 9 mm. wide, sparsely pilose-spinose; style column linear, slightly dilated and excavate at tip, persistent, sparsely pilose-spinose, about 7 mm. long; seeds subglobose, about 3 mm. long, dull grayish, marked with about 5 lighter lines.

Type in the U. S. National Herbarium, no. 989631, collected on edge of thicket at Quebradas, Department of Izabal, Guatemala, May 20, 1919, by S. F. Blake (no. 7547).

Related to *Dalechampia triphylla* Lam., but to be separated by its shorter and comparatively broader leaflets, these densely soft-pubescent beneath.

***Manihot gualanensis* Blake, sp. nov.**

Shrub 4 meters high; stem stout, green, glabrous; leaves alternate; stipules deciduous, not seen; petioles stout, striatulate, glabrous, 20 to 23 cm. long; blades orbicular in outline, 24 cm. long (from tip of basal lobes to apex), 25 to 29 cm. wide, thin-papyraceous, 9-lobed to within about 2 cm. of base, the lobes obovate to rhombic-obovate, broadest above the middle, the middle lobe and sometimes one or two of the lateral ones somewhat abruptly repand-dilated above the middle, acute and cirrhous-tipped, entire or rarely obscurely repand-lobed above, glabrous and dark-green above, glaucous with a microscopic pulverulence beneath, the lateral veins about 9 to 13 pairs, prominulous beneath, the secondaries few and slightly prominulous or obscure, the middle and upper lobes 11 to 16.5 cm. long, 4.5 to 6.5 cm. wide, the lowest pair much reduced, about 4.5 cm. long, 1.5 cm. wide; panicles several in the axils, 11 cm. long, many-flowered, glabrous, pistillate below, staminate above, the flowers nodding; bracts linear-subulate, entire, glaucous, 2 to 6 mm. long; pedicels 1 to 4 mm. long; pistillate calyx greenish, glaucous, 12 mm. long, the 5 sepals lance-oblong, obtuse, 3-nerved, 4 mm. wide; disk fleshy, entire, 1 mm. high; pistil 6 mm. long; ovary subglobose, glabrous; styles 3, shortly united at base, much lobed and lobulate; staminate calyx (not quite mature) 7 mm. long, glabrous, glaucous, in bud subglobose, the 5 sepals oblong, obtuse, 3-nerved, 3 mm. wide; stamens 9, glabrous; disk depressed, fleshy, 9-lobed; ovary rudiment obsolete.

Type in the U. S. National Herbarium, no. 989599, collected on edge of woods, Gualán, Department of Zacapa, Guatemala, May 26, 1919, by S. F. Blake (no. 7688).

Manihot gualanensis seems from description to be most closely related to *M. rhomboidea* Muell. Arg., of Mexico, but it differs in its deciduous stipules and its 9-lobed leaves, as well as its smaller staminate calyx. Flowers occur in the intermediate part of the panicle with all or nearly all the stamens abortive, a large 10-lobed disk, and a definite ovary rudiment.

***Euphorbia stenomeris* Blake, sp. nov.**

Erect, very slender annual, simple or branched from the base, 12 to 32 cm. high; stem greenish, glabrous, the branches short, filiform; leaves opposite; stipules united, glandular-denticulate, about 0.4 mm. long; petioles stoutish, 1 mm. long; blades linear, 7 to 23 mm. long, 1 to 1.8 mm. wide or the lowest 2.5 mm. wide, often falcate, obtuse or acute, at base unequal, obliquely rounded or subcordate, obscurely or distinctly mucronulate-denticulate above or nearly throughout, thickish, glabrous, above deep green, beneath glaucescent, triplinerved, the lateral nerves reaching to about the middle; cymes few-flowered,

terminating branches and branchlets; bracts minute; pedicels about 0.6 mm. long; involucre glabrous, campanulate, about 0.8 mm. long; glands 5, small, cup-shaped, 4 of them with white thickish suborbicular entire appendages about 0.6 mm. long; styles 3, oblong, equaling the ovary, bifid at apex; capsule glabrous, greenish, with rounded angles, 1.3 mm. long; seeds oblong, 0.9 mm. long, 0.5 mm. wide, blackish, bluntly quadrangular, microscopically papillose, the faces with about three low broken transverse ridges.

Type in the U. S. National Herbarium, no. 989628, collected on open hillsides wooded with pine, along trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7776).

This species belongs in the section *Anisophyllum*, generally treated as a genus (*Chamaesyce*) by American authors, although its structural characters are of the slightest. It is related to *E. pulchella* H. B. K., but apparently differs in its strictly linear, thickish, serrulate leaves. It may prove to be identical with that species, but in any case the name *E. pulchella* is preoccupied and so unavailable.

CLUSIACEÆ.

Clusia utilis Blake, sp. nov.

PLATE 4.

Shrub 6 meters high; branches subterete, stoutish, gray-barked, glabrous; leaves opposite; petioles sulcate above, glabrous, 6 to 10 mm. long; blades cuneate-obovate, 5.5 to 8 cm. long, 2.7 to 4.5 cm. wide, coriaceous-pergamentaceous, obtuse or rounded, cuneate from near the middle to the base, entire, glabrous, deep dull green on both sides, scarcely paler beneath, papillose on both sides when dry, the primary veins about 15 to 17 pairs, straight, parallel, slightly prominulous when dry, the surface between them rather obscurely striate; pistillate panicles terminating branches and branchlets, about 5 to 8-flowered, glabrous, the peduncle about 6 mm. long, the branches wide-spreading, the pedicels stoutish, slightly clavate, 3 to 6 mm. long, the bracts deltoid, connate, obtusish, 1.5 mm. long; bracts at base of calyx 2, rotund, 2 to 2.5 mm. long, coriaceous; sepals 4, the outer pair suborbicular, broadly rounded, 3.5 to 4.5 mm. long, 6 mm. wide, the inner pair similar but larger, about 7 mm. long, 9.5 mm. wide; petals 6, broadly wedge-obovate, rosy white, about 1 cm. long and wide, broadly rounded; ovary surrounded at base by a dense glutinous collar of connate staminodes 1.5 to 2.5 mm. high, bearing scattered, sessile, vertically dehiscing, 2-celled anthers; ovary 5 mm. high, subglobose, 6 or 7-celled; stigma sessile, fleshy, as broad as the ovary, bluntly 6 or 7-lobed; fruit subglobose, 12 to 15 mm. long, green tinged with maroon, surrounded at base by the persistent calyx; seeds about 6 in each cell, horizontal-ascending, sub-biseriate, pale grayish, about 3.5 mm. long, surrounded by the orange aril.

Type in the U. S. National Herbarium, no. 989595, collected on shore of Lake Izabal, Izabal, Department of Izabal, Guatemala, June 2, 1919, by S. F. Blake (no. 7859).

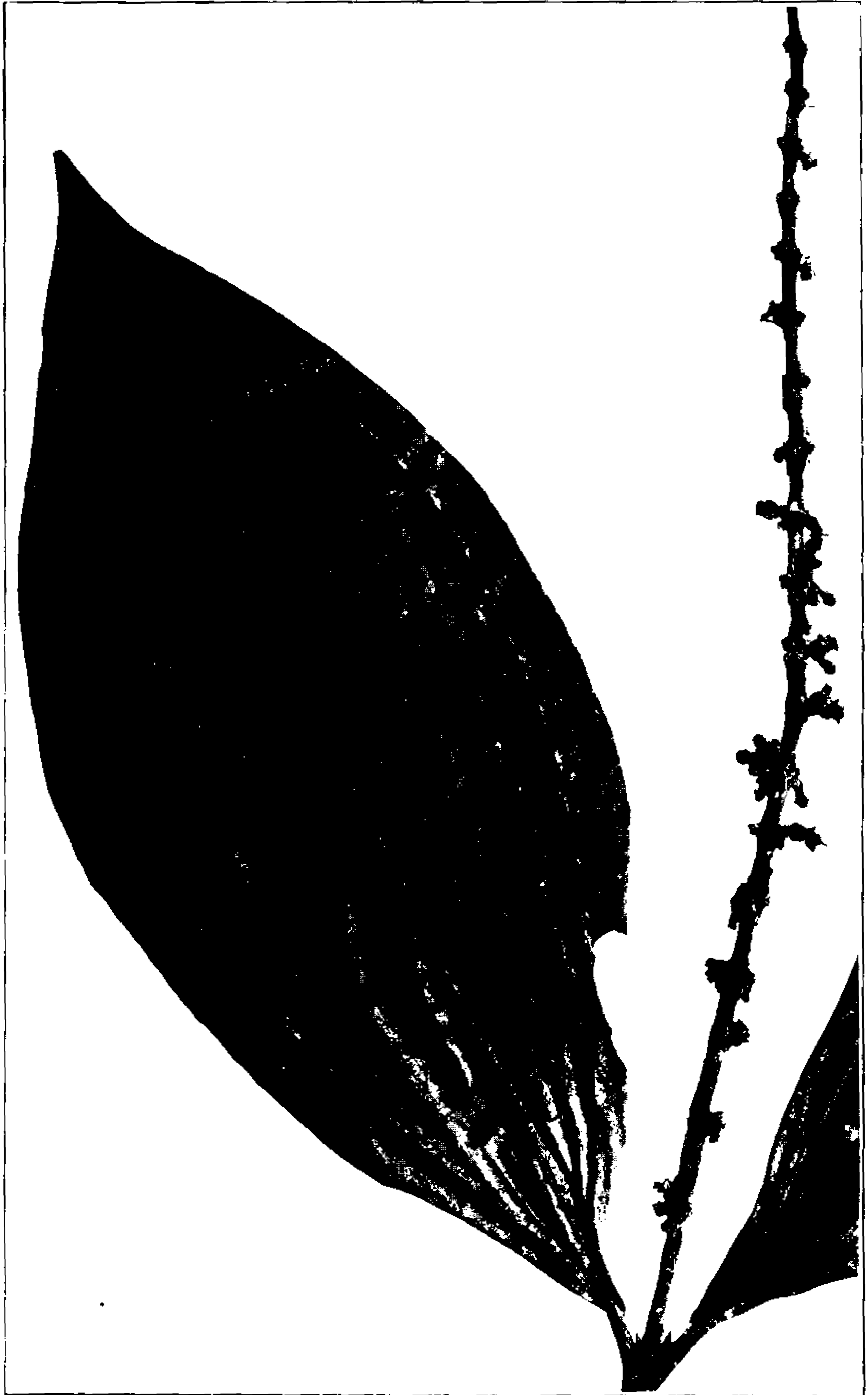
Owing to the lack of staminate flowers, it is difficult to place this species definitely. From description it seems to be close to *Clusia parvicapsula* Vesque, to which Vesque assigns a range from Córdoba, Mexico, to Colombia and Peru. From this species *C. utilis* differs in its subterete branches, its smaller leaves on shorter petioles and with rather more numerous lateral veins, and its much shorter crown of fused staminodes, which bears rather numerous anthers.

Clusia utilis is known at Izabal as "qulebramuela," in reference to the fact that the buffy yellow juice of the fruit is used on cotton for toothache. The young fruit, cut across, is used to stamp clothes, forming a wheel-shaped design, brown at first and changing to blackish on washing, which is said to be permanent.

EXPLANATION OF PLATE 4.—*Clusia utilis*, from the type specimen. Natural size.



CLUSIA UTILIS BLAKE.



MICONIA ANGUSTISPICA BLAKE.

MELASTOMATACEAE.

Miconia angustispica Blake, sp. nov.

PLATE 5.

Small tree; branches compressed, subangulate, glabrate, grayish-barked; branchlets compressed, hexangular, densely stellate-pilose with depressed sordid hairs; leaves opposite; petioles stout, 4 mm. long, densely depressed-stellate-pilose; blades oval-elliptic, 16 to 20.5 cm. long, 6 to 8 cm. wide, shortly falcate-acuminate, at base long-cuneate, broadest near the middle, chartaceous, entire, above dull green, obscurely and sparsely tuberculate but smooth, beneath scarcely paler green, along the venation densely stellate-pilose, on surface sparsely so, 3-ribbed (with an additional obscure marginal vein), the lateral veins about 27 pairs, prominulous, the secondaries less prominulous; peduncle (1.8 cm. long) and the straight rachis of the spikelike panicle (19.5 cm. long, 1.3 cm. thick) densely stellate-pilose with sordid-rufescent hairs; flowers verticillate, white, sessile; calyx urceolate, 4 mm. long, truncate, minutely 5-toothed; petals (in bud) suborbicular, obtuse, externally puberulous; stamens 10; filaments glabrous, 2 mm. long; anthers lance-subulate, slender, 3 mm. long, with a short obtuse dorsal basal appendage; ovary 5-celled; style cylindrical, straight.

Type in the U. S. National Herbarium, no. 989618, collected in clear forests at Quebradas, Department of Izabal, Guatemala, May 19 to 22, 1919, by H. Pittier (no. 8596).

This species belongs in the group *Haplostachyae* of *Eumiconia* and is distinguished among the species of that group by its oval-elliptic 3-ribbed short-petioled leaves.

EXPLANATION OF PLATE 5.—*Miconia angustispica*, from the type specimen. Natural size.

Prosanerpis Blake, gen. nov.

Corticulous shrubs, climbing by nodal and internodal roots and rootlets; leaves large, membranaceous, dentate or denticulate, ovate, those of the pairs very unequal; flowers small, in small axillary and extra-axillary dichotomous fasciculate cymes; bractlets minute; calyx tube subglobose, abruptly contracted above the ovary into a short neck or the latter obsolete, the limb 4 or rarely 5-lobed, the inner lobes deltoid, acutish, adnate for most of length to the outer lobes, these oblong or rhombic-oblong, acute, hispid-spinose on margin, three to five times as long as the inner; petals 4 or rarely 5, quadrate-oblong, subtruncate, slightly retuse, about half as long as calyx lobes; stamens 8 (or 10), strongly inflexed (in young flower), glabrous, the linear filaments equaling the ellipsoid-oblong obtuse unappendaged anthers; ovary thin-walled, free from calyx tube except at apex, globose, 4-celled, the placentae extending into the middle of the cells and 2-winged at tip; style cylindrical, straight, longer than ovary, equaling the petals, the stigma subcapitate, slightly broader; fruit a dryish berry; seeds innumerable, tiny, cuneate-oblong, straight.

Type species, *Prosanerpis trichocalyx* Blake.

This genus, possessing a habit decidedly unusual in its family, belongs in the Miconieae next to *Henriettea* DC., from which it differs in its obtuse, not beaked anthers, and its membranaceous denticulate leaves. An undescribed species occurs in Panama.

Prosanerpis trichocalyx Blake, sp. nov.

Stem woody, terete, about 4 mm. thick, climbing up tree trunks to a height of 2 meters or more by means of numerous chiefly adventitious roots and rootlets, closely appressed, sparsely branched, in youth fuscous and rather densely spreading-hispid with sordid hairs, in age glabrate and brownish; leaves few, opposite, those of the pairs very unequal; petioles of the larger

leaves slender, striate, 9 cm. long, rather densely hispid with loosely spreading sordid hairs; blades ovate, about 19 cm. long, 11 cm. wide, acuminate, broadly rounded at base, finely crenulate-denticulate throughout, membranaceous, 7-nerved and prominulous-reticulate beneath, above deep green, evenly but not densely pilose-hispid and ciliate with ascending, scarcely tuberculate-based, dull white hairs, beneath loosely spreading-pilose on all the veins and veinlets; cymes few, in axillary and extra-axillary fascicles, dichotomous, about 12 mm. long, few-flowered, densely puberulous with subglandular hairs; bractlets triangular, acute, denticulate, cuspidulate, subherbaceous, 0.8 mm. long or less; pedicels 2 mm. long or less, densely subglandular-puberulous; body of calyx tube in flower 2 mm. long, subglobose, densely spreading-hispid and subglandular-puberulous, in fruit 3 mm. long and thick, abruptly contracted into a free tubular-campanulate apex 1 mm. long; outer calyx lobes oblong or rhombic-oblong, acute, sometimes with two lobes near middle, hispid-spinose-ciliate, 3 to 4 mm. long, spreading in fruit; petals in young flower 1.2 mm. long, 0.9 mm. wide, oblong-quadrate, subtruncate, slightly retuse, glabrous, probably whitish or pinkish; filaments 1 mm. long, equaling the anthers; seeds 0.5 mm. long, white and yellowish.

Type in the U. S. National Herbarium, no. 989630, collected on tree trunks in tropical forest, Quebrada Mojanales, Department of Copán, Honduras, May 16, 1919, by S. F. Blake (no. 7476).

MYRSINACEAE.

Stylogyne guatemalensis Blake, sp. nov.

Shrub; branches stout, terete, fuscous becoming grayish brown, glabrous; leaves alternate; petioles stout, sulcate above, glabrous, unmarginated, 5 to 12 mm. long; blades oval or slightly obovate-oval, 6 to 12 cm. long, 3 to 6 cm. wide, very shortly apiculate-acuminate, at base cuneate, entire, coriaceous, deep dull green above, obscurely squamulate, beneath paler and duller green, evenly but rather sparsely white-papillose, glabrous on both sides, the chief veins about 28 to 30 pairs, prominulous beneath, curved-anastomosing near the margin, somewhat anastomosing-reticulate; panicles pyramidal, subsessile, terminating branchlets, 3.5 to 4.5 cm. long and as wide or slightly wider, glabrous, the flowers unbellate-clustered toward the tips of the branchlets of the panicle, on pedicels 2 to 3.5 mm. long; sepals 5, oval-oblong, 1.8 mm. long, rounded, free, dorsally elevated-punctate, coriaceous-herbaceous, with narrow paler margin, glabrous, entire; petals 5, oblong, 4.8 mm. long, united for one-third their length, obtuse or rounded, pinkish white, marked with about 5 rows of glandular dots and lines, glabrous, imbricate, dextrorsely covering one another; stamens 5, inserted about 0.5 mm. above base of corolla, the subulate glabrous filaments 1 mm. long, the oblong anthers 1.7 mm. long, basifixed, dehiscent throughout their length, not punctate; ovary ovoid, 1.2 mm. long, glabrous; ovules 3, in a single row; style slender, glabrous, 2 mm. long; stigma small, subcapitellate.

Type in the U. S. National Herbarium, no. 989596, collected in light forest at Quebradas, Department of Izabal, Guatemala, May 19 to 22, 1919, by H. Pittier (no. 8624).

From the only other species known in Central America north of the Isthmus of Panama, *Stylogyne laevis* (Oerst.) Mez, *S. guatemalensis* is distinguished by its shorter pedicels, its oblong-oval, entire or subentire sepals, and its rounded symmetrical petals.

LOGANIACEAE.

Plocosperma anomalum Blake, sp. nov.

Shrub 2 to 5 meters high, erectish-branched, the stem and branches (1.2 to 3 mm. thick) in youth flattened, spreading-puberulous, in age glabrous, subterete, irregularly ribbed, gray-barked; leaves opposite, those on the older branches chiefly borne in pairs on axillary branchlets only 1 mm. long; petioles spreading-puberulous, 1 to 1.5 mm. long; blades elliptic-oblong or oval-oblong, 1.5 to 4 cm. long, 0.8 to 2 cm. wide, emarginulate, at base rounded and slightly unequal, entire, slightly revolute, chartaceous, above deep green, somewhat shining, finely papillose-tuberculate especially near the costa, papillose-hispidulous-ciliolate, beneath slightly paler green, in youth evenly but sparsely spreading-pilosulous, at maturity glabrous or very sparsely pilosulous, the costa immersed above, prominent beneath, the chief veins 2 or 3 pairs, leaving the costa below the middle of the leaf and prolonged nearly or quite to apex, like the secondary veins conspicuous and subprominulous above, less conspicuous beneath; flowers solitary or in pairs at tips of branches and short branchlets, the peduncle 1.5 mm. long or usually wanting, the spreading-puberulous pedicels 6 to (in fruit) 13 mm. long, erect or in fruit more or less decurved; calyx 3 mm. long, 6-parted, the sepals subequal or one slightly the longest, lanceolate or lance-oblong, narrowed to an acutish apex, herbaceous, hispidulous-ciliate and more or less glandular and hispidulous dorsally, about 0.8 mm. wide; corolla purplish magenta, with campanulate-funnelform tube (6 mm. long), and spreading limb about 18 mm. wide, the tube sparsely pubescent on the nerves above, the limb ciliate, the 6 rotund lobes about 7 mm. long, 6 mm. wide; stamens 6, the filaments slender, glabrous, 4 mm. long, attached 4 mm. above base of corolla and decurrent to its base, the oval, deeply cordate, obtuse, dorsifixed anthers 1.3 mm. long; ovary slenderly ovoid, contracted above the short sterile crenulate base and then expanded, about 3 mm. long, 1-celled, 4-ovuled, the ovules approximate at base of ovary in decussate pairs, roundish, erectish, parietally affixed on very short funicles; style about 6.5 mm. long, glabrous, 4-fid at apex, the lobes about 2 mm. long, terminated by clavate papillose stigmas; fruit fusiform-linear, 8.5 to 9 cm. long, about 2 mm. thick near the middle, glabrous, striate-ribbed, apiculate; seeds immature.

Type in the U. S. National Herbarium, no. 989586, collected on dry hillside, Gualán, Department of Zacapa, Guatemala, May 26, 1919, by S. F. Blake (no. 7693).

ADDITIONAL SPECIMEN EXAMINED:

GUATEMALA: Gualán, June 15, 1909, *Deam* 6270.

This interesting genus was based on *Plocosperma buxifolium* Benth.,⁶ described without definite locality from Guatemala, where it was collected by Skinner. It has apparently not been collected since. The only other species of the genus hitherto known, *P. microphyllum* Baill., has had an unfortunate history. It was described at length by Baillon in 1889,⁷ from the "collections mexicales de Galeotti," but no name was assigned to it. Later it was mentioned by Solereder,⁸ without explicit reference to Baillon's description, in the following terms: "*Pl. microphyllum* Baill. MS., in Mexiko, ist von der ersten Art durch bedeutend kleinere B. und Bl. verschieden." By error, this name is cited in the first supplement to the Index Kewensis as *P. macrophyllum*. This species is of special interest, since it resembles *P. anomalum* in the ar-

⁶ Hook. Icon. Pl. 12: 82. pl. 1195. 1876.

⁷ Bull. Soc. Linn. Paris 1: 780. 1889.

⁸ In Engl. & Prantl, Pflanzenfam. 4²: 50. 1895.

rangement of its ovules. As the publication in which it was described is not easily accessible, the original description may be summarized here.—*P. microphyllum* Baill. Leaves similar to those of *P. buxifolium*, but only 1 cm. long, notched at each end, few-nerved, short-petioled; flowers subsessile, very small, "un peu plus grandes que les feuilles," similar to those of *P. buxifolium*; ovary 1-celled, with two linear parietal placentae; ovules all basilar and erect, usually only one at the base of each placenta, but sometimes two.

Portions of Deam's plant have been compared at Kew with Bentham's type, through the kindness of Dr. Otto Stapf, who reports that they represent a different species, that of Bentham having leaves very distinctly puberulous below and not nervose or reticulate, the flowers being much larger, and the ovules, as figured in Hooker's *Icones*, being in superimposed pairs, the lower pair erect, the upper pendulous. The flowers of *P. buxifolium*, moreover, are pentamerous. From *P. microphyllum* Baill. the new species differs in its larger leaves and larger longer-pedicellate hexamerous flowers.

APOCYNACEAE.

Tabernaemontana amblyblasta Blake, sp. nov.

PLATE 6.

Shrub 5 meters high; branches subterete, glabrous, the younger green, the older grayish-barked; leaves opposite; petioles glabrous, sulcate above, 6 to 17 mm. long; blades obovate-oblong to oval, elliptic-oblong, or rarely obovate, 7 to 21 cm. long, 3.5 to 7.5 cm. wide, abruptly short-pointed with the tip obtuse, at base cuneate to rounded-cuneate, entire but somewhat repand, deep green and more or less shining above, paler green beneath, glabrous, the costa impressed above, prominent beneath, the 11 to 13 pairs of primary veins prominulous beneath; panicles axillary, 10 to 18 cm. long (including the 2.5 to 8 cm. long peduncle), dichotomously divided, 7 to 14 cm. wide, glabrous; pedicels slender, 7 to 20 mm. long; buds obtuse, 8 to 11 mm. long; sepals 5, broadly ovate, broadly rounded at apex, 2 mm. long, thickish, with thinner narrow margins, each with a 4 to 8-cleft gland at base; corolla tube 9 mm. long, the limb cream-colored or creamy yellowish, 12 to 17 mm. wide, the tube broadest near the base, slightly widened above the middle at the insertion of the stamens, bearing 5 callosities at the apex within alternating with the stamens, the segments of the limb 5, obliquely oval-oblong, 8.5 mm. long, 4 mm. wide, rounded at apex, entire; stamens sessile at a point 5.5 mm. above the base of the corolla, the lanceolate-acuminate bluish green anthers 2.5 mm. long, included; fruit said to be yellow or green.

Type in the U. S. National Herbarium, no. 989598, collected on edge of woods at Cristina, Department of Izabal, Guatemala, May 23, 1919, by S. F. Blake (no. 7636).

OTHER SPECIMENS EXAMINED:

GUATEMALA: Edge of woods, Los Amates, Department of Izabal, May 29, 1919, *Blake* 7732. Shore of Lake Izabal, Izabal, Department of Izabal, June 2, 1919, *Blake* 7853.

HONDURAS: Woods, La Florida to Hacienda Espíritu Santo, Department of Copán, Honduras, May 14, 1919, *Blake* 7415.

This species is most closely related to *Tabernaemontana longipes* Donn. Smith, which has pedicels 4 to 8 mm. long, acute buds, and a corolla 20 mm. wide, its lobes obliquely ovate, strongly excised on one side above, and inequilateral.

This species, like so many others of its group, bears the vernacular names "chapupo," "cojón," "cojón de gato," and "cojón de mico." At Izabal, and doubtless elsewhere, the juice is mixed with chicle for local use; it is also put on the flesh, with a piece of tobacco leaf, to draw out carnivorous insect larvae.

EXPLANATION OF PLATE 6.—*Tabernaemontana amblyblasta*, from *Blake* 7853. Natural size.



TABERNAEMONTANA AMBLYBLASTA BLAKE.

ASCLEPIADACEAE.

Metastelma collinum Blake, sp. nov.

Root thickened, subtuberous, 2 to 3 cm. long, 5 to 10 mm. thick; stems 3 to 5, about 0.5 meter long, twining or erectish, very slender, pale green, recurved-pilosulous in lines; leaves opposite, about equaling the internodes; petioles ciliolate, 1 to 2.5 mm. long; blades linear, 13 to 33 mm. long, 1.2 to 2.2 mm. wide, often falcate, acute, rounded at base, more or less revolute, subcoriaceous, 1-nerved, pale green, sparsely ciliate, otherwise essentially glabrous; cymules axillary, about 4-flowered, incurved-puberulous, the peduncle and pedicels 1 to 2 mm. long; calyx 0.8 mm. long, the 5 sepals lance-triangular, obtuse, glabrous or rarely with a few cilia; corolla campanulate, whitish, 3 mm. long, the petals triangular-ovate, 1.2 mm. wide, united for about one-fourth their length, thickish, narrowly whitish-margined, especially on one side, and obliquely emarginulate at tip, glabrous outside, densely pilose within above the base, toward apex and inside margin densely papillose-pilosulous; segments of corona narrowly spatulate, about 1.8 mm. long, 0.3 mm. wide, obtuse, considerably exceeding the pistil.

Type in the U. S. National Herbarium, no. 989629, collected on open rocky hillsides thinly wooded with pine, along trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7793).

Metastelma collinum is most nearly related to *M. chiapense* A. Gray, but differs from the description of that species in having the stem pilosulous in lines, the leaves all much longer than the cymules, the petals densely pilose within below, and the corona segments considerably longer than the pistil.

BORAGINACEAE.

Cordia macrantha Blake, sp. nov.

Tree 10 meters high; branches gray-barked, glabrous, lenticellate; leaves alternate; petioles glabrous, 7 to 30 mm. long, slender, naked, weakly sulcate above; blades elliptic-oblong or slightly obovate to oval, 7.5 to 15.5 cm. long, 4 to 8 cm. wide, obtuse or rounded, sometimes emarginate, at base rounded-cuneate or cuneate, entire but slightly repand, pergamentaceous, glabrous, above deep green, prominulous-reticulate, beneath paler green, prominulous-reticulate, the lateral veins 5 to 8 pairs, curved-anastomosing at their tips; panicles terminal, 7 to 11 cm. long (including the 2 cm. long peduncle), 9 to 12.5 cm. wide, the branches wide-spreading, floriferous at their tips and there pubescent and glandular; pedicels 2 to 3 mm. long; calyx 14 mm. long, oblong, glabrous, multi-striatulate, obliquely split at apex and there slightly beaked on one side; corolla marcescent, slightly pubescent within at base of filaments, the tube about 2.2 cm. long, pentagonal, the limb about 4.2 cm. wide, the 5 lobes triangular-ovate, about 1.5 cm. long, 1.1 cm. wide at base, obtuse, impressed-veined; stamens 5, inserted at apex of the proper tube of corolla, the filaments about 10 mm. long, pubescent especially at base; style very sparsely pubescent, 12 mm. long, twice bifid, the stigmas capitate; ovary glabrous, oblong, about 10 mm. long.

Type in the U. S. National Herbarium, no. 989592, collected on dry hillside at Quebradas, Department of Izabal, Guatemala, May 18, 1919, by S. F. Blake (no. 7498).

Although the material on which this species is based is scanty, consisting of two branchlets bearing old panicles and two old and imperfect flowers, it is nevertheless sufficient to show the distinctness of the species. *C. macrantha* belongs in the section *Varronia*, as the genus is divided by Gürke, and may be distinguished specifically by its very large marcescent corolla.

SOLANACEAE.

***Physalis parviculea* Blake, sp. nov.**

Much branched spreading annual, the branches up to 30 cm. long, slender, striate-angled, somewhat zigzag, whitish, obscurely puberulous in lines on the younger parts, otherwise glabrous; leaves alternate or paired, unequal; petioles slender, unmarginated, sparsely hispid-pilose, 2 to 12 mm. long; blades ovate, the larger 11 to 15 mm. long, 7 to 11 mm. wide, obtusish, at base unequal and truncate-rounded or slightly cordate, thin, entire, light green on both sides, above essentially glabrous except for the hispidulous-puberulous margin, beneath sparsely hispidulous with longer hairs chiefly along the 4 or 5 pairs of lateral veins; flowers solitary, axillary, nodding or deflexed, the pedicels ascending-hispidulous, 1.5 to 2 mm. long in flower, 3 to 4 mm. in fruit; calyx in flower campanulate, pentagonal, 3 to 3.5 mm. long, 4 mm. wide, hispid-pilose below, 10-nerved, 5-toothed, the teeth depressed-deltoid, obtuse, ciliolate, 0.8 mm. high; corolla yellow with maroon eye, 4 mm. long, 3 mm. wide, shallowly 5-lobed with deltoid acutish teeth, ciliolate, pilose-barbate within near middle in 5 spots alternating with the stamens; stamens 5, inserted slightly above base of corolla, the somewhat clavate filaments 2 mm. long, villous-barbate within for nearly their whole length, the oval bluish anthers 1 mm. long; style glabrous, 3.5 mm. long; fruiting calyx subglobose-ovoid, obtuse, closed at apex, slightly sunken at the base, 13 to 14 mm. long, 12 to 14 mm. thick, equally 10-ribbed, thin, reticulate-veined, greenish white, sparsely curved-hispidulous on the ribs; berry globose, many-seeded, about 7 mm. in diameter.

Type in the U. S. National Herbarium, no. 989588, collected in dry river bed at Los Amates, Department of Izabal, Guatemala, May 9, 1919, by S. F. Blake (no. 7318).

This species is most closely related to *Physalis lagascae glabrescens* O. E. Schulz and *P. micrantha* Link. From the former it differs in its smaller calyx, small corolla, this pilose-barbate within near base and maroon-eyed, and smaller stamens; from the latter in its larger flowering calyx and equally 10-ribbed fruiting calyx.

***Physalis pentagona* Blake, sp. nov.**

Spreading annual, the stoutish, sparsely branched, zigzag stem about 30 cm. long, viscid and densely pilosulous with several-celled, straight or curved, spreading hairs, dull green; leaves alternate or paired; petioles slender, unmarginated, pilosulous and viscid, 1 to 2 cm. long; blades ovate, 2.3 to 4 cm. long, 1.5 to 2.5 cm. wide, acute or subacuminate or obtusish, at base very unequal, cuneate to broadly rounded, entire, rather thin, dull green, densely puberulous along costa and the 4 or 5 pairs of veins above, beneath paler, evenly and rather densely pilosulous on surface, densely so on the veins; flowers solitary, axillary, the densely griseous-pilosulous pedicels 5 mm. long in flower, 8 to 10 mm. in fruit; calyx in flower 7 mm. long, broadest at the deeply sunken base, gradually narrowed toward the apex, densely griseous-pilosulous, the 5 lance-subulate acuminate teeth 2 mm. long; corolla yellow, 7.5 mm. long, about 5 mm. wide, puberulous outside and ciliolate, essentially glabrous within, the 5 teeth triangular, acutish, 1 mm. long; stamens 5, the flattened, sparsely pilose filaments 2.7 mm. long, the oblong anthers 2.5 mm. long; style 4.5 mm. long; fruiting calyx subglobose-ovoid, 2.9 cm. long, 2.5 cm. thick, strongly 5-angled with aliform angles, abruptly short-pointed with acute tip, closed at apex, sunken at base, rather weakly 1-ribbed between the angles, reticulate-venulose, firm-herbaceous, dull pale greenish, rather densely spreading-puberulous, the terminal teeth about 3 mm. long; berry globose, about 15 mm. in diameter.

Type in the U. S. National Herbarium, no. 989589, collected in dry river bed at Los Amates, Department of Izabel, Guatemala, May 9, 1919, by S. F. Blake (no. 7313).

Physalis pentagona differs from *P. pubescens* L., its nearest ally, in its shorter calyx teeth, longer fruiting pedicels, broader, abruptly short-pointed fruiting calyx, and much larger berry.

Solanum calochromum Blake, sp. nov.

Scandent shrub, glabrous throughout; branches stoutish, somewhat zigzag, subterete, glabrous, in youth fuscous-green and lucid, in age gray-barked, the internodes 2.5 to 5 cm. long; leaves paired, very unequal, the larger on petioles 1 to 1.5 cm. long, the blades oblong-elliptic, 13 to 21 cm. long, 4 to 7 cm. wide, acuminate or abruptly short-acuminate, at base cuneate and often unequal, rather thin-coriaceous, entire but usually slightly repand, glabrous, above deep green, shining, beneath scarcely paler green, less shining, the chief lateral veins about 5 pairs, like the costa prominent, especially beneath, curved-anastomosing toward margin, the secondaries loosely reticulate, prominulous, especially beneath; smaller leaves of the pairs obovate-oval or suborbicular, short-petioled, 4.5 to 7.5 cm. long, 2.2 to 5.2 cm. wide, usually short-pointed; flowers about 6, in axillary umbelliform racemes, the axis 3 to 6 mm. long, the slender pedicels 12 to 17 mm. long, glabrous, slightly thickened above; calyx cup or saucer-shaped, truncate, glabrous, 3.5 mm. long, 5 to 7 mm. wide, thickish, with thinner margin; corolla bright purple, rotate, 11 mm. long, about 16 mm. wide, the 5 petals united for about one-fourth their length, elliptic-lanceolate, obtuse, 3 to 5-nerved, hook-appendaged at apex within; stamens 5, the flattened filaments 1 mm. long, inserted about 1 mm. above base of corolla, the elliptic-oblong obtuse equal anthers coherent, 6 mm. long, cordate at base, opening by small terminal pores; berry orange, globose, 7 mm. in diameter, many-seeded.

Type in the U. S. National Herbarium, no. 989593, collected on edge of woods, along trail from Hacienda El Limón to El Paraíso, Department of Copán, Honduras, May 12, 1919, by S. F. Blake (no. 7370).

OTHER SPECIMENS EXAMINED:

GUATEMALA: Cubilquitz, Department of Alta Verapaz, altitude 350 meters, May, 1900, *Türckheim* 7637; July, 1907, *Türckheim* II. 59.

Solanum calochromum is related to *S. heteroclitum* Sendtn. and *S. synantherum* Sendtn. The former, however, is described as herbaceous, with corolla 5-fid to middle, calyx subdentate and membranaceous, anthers free, and pedicels 8 mm. long; the latter as with membranaceous leaves, and corolla about an inch wide when flattened out.

Solanum solitarium Blake, sp. nov.

Erectish herb, about 3 meters high; stem greenish, sparsely branched, sparsely incurved-pubescent chiefly in lines; leaves mostly paired, unequal or subequal; petioles slender, 3 to 15 mm. long, flattened and incurved-pubescent above; blades oval-ovate or elliptic-ovate, 3.5 to 11 cm. long, 2 to 5.5 cm. wide, membranaceous, acuminate and often falcate, at base acutely cuneate, slightly decurrent on the petiole, above deep green, incurved-pubescent along the 4 or 5 pairs of lateral veins, sparsely so on surface or glabrous, beneath scarcely paler green, glabrous or rather sparsely incurved-pubescent chiefly along the veins; flowers solitary in the upper axils; pedicels glabrous or very sparsely pubescent, 2.5 to 3.5 cm. long; calyx tube campanulate, 2.5 mm. long, glabrous or very sparsely pubescent, truncate and thin-margined at apex, the 10 herbaceous, narrowly linear, subulate teeth arising just below its apex, glabrous or very sparsely puberulous, 2.5 to 5 mm. long; corolla white, rotate, glabrous, 14 mm. long, 5-lobed for two-fifths its length, the lobes obtuse or apiculate; stamens

5, equal, glabrous, the filaments linear-subulate, 1.2 mm. long, the oblong obtuse cordate-based anthers 6.5 mm. long, opening by small terminal pores; style slender, equaling the stamens.

Type in the U. S. National Herbarium, no. 989602, collected in a clearing, Rio Mojanales, Department of Izabal, Guatemala, May 17, 1919, by S. F. Blake (no. 7489). Also collected at the same locality, May 10 to 18, 1919, by H. Pittler (no. 8532).

Solanum solitarium belongs in the group *Lobanthes* of the section *Polymeris*, as the genus is arranged by Dunal in the Prodrromus. It is distinguished by the character of its inflorescence and by its flowers.

SCROPHULARIACEAE.

***Russelia flavoviridis* Blake, sp. nov.**

Frutescent, erectish, branched, 1 meter high; stem and branches 6-angled, green, glabrous, 1.5 to 3.5 mm. thick, the internodes 2 to 9 cm. long, marked above with sessile cup-shaped glands; leaves opposite; petioles 1 to 2 mm. long, unmarginated, in youth densely barbate-ciliate with white hairs, glabrescent, connected by a whitish or rufescent-ciliate ring; blades suborbicular or rhombic-suborbicular, 1.7 to 2.7 cm. long, 1.5 to 1.8 cm. wide, acute or obtuse, at base truncate-rounded or rounded, rarely subcordate, crenate-serrate above the base with 5 to 7 pairs of deltoid acute or obtuse teeth, coriaceous, above green, shining, along costa and toward base of the 4 or 5 pairs of veins spreading-pilosulous, otherwise glabrous except for the hispidulous-ciliolate margin, beneath pale and usually somewhat yellowish green, glabrous or very sparsely pubescent along the nerves, prominulous-reticulate on both sides and sparsely dotted with sessile cup-shaped glands; panicles axillary, short, about 2.5 cm. long, about 4 to 10-flowered, dotted with cup-shaped glands, otherwise glabrous; pedicels 2 to 5 mm. long; calyx 3 mm. long, dotted with cup-shaped glands, 5-parted, the lance-ovate segments acuminate; corolla tubular, slightly widened above, 12 mm. long, bright red, glabrous outside, rather sparsely pilose within on the ventral side, except on the limb, with unicellular hairs, the upper lip bifid, 2 mm. long, with rounded lobes, the 3 lower lobes cuneate-quadrate, rounded, 3 mm. long; stamens 4, included, the filaments sparsely papillose-pilose at base, 11.5 and 13 mm. long, the staminode 0.8 mm. long; ovary 1.8 mm. long; style 7 mm. long.

Type in the U. S. National Herbarium, no. 989590, collected on an open rocky hillside thinly wooded with pine, along trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7790).

This species seems to be most nearly allied to *Russelia verticillata* H. B. K., which has 10-angled branches and flowers 16 to 18 mm. long.

BIGNONIACEAE.

***Adenocalymna punctifolium* Blake, sp. nov.**

Vine; stem subterete, slender, striatulate, greenish, densely scurfy-puberulous, subglabrate; branches similar, densely crisp-puberulous and scurfy-papillose with griseous or rufescent hairs; leaves opposite, conjugate, the tendril often deciduous or wanting; petioles pubescent like the branches, 1.5 to 3 cm. long; leaflets 2, the petiolules similarly pubescent, 1 to 2 cm. long; blades oblong-ovate or oval-ovate, rather abruptly short-acuminate, at base unequally cordate, 6.5 to 11 cm. long, 3 to 5.5 cm. wide, chartaceous, above deep green, somewhat shining, sparsely pubescent chiefly along the costa and veins with spreading rufescent hairs, finely prominulous-reticulate, beneath duller green, along costa

and veins sparsely puberulous or short-pilose, densely dotted with depressed saucer-shaped translucent glands; tendril when present simple, shorter than the leaves, pubescent like the petioles; flowers in terminal, sessile, about 4-flowered panicles, the pedicels 10 to 12 mm. long, densely rufescent-puberulous, bearing 2 minute deciduous bractlets above the middle; calyx in bud ellipsoid-ovoid, acute, at maturity campanulate, 10 to 13 mm. long, membranaceous-herbaceous, densely rufescent-puberulent and sparsely dotted toward apex with small, saucer-shaped, pale yellowish glands, split into 2 short lobes, the 5 small proper teeth more or less irregularly cohering in groups; corolla 5 cm. long, the tube and throat yellowish cream color and the limb creamy white, papillose-puberulent outside and on limb within, the tube narrowed above, 1.2 cm. long, the narrowly funnelform throat about 2.6 cm. long, the limb about 1.4 cm. long, the 5 lobes broadly oval to broadly obovate-oval, rounded, those of the upper lip somewhat the longer; fertile stamens 4, inserted at base of throat, the glabrous filaments about 1.2 and 1.8 cm. long, the sparsely pubescent, widely divergent anther cells 2.2 mm. long, the connective tipped with 2 short blunt glandlike processes; staminode recurved, about 4 mm. long; disk thick, ring-form, about 1 mm. long; pistil 3 cm. long, the ovary 3 mm. long, densely lepidote, compressed contrary to the partition, the ovules about 40 in each cell, sub-biseriate on each side of the partition; style glabrous, 2.5 cm. long; stigma 2 mm. long.

Type in the U. S. National Herbarium, no. 989627, collected in bushes at Quebradas, Department of Izabal, Guatemala, May 19 to 22, 1919, by H. Pittier (no. 8570). Also collected at the same locality on May 18, 1919, by S. F. Blake (no. 7502).

In its densely punctate leaves this species suggests the genus *Stizophyllum*, but it has a different calyx. It is closely related to *Adenocalymna flos-ardeae* Pittier, of Panama, which has similarly punctate but larger leaves, more densely pubescent on the veins beneath, and a different arrangement of the flowers.

Cydista pubescens Blake, sp. nov.

Shrubby vine; stem stout, subterete, glabrous, grayish-barked; branches dark fuscous, subterete, striatulate, glabrous or very rarely with a few spreading hairs, sparsely scaly-glandular; leaves opposite, conjugate, terminated by a usually persistent tendril; stipules wanting; petioles stoutish, 2.5 to 3.5 cm. long, subterete, spreading-pubescent chiefly on the upper side with dull hairs, and scaly-glandular, in age sometimes glabrate; leaflets 2, the petiolules similar to the petiole, 1.3 to 2.5 cm. long; blades usually suborbicular-ovate, sometimes ovate, 7.5 to 13 cm. long, 4.5 to 11 cm. wide, abruptly short-pointed or acute, the apex obtuse or acute, mucronulate, at base broadly rounded, pergamentaceous to subcoriaceous, deep green, shining above, sparsely spreading-puberulous or pubescent with curved hairs, chiefly along the costa, and scaly-glandular, subglabrate, beneath dull, rather densely spreading-pubescent over whole surface or only along the veins with loose, dull, many-celled hairs, and scaly-glandular, prominulous-recticulate on both sides, the chief lateral veins 3 to 5 pairs; tendril glabrous, about as long as the leaflets, simple; panicles in threes terminating stems and branches, trichotomous, scaly-glandular, rather few-flowered, the peduncle 3 to 6 cm. long, the branches erect, the pedicels 7 to 11 mm. long, the bracts spatulate, about 9 mm. long, the bractlets subulate, minute; calyx campanulate, 7 mm. long, minutely 5-toothed at the truncate apex, coriaceous, densely scaly-glandular, obscurely ciliolate; corolla "pinkish white," 4.8 to 6 cm. long, densely papillose-glandular outside and on the limb and within on the ventral surface, the tube 7 to 9 mm. long, the campanulate-funnelform throat

2 to 2.7 cm. long, the limb 1.5 to 2.3 cm. long, the 5 broadly rounded sub-orbicular lobes somewhat fluted; fertile stamens 4, glabrous, the filaments about 1.2 and 1.8 cm. long, the divergent anther cells 4 mm. long, the linear staminode about 1.2 cm. long; pistil 2.7 cm. long; disk obscure; ovary 4 mm. long, densely scaly-glandular, the ovules in each cell in 2 rows of about 15 each, the style 1.8 to 2 cm. long, the stigmas lobes rhombic-ovate, acute; pod linear, compressed parallel to the partition, 38 to 45 cm. long, 2 cm. wide, scaly-glandular; seeds 6.5 long, 1.5 cm. wide, the entire wings scarious only at apex.

Type in the U. S. National Herbarium, no. 989615, collected at La Florida, Department of Copán, Honduras, May 10, 1919, by H. Pittier (no. 8488).

OTHER SPECIMENS EXAMINED:

TEPIC: Near Acaponeta, July, 1897, *Rose* 1527, 3283.

GUATEMALA: Río de La Paz, Department Jutiapa, altitude 960 meters, July, 1894, *Heyde & Lux* 6363. Barranquillo, Department El Progreso, altitude 545 meters, April, 1920, *Popenoe* 980.

NICARAGUA: Sapoá, Department Rivas, altitude 35 meters, April, 1893, *Shannon* 5049.

COSTA RICA: Liberia, Province Guanacaste, altitude 120 meters, April, 1893, *Shannon* 5048.

PANAMA: Penonomé and vicinity, 1908, *Williams* 228.

This species is close to *Cydista aequinoctialis* (L.) Miers, but may be distinguished by its usually dense pubescence, *C. aequinoctialis* being entirely glabrous. The native name of *C. pubescens* is given as "ito" by Mr. Pittier, and as "campana" by Mr. Popenoe. The specimens here cited, excluding the type, were all distributed as *C. aequinoctialis*, with the exception of no. 6363, which was referred to *Melloa populifolia* Bureau.

***Macfadyena guatemalensis* Blake, sp. nov.**

Shrubby vine; stem subterete, slender, gray-barked, glabrous; leaves opposite, conjugate, the tendril deciduous; stipules obsolete; petioles terete, striatulate, densely griseous-puberulous with spreading hairs, 2.5 to 2.8 cm. long; leaflets 2, the petiolules similar to the petiole, 1.5 cm. long; blades oval, 12 to 14 cm. long, 5 to 6.5 cm. wide, short-acuminate, cuneate-rounded at base, chartaceous, above deep green, somewhat shining, finely puberulous chiefly along the costa, very loosely reticulate with scarcely prominulous veinlets, beneath dull green, evenly but not densely pubescent with spreading whitish hairs, the whitish lateral veins about 6 pairs, prominent, the prominulous secondaries very loosely reticulate; tendril not seen; inflorescence of one or two about 8-flowered racemes terminating a lateral branchlet, the axis 1 to 1.5 cm. long, sparsely pubescent, the persistent bractlets subulate, about 1.5 mm. long; pedicels glabrous, 10 mm. long; calyx campanulate, 15 to 19 mm. long, thin, coriaceous, dark green, glabrous, split half its length on the lower side, bearing a few saucer-shaped glands at base; corolla yellow, drying blackish green, 5.5 to 6 cm. long, thin-coriaceous, glabrous, the tube 1.5 cm. long, narrowed above, the funnelform throat 3 to 3.5 cm. long, the limb 1 to 1.5 cm. long, the 5 lobes depressed-orbicular, broadly rounded, plane; fertile stamens 4, glabrous, the thickish filaments about 1.6 and 2.4 cm. long, the widely divergent anther cells 3.5 mm. long, the slender lanceolate-tipped staminode about 6 mm. long; disk thick, cupuliform, about 2 mm. high; pistil 4 cm. long; ovary slenderly ovoid, 5 mm. long, densely lepidote, compressed parallel to the partition, the ovules in about 6 pairs in each cell, definitely 1-rowed on each side of placenta.

Type in the U. S. National Herbarium, no. 989601, collected along the bank of the Río Izabal, Izabal, Department of Izabal, Guatemala, June 1, 1919, by S. F. Blake (no. 7845).

Macfadyena guatemalensis is apparently the first true member of the genus to be reported from north of the Isthmus of Panama. It seems from description to be most closely allied to *M. mollis* (Sond.) Seem., but differs in its glabrous pedicels and corolla, and in various other characters.

ACANTHACEAE.

Siphonoglossa discolor Blake, sp. nov.

Herbaceous perennial, the stems several, branched, ascending, about 45 cm. long and 1.5 mm. thick, dull green, terete, sulcate, obscurely puberulous with incurved hairs, the internodes of the main stems 2 to 6.5 cm. long; leaves opposite; petioles slender, naked, puberulous, 3 to 5 mm. long; blades obovate, spatulate-obovate, rotund-obovate, or rarely elliptic, 11 to 22 mm. long, 6 to 11 mm. wide, broadly rounded, obtuse, or rarely acutish, apiculate, at base acutely cuneate, herbaceous-papyraceous, entire, sometimes somewhat repand, above deep green, in youth somewhat pubescent, in maturity glabrate except for the hispidulous-ciliolate margin and the sometimes pubescent costa, beneath paler and yellowish-green, permanently hispidulous-pilosulous chiefly along the veins, cystolithigerous on both sides, the lateral veins about 3 pairs, obscure above, prominulous beneath; flowers in twos or threes in the axils of foliage leaves, subsessile; bractlets 2, lance-subulate, incurved-puberulous and ciliolate, 2 mm. long; calyx 4-parted, the segments lance-linear-subulate, equal, 4 mm. long, ciliolate and puberulous; corolla magenta, 2.4 cm. long, spreading-pilosulous throughout, sparsely so toward apex of limb, the slender cylindrical tube 16 mm. long, about 0.8 mm. in diameter, the throat short, about 2 mm. long, somewhat ampliate, the oblong-ovate obtuse porrect upper lip 6 mm. long, about 2 mm. wide, the spreading lower lip 6.5 mm. long, about 10 mm. wide, 3-lobed, the lobes obovate-oval, rounded, subequal, 5 mm. long, 3.3 mm. wide; stamens 2, inserted at apex of throat, the glabrous filaments 3 mm. long, the connective somewhat dilated, the elliptic-oblong glabrous anther cells unequal, subparallel, oppositely inserted, obtuse at both ends, unequal, 0.8 to 0.9 and 1.1 to 1.2 mm. long; disk prominent, fleshy, cup-shaped, about 0.3 mm. high, subentire; ovary 1.2 mm. long, cylindrical-ovoid, pilosulous above, 2-celled, with 2 ovules in each cell; style slender, pilosulous to above the middle, 2 cm. long; capsule clavate, spreading-puberulous, 1 cm. long, 4-seeded, the sterile stipelike base nearly equaling the fertile portion; seeds brownish, suborbicular, flattened, verrucose, 2.5 mm. long.

Type in the U. S. National Herbarium, no. 989619, collected on edge of thicket at Gualán, Department of Zacapa, Guatemala, May 26, 1919, by S. F. Blake (no. 7669).

This species may be recognized by its obovate discoloured leaves and fine puberulence.

Dianthera riparia Blake, sp. nov.

Erect perennial herb, 60 to 70 cm. high, sparsely branched; stem slender, dark green, pilose or pilosulous in lines with spreading or recurved hairs; leaves opposite; petioles slender, glabrous, barely margined, 4 to 13 mm. long; blades elliptic or lance-elliptic, 9 to 14 cm. long, 2 to 4 cm. wide, attenuate and usually falcate, at base acuminate into the petiole, repand, membranous, glabrous and cystolithigerous on both sides, deep green above, slightly paler green beneath, the costa sulcate above, prominent beneath, the 4 or 5 pairs of lateral veins curved-anastomosing at tip, prominulous especially beneath; spikes axillary and solitary, few, borne near tip of stem, pilose or pilosulous in lines, very slender, 12 to 17 cm. long, on a peduncle 4 cm. long or less, the internodes

1 cm. long, the flowers opposite at the nodes; bracts lance-subulate, attenuate from an ovate, sparsely ciliate base, 3 mm. long; bractlets 2, similar but narrower and not ciliate, slightly shorter; sepals 4, lance-linear-subulate, attenuate, sparsely ciliate or subglabrous, 5.5 mm. long; corolla glabrous, 17 mm. long, white, the lip marked or lined with violet or magenta-purple, the upper lip pale magenta within, the tube 9 mm. long, the upper lip ovate, obtuse, obtusely bidentulate, 6 mm. long, 2.5 to 3.5 mm. wide, the lower lip 8.5 mm. long, 6.5 to 8 mm. wide, bearing 2 longitudinal folds about 1.2 mm. high, its 3 rounded subequal lobes about 2 mm. long; stamens 2, inserted at apex of tube, the glabrous filaments 4 mm. long, the connective strongly and obliquely dilated, the anther cells very oblique, obtuse at each end, glabrous, the lower 0.8 mm. long, the upper 1 mm. long; capsule 4-seeded, glabrous, 12 mm. long, about 1.5 mm. wide, the stipe equaling the fertile portion; seeds brownish black, papillose, 2.2 mm. long.

Type in the U. S. National Herbarium, no. 989620, collected along stream on trail from Los Amates to Izabal, Department of Izabal, Guatemala, May 31, 1919, by S. F. Blake (no. 7800).

ADDITIONAL SPECIMEN EXAMINED:

GUATEMALA: Thickets along Rfo Techín, Department of Izabal, May 17, 1919, Blake 7491.

This species is closely related to *Dianthera breviflora* (Nees) Hemsl., which is described as having broader leaves with 8 or 9 pairs of lateral veins, rather dense sessile spike, glabrous bracts, bractlets, and calyx, and smaller corolla, with the sepals (6 mm. long) equaling the corolla tube. Dr. Stapf writes me that the type (*Linden* 184) of *Rhytiglossa breviflora* Nees, in the Kew Herbarium, has a corolla measuring 15 mm. to the tip of the ventral lip, 12 mm. to the tip of the dorsal lip, with the glabrous tube 5 mm. long.

CUCURBITACEAE.

***Anguria aurantiaca* Blake, sp. nov.**

Herbaceous twiner; stem fuscous, striate, about 3 mm. thick, finely spreading-puberulous; tendrils opposite the leaves, spreading-puberulous, glabrescent; leaves alternate, trifoliolate; petioles stoutish, finely spreading-puberulous, 5 to 5.5 cm. long; petiolules naked, 4 to 7 mm. long; blades of the lateral leaflets obliquely broad-ovate, 2-parted nearly to base, the lower lobe ovate, strongly inequilateral, acute or short-acuminate, broadly rounded on lower side and there with a blunt tooth toward the base, otherwise subentire, 7 to 9 cm. long, 3.5 to 4 cm. wide, above dull green, glabrous, pustulose along the nerves, beneath somewhat paler green, obscurely puberulous along the nerves, the upper lobe subequilateral, 11.5 to 13.5 cm. long, 5 to 6 cm. wide, with a large tooth on the lower side near middle and slightly sinuate-denticulate; middle leaflet rhombic-obovate, 13 to 14.5 cm. long, 5.5 to 7 cm. wide, short-acuminate, cuneate at base, sinuate-denticulate, equilateral, the lateral veins about 6 pairs, prominent on both sides; peduncle of the staminate spike axillary, slender, striate, essentially glabrous, 20 cm. long; staminate spike about 18-flowered, its axis 5 to 7 mm. long; flowers sessile; calyx oblong-cylindric, glabrous, the tube 11 mm. long, about 2.5 mm. thick, the 5 triangular acute teeth 2 mm. long; petals 5, orange, rhombic-obovate to rhombic-suborbicular, 4 mm. long, 3.5 mm. wide, densely puberulous on both sides; stamens 2, linear-elliptic, 7.5 mm. long, straight, dorsally affixed, the papillose obtuse appendage about 0.2 mm. long.

Type in the U. S. National Herbarium, no. 989585, collected on edge of trail from Hacienda El Limón to El Paraíso, Department of Copán, Honduras, May 12, 1919, by S. F. Blake (no. 7355).



CAYAPONIA MICRODONTA BLAKE.



SCLEROCARPUS PHYLLOCEPHALUS BLAKE.

This species enters the third group of the genus in Cogniaux's monograph, and is readily distinguished by its very small petals and the dimensions of its leaves and calyx.

Cayaponia microdonta Blake, sp. nov. -

PLATE 7.

Twining herb; stem slender, about 1.5 mm. thick, striate-angled, densely and finely glandular-tuberculate, sparsely branched; tendrils opposite the leaves, slender, striate-angled, about 10 cm. long; leaves alternate; petioles striate, marginate above, finely subglandular-papillose, the naked portion 1 cm. long; blades broadly ovate in outline, 3-lobed about to middle, 7 to 10 cm. long, 6.5 to 8.5 cm. wide, at base broadly rounded and narrowly decurrent into the petiole for about 3 to 10 mm., the lobes obtuse or emarginulate and often mucronulate, the blade papyraceous, above deep green and slightly shining, evenly papillose-tuberculate and hispidulous with soon deciduous hairs, along the nerves tuberculate-hispidulous, beneath scarcely paler green, densely papillose-tuberculate and glanduliferous, along the veins very sparsely hispidulous, the free portions of the lobes ovate, obscurely denticulate, the lateral lobes about 2 cm. long and wide or rarely obsolescent, the terminal about 6 cm. long, 3.2 to 4 cm. wide, the decurrent portion of the blade marked with large crater-shaped glands; staminate flowers solitary in the axils, on striate, obscurely tuberculate peduncles 2 to 3.5 cm. long; calyx campanulate, the tube 14 mm. long, 12 mm. wide, puberulous in a ring at extreme base, sparsely tuberculate-hispidulous, outside hispidulous-ciliolate, long-pilose within, the 5 triangular acute teeth 1.5 mm. high; corolla cream-color with yellow center, the 5 petals inserted near the apex of the calyx tube, oblong-oval or obovate-oval, 15 mm. long, 8 mm. wide, densely and sordidly papillose-puberulous with subglandular hairs on both sides, long-pilose toward base within; stamens 3, the pilose filaments about 4 mm. long, the reduplicate connate anthers 11 mm. long, the connectives prolonged into oblong obtuse pilose appendages about 2 mm. long; ovary rudiment none.

Type in the U. S. National Herbarium, no. 989625, collected on edge of woods, Los Amates, Department of Izabal, Guatemala, May 29, 1919, by S. F. Blake (no. 7730).

Closest to *Cayaponia macrantha* Pittier, of Costa Rica, which has more deeply lobed leaves with more sinuate margin, longer peduncles, and calyx teeth 2 to 3 mm. long.

EXPLANATION OF PLATE 7.—*Cayaponia microdonta*, from the type specimen. Natural size.

ASTERACEAE.

Sclerocarpus phyllocephalus Blake, sp. nov.

PLATE 8.

Erect annual with assurgent branches, or assurgent, 16 to 32 cm. long, the branches sometimes exceeding the main stem, opposite below, alternate above, like the stem greenish or fuscous, in youth densely hispid-pilose with spreading subtuberculate-based hairs, in age subglabrescent; leaves opposite below, alternate above; petioles hispid-pilose with ascending or somewhat spreading hairs, naked or slightly margined, 5 to 25 mm. long; blades ovate or lance-ovate, 2 to 8 cm. long, 1 to 4 cm. wide, acuminate, at base cuneately narrowed into the petiole, serrate with 6 to 12 pairs of obtusish, often depressed teeth, above dull green, rather densely hispid-pilose with ascending roughish hairs, beneath in youth densely subappressed-hispid-pilose with flavescent-griseous hairs, at maturity griseous; heads solitary at tips of stem and branches, 11 to 16 mm. wide, on peduncles 1 to 11.5 cm. long; involucre of 6 very unequal, 1-seriate, foliaceous, spatulate to oblong-ovate, entire or serrate, petiolulate phyllaries, 6 to 20 mm. long, 1.8 to 7 mm. wide; involucre subtended at base by 2 or 3 ovate serrate

bracts up to 5 cm. long, precisely similar to the leaves; rays 6, neutral, orange or orange-yellow, the pubescent tube 2 mm. long, the suborbicular emarginate limb 4 to 6.5 mm. long, 4 to 5 mm. wide; disk fertile, the corollas orange or orange-yellow, 6.8 to 8.5 mm. long, slender-funnelform, hispid-pilose above, the teeth lanceolate, 2 mm. long, bearing a tuft of deeper-colored hairs within near the apex; fruits all beaked, strigillose, bent, 6 mm. long, the body obovoid, 3.5 to 4 mm. long, ribbed and bluntly tubercled on the back and sides, the beak about 2 mm. long; achene obliquely obovoid, 3 to 3.5 mm. long, glabrous, dark grayish, striate, epappose.

Type in the U. S. National Herbarium, no. 989587, collected on railroad embankment at Cristina, Department of Izabal, Guatemala, May 23, 1919, by S. F. Blake (no. 7648). Also collected at the same place and date under no. 7642.

This new species is most closely related to *Sclerocarpus major* Small, which has pappose achenes, rays with lamina 1.8 to 2 cm. long, and corolla teeth 5 mm. long. It is at once distinguished from *S. divaricatus* (Benth.) Benth. & Hook. and *S. orcuttii* Greenm. by the fact that all its fruits are beaked, while in these species the outer fruits are not beaked although sometimes hooded.

EXPLANATION OF PLATE 8.—*Sclerocarpus phyllocephalus*, from the type specimen. Natural size.

Wedelia parviceps Blake, sp. nov.

PLATE 9.

Suffrutescent or frutescent, or sometimes herbaceous, erect or ascending, usually much branched, 0.6 to 1.3 meters high, from a tuberous-thickened root 1 to 1.5 cm. thick; stem and branches slender, densely and harshly tuberculate-hispidulous, glandular and usually spreading-hispid; leaves opposite throughout; petioles tuberculate-hispid and hispidulous, naked, 2 to 6 mm. long; blades lance-ovate to elliptic-ovate or ovate, 2 to 6 cm. long, 8 to 20 mm. wide (those of the branches smaller), acute or acuminate, cuneate or rounded-cuneate at base, serrulate with 6 to 10 pairs of depressed obtuse or acute teeth or subentire, firmly herbaceous, above dull green, evenly and harshly hispidulous and ascending-hispid, the larger hairs tuberculate-based, beneath slightly paler green, evenly hispidulous on the surface, on the veins ascending-hispid, tripinnate; heads 10 mm. wide, solitary or usually in threes, axillary and terminal, on densely hispidulous and more sparsely spreading-hispid pedicels 1 to 4.5 cm. long; disk campanulate, 6 to 7 mm. high, 3 to 5 mm. wide; involucre 3.5 to 6 mm. high, 3 or 4-seriate, subequal or graduated, ascending-hispid-pilose and ciliate, the phyllaries with indurate base and shorter, rather abruptly narrower, obtuse or acutish, somewhat spreading, herbaceous tips; rays 6, yellow, fertile, obtusely bidentate, the lamina oval, hispidulous dorsally, 4 mm. long, 2.5 mm. wide; disk flowers about 9, the corollas yellow, hispid at apex of tube, hispidulous on the teeth, 4 mm. long (tube 1.3 mm., throat narrow-funnelform, 1.9 mm., teeth 0.8 mm.); pales obtuse, scarious, hispidulous above, 5 mm. long; ray achenes with denticulate coroniform pappus cup 0.5 mm. high; disk achenes oblong, thickened but somewhat compressed, 4-angled, grayish, glabrous, 3.5 mm. long, 2.3 mm. wide; pappus a narrow denticulate cup 0.5 mm. high, in the ovary provided on the inner side with an awn or tooth 1 mm. high or less, this lost at maturity.

Type in the U. S. National Herbarium, no. 989584, collected on dried river's edge at Gualán, Department of Zacapa, Guatemala, May 26, 1919, by S. F. Blake (no. 7681).

OTHER SPECIMENS EXAMINED:

GUATEMALA: Open hillsides wooded with pine, along trail from Los Amates to Izabal, May 31, 1919, *Blake* 7782. Secaquím, March 29, 1902, *Cook & Griggs* 301. Near Secaquím, trail to Cahabón, November 25, 1904, *Goll* 53.



WEDELIA PARVICEPS BLAKE.

HONDURAS: Open hillsides wooded with pine, along trail from La Florida to Hacienda Espíritu Santo, Department of Copán, May 14, 1919, Blake 7426.

NICARAGUA: In pine woods, San Rafael del Norte, altitude 1,200 to 1,350 meters, March 25 or 26, 1917, Miller & Griscom 59, 92, 94.

PANAMA: Common in pastures around El Boquete, Chiriquí, altitude 1,000 to 1,300 meters, March 2, 1911, Pittier 2867. In savannas, Cerro Vaca, eastern Chiriquí, altitude 900 to 1,136 meters, December 25 to 28, 1911, Pittier 4346.

Wedelia parviceps is easily distinguished by its very small heads.

EXPLANATION OF PLATE 8.—*Wedelia parviceps*, from Blake 7426. Nearly natural size.

Melanthera hastifolia Blake, sp. nov.

FIGURE 3.

Erect or ascending, herbaceous, branched, about 2.5 meters high; stem stout, 7 mm. thick, subquadrangular, striate, whitish, immaculate, strigillose; leaves opposite; petioles slender, naked, strigose and sparsely hispid, connected at base by a hispidulous ring, those of the main stem leaves 2 to 2.5 cm. long, those of the branch leaves 1 cm. long; blades of the stem leaves oblong-obovate or oblong, widest at base and there with a spreading hastate lobe on each side, contracted above the lobes and then widened, 9 to 11 cm. long, 3.5 to 5 cm. wide at base across the lobes, 2 to 3 cm. wide above the middle, acuminate, at base subtruncate, then shortly cuneate into the petiole, irregularly serrate-dentate with 20 to 30 pairs of triangular acute teeth, above deep green, slightly lucid, harshly tuberculate-hispidulous and along the veins ascending-hispid, beneath slightly paler green, hispidulous with incurved-ascending hairs and along the veins ascending-hispid, pinnate-veined, the costa and the 8 or 9 pairs of curved-anastomosing lateral veins and the secondaries prominulous-reticulate beneath; branch leaves similar but smaller and often not hastate at base, the blades 4 to 6.5 cm. long, 1 to 1.5 cm. wide; peduncles axillary and terminal, striate, strigillose, 4 to 9 cm. long, or rarely very short; heads 15 mm. wide in flower, 7 mm. high, in fruit 11 to 12 mm. wide, 7 mm. high; involucre 3-seriate, equal or subequal, 4.5 to 5 mm. high, the phyllaries oblong-ovate, acute, 1.5 to 2 mm. wide, densely strigose and more or less hispid-ciliate, appressed, indurate and pale below, the upper half or only the tip subherbaceous; rays none; disk corollas white, tuberculate-hispidulous on the teeth, 5.5 mm. long (tube 1.2 mm., throat 3 mm., teeth triangular, 1.3 mm.); pales abruptly acuminate, strigillose and dull greenish above, 5.5 to 6.5 mm. long; achenes plump-obovoid, subquadrangular, 2.5 mm. long, blackish, hispidulous at apex; awns 2 or 3, unequal, 0.5 to 2 mm. long, caducous; squamellaceous corona obscure.

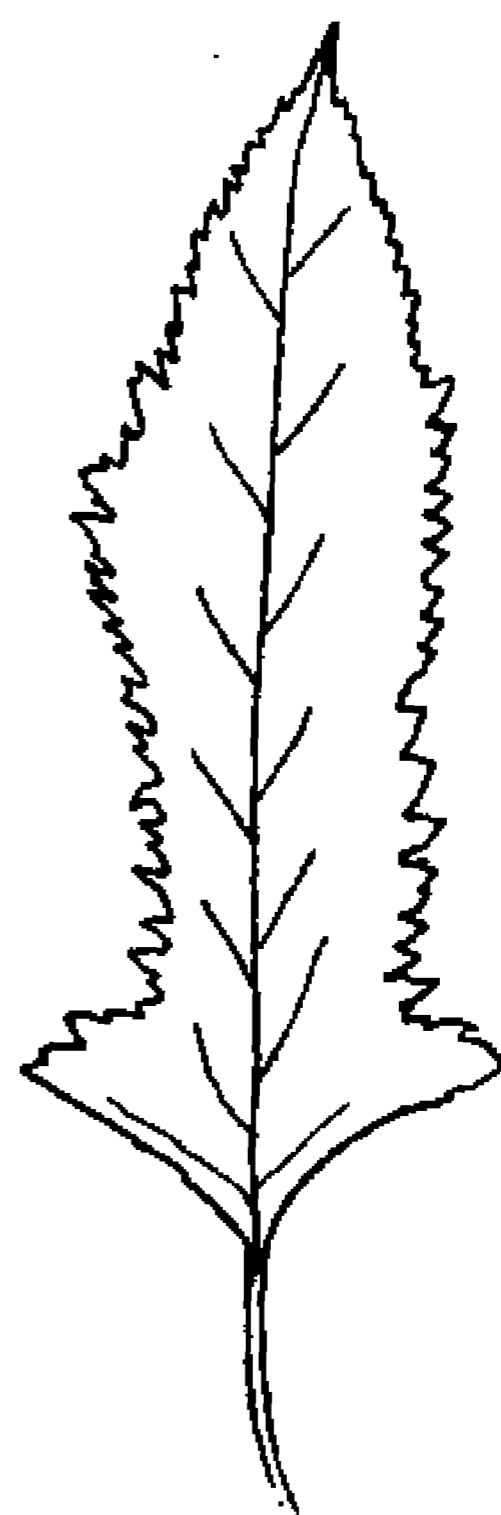


FIG. 3.—*Melanthera hastifolia*. A leaf of the type specimen. One-half natural size.

Type in the U. S. National Herbarium, no. 989633, collected in ditch along railroad at Cristina, Department of Izabal, Guatemala, May 22, 1919, by S. F. Blake (no. 7601A).

I refer also to this species, but with some doubt, a collection made at the same place and date (no. 7588), in which the leaves are lanceolate or elliptic-lanceolate, obscurely or not hastate, and not contracted above the base. These plants bear the vernacular name "flor de la vida."

Melanthera hastifolia is allied to *M. nivea* (L.) Small, but may be distinguished by its foliar characters.

Melanthera linearis Blake, sp. nov.

FIGURE 4.

Erect or ascending herbaceous perennial, 1 meter high, sparsely branched, the stem slender, about 2.5 mm. thick, quadrangular, purplish-maculate, strigillose; leaves opposite, alternate in the inflorescence; petioles slender, unmarginated, strigillose, those of the main leaves 5 to 10 mm. long; blades linear or the lower narrowly linear-oblongate, 5 to 9 cm. long, 4 to 7 mm. wide, acute at each end, serrate with 8 to 19 pairs of appressed obtuse teeth, above dark dull green, tuberculate-strigillose, beneath somewhat paler green, evenly but not densely strigillose, along the costa and the 6 to 13 pairs of slightly prominulous lateral veins short-hispid with barely ascending hairs; peduncles few, solitary in the axils and terminal, strigillose, slender, naked or 1-bracteolate, 6 to 14.5 cm. long; disk 12 mm. wide in flower, 6 mm. high, in fruit 6 mm. high, 9 mm. in diameter; involucre about 3-seriate, 3 to 3.5 mm. high, graduated, the phyllaries oval, obtuse or rounded, obscurely mucronulate, appressed, griseous-strigillose, indurate, with short subherbaceous tip; rays none; disk corollas white, tuberculate-hispidulous above, 4 mm. long (tube 0.7 mm., throat 2.6 mm., teeth triangular, 0.7 mm.); pales strigillose, barely acute, 3.5 mm. long; achenes plump, blackish, 2.2 mm. long, essentially glabrous; awns 2, unequal, caducous, 0.8 to 1.7 mm. long; squamellae obscure.



FIG. 4.—*Melanthera linearis*.
A leaf of the type specimen. One-half natural size.

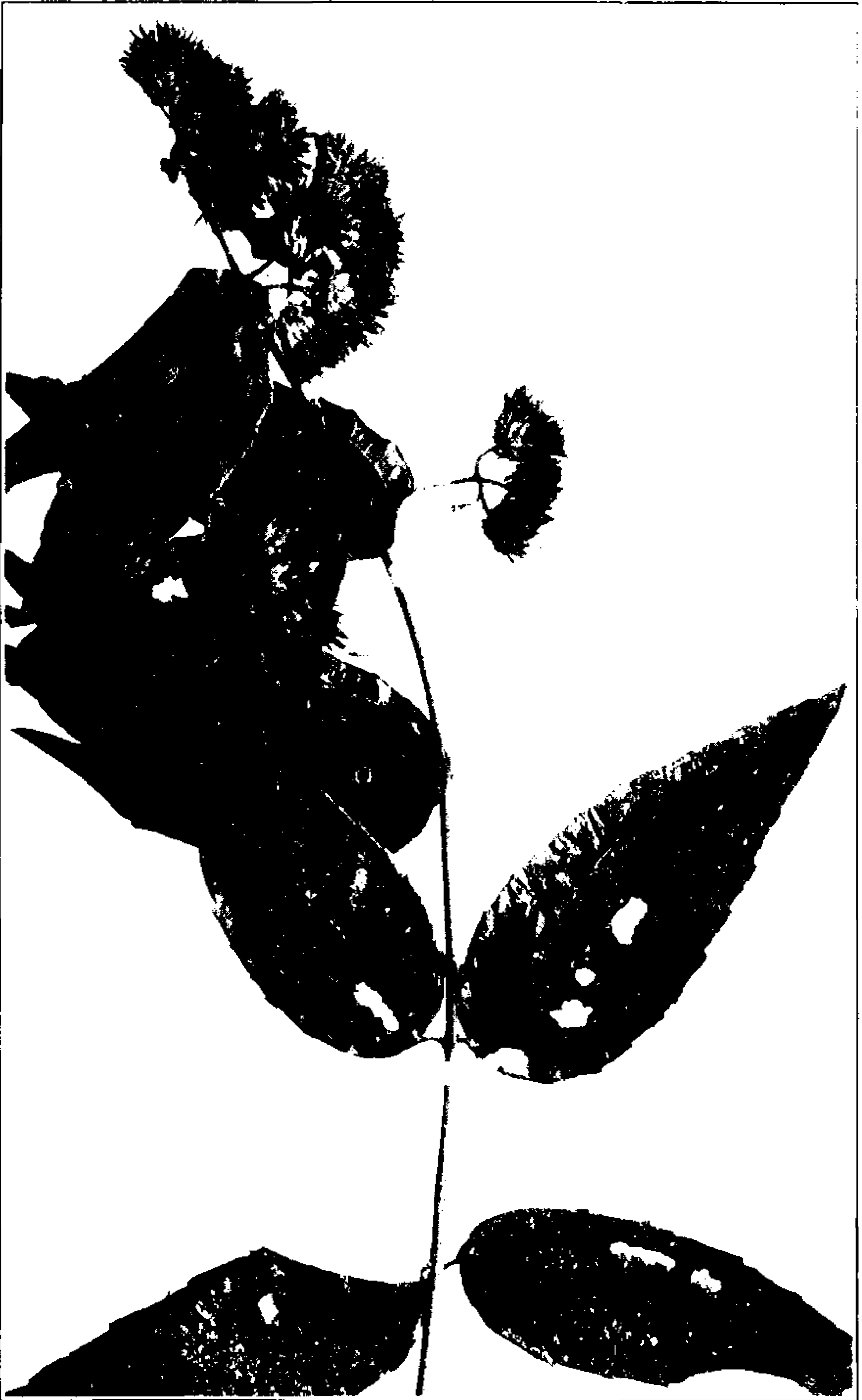
Type in the U. S. National Herbarium, no. 989632, collected in ditch along railroad at Cristina, Department of Izabal, Guatemala, May 22, 1919, by S. F. Blake (no. 7601).

This species is related to *Melanthera angustifolia* A. Rich., but is to be separated by its smaller heads with shorter blunt phyllaries and pales.

Otopappus asperulus Blake, sp. nov.

PLATE 10.

Slender scandent shrub; stem terete, striatulate, about 2 mm. thick, grayish, densely and harshly tuberculate-hispidulous with spreading hairs, subglabrate; branches fuscous, very densely and harshly spreading-hispidulous; leaves opposite; petioles 2 to 3 mm. long, spreading-short-hispid; blades ovate-lanceolate, 5.5 to 8 cm. long, 1.2 to 2.5 cm. wide, acuminate, often somewhat falcate, at base rounded, serrulate with 5 to 13 pairs of depressed mucronulate teeth, subpapyraceous, above dark dull green, rather sparsely and harshly hispidulous and short-hispid with lepidote-based ascending hairs, glabrescent, beneath rather sparsely hispidulous and short-hispid with mostly tuberculate-based hairs, these longer along the veins, triplinerved from near the base, the veins impressed above, like the secondaries prominulous beneath; heads about 12 mm. wide, campanulate, in axillary and terminal corymbs of 2 to 4, mostly shorter than the leaves; bracts spatulate, about 6 mm. long; pedicels densely hispidulous, usually about 5 mm. long, rarely up to 1 cm. long; disk in fruit 8 mm. high, about 10 mm. wide; involucre 5 mm. high, about 5-seriate, graduated, griseous-strigillose, the 2 or 3 outer series of phyllaries narrowly oblong, indurate, with reflexed spatulate herbaceous tips 0.8 to 3 mm. long, the inner indurate, oblong or oblong-oval, obtuse, appressed; rays 10, fertile, yellow, the lamina elliptic, 4 to 4.5 mm. long, 1 to 1.2 mm. wide, 3-dentate, hispidulous on nerves and teeth; disk corollas yellow, hispidulous on tube and teeth, 5 mm. long (tube 1.5 mm., teeth 0.8 mm.); pales acuminate, stiff, persistent hispidulous on back and above, 6 to 7 mm. long; disk achenes black, obovoid compressed, striate, 3 to 3.5 mm. long, 1 mm. wide, narrowly white-winged on one side (wing about 0.2 mm. wide), broadly winged above on the other.



OTOPAPPUS ASPERULUS BLAKE.

(wing 1 mm. wide), the wings united with the pappus, the narrower passing into a slender free awn 1 mm. long, the broader adnate throughout its length to an awn 2.8 mm. long; pappus corona denticulate, 1 mm. high, of completely united squamellae, adnate to the awns of the pappus.

Type in the U. S. National Herbarium, no. 989617, collected along banks of brook, Hacienda La Zumbadora, between El Paraíso and La Florida, Department of Copán, Honduras, May 13, 1919, by S. F. Blake (no. 7400).

This species is easily distinguished by its fine harsh pubescence and by the shape of its leaves.

EXPLANATION OF PLATE 10.—*Otopappus asperulus*, from the type specimen. Natural size.

***Liabum subglandulare* Blake, sp. nov.**

Shrub 3 meters high; stem stout, oppositely branched, 8 mm. thick above, grayish, densely sordid-puberulous with spreading hairs, subglabrescent; young branches densely and sordidly tomentose-puberulous; leaves opposite; petioles slender, naked, sordid-puberulous especially beneath, 1.5 to 2.5 cm. long; blades (immature) ovate or lance-ovate, 5 to 8 cm. long, 2.5 to 3.5 cm. wide, acuminate, cuneately narrowed into the petiole, subentire or obscurely repand-denticulate, subchartaceous, above deep dull green, evenly hispidulous-puberulous with subglandular-based hairs but scarcely roughish, ciliolate with subglandular hairs, beneath griseous-canesciently arachnoid-pilose and beneath the hairs densely glandular-puberulous with lucid brownish glands, glandular-pubescent along the veins, 3-nerved above the base and loosely venose below, the veins scarcely prominulous; panicles terminating branches, rounded-obovoid, densely many-headed, 13 cm. long, 10 cm. wide, sordidly griseous-tomentulose-puberulous and more sparsely pilosulous with straight hairs; pedicels 1 mm. long or less; involucre 3.5 to 4 mm. high, the phyllaries very few (about 10), about 4-seriate, strongly graduated, the outermost roundish, dull brownish, sordid-pilosulous above, the innermost oblong-oval, obtuse, dull brownish with thinner paler margins, sparsely pilosulous and subglandular especially toward apex; heads in fruit about 8 mm. wide; rays none; disk flowers 5 or 6; corollas creamy, 8.5 mm. long, the teeth papillose-barbate at apex, lanceolate, 3 mm. long; achenes hispidulous, 2 mm. long; pappus straw-color, the outer bristles squamelliform, 1 mm. long, the others aristiform, 7 mm. long.

Type in the U. S. National Herbarium, no. 989583, collected in shrubby ground, Hacienda La Zumbadora, between El Paraíso and La Florida, Department of Copán, Honduras, May 13, 1919, by S. F. Blake (no. 7386).

Liabum subglandulare is related to *L. caducifolium* and *L. deamii* Robins. & Bartl. It is distinguished from the former by its obtuse phyllaries and densely subglandular-puberulous stem; from the latter by its dense coating of glandular or subglandular hairs and by the lack of floccose pubescence.

***Hieracium hondurense* Blake, sp. nov.**

Herbaceous perennial, erect, about 50 cm. high; stems one or two, slender, at base loosely spreading-pilose, elsewhere rather densely appressed or ascending-puberulous, more densely puberulous on the branches of the panicle and there sparsely stipitate-glandular with dark glands on yellowish hairs about 0.2 mm. long; basal leaves about 3 to 6, obovate or elliptic-oblong, 4.5 to 6 cm. long (including the narrowed petiole-like base), 1.5 to 2.5 cm. wide, obtuse, mucronulate, cuneate at base, thin, callous-denticulate, above sparsely long-pilose with loose white hairs, beneath spreading-pilose chiefly along the costa; stem leaves 2 to 4, the lower oblong or obovate, sessile or subsessile, similar to the basal leaves, 4 to 7 cm. long, 8 to 25 mm. wide, the upper one or two linear or elliptic-linear, 2 to 3.2 cm. long, 1.5 to 5 mm. wide; stems bearing flowering branches from about the middle, the heads about 15 to 30, loosely paniced, the pedicels

1 to 2.8 cm. long, griseous-puberulous and not densely stipitate-glandular; heads yellow, 1 cm. wide, the styles dark; involucre cylindric-oblong, 8 to 9 mm. high, toward base slightly griseous-puberulous and sparsely stipitate-glandular, the bracts colorate at apex; achenes purplish brown, 3.2 mm. long, striate, glabrous, rather abruptly contracted into a neck 0.7 mm. long; pappus dirty-white, 5 mm. long.

Type in the U. S. National Herbarium, no. 989581, collected on open hillside wooded with pine, along trail from La Florida to Hacienda Espiritu Santo, Department of Copán, Honduras, May 14, 1919, by S. F. Blake (no. 7423).

ADDITIONAL SPECIMEN EXAMINED:

HONDURAS: Open hillside wooded with pine, Hacienda Espiritu Santo, May 15, 1919, *Blake* 7434.

This species is closest to *Hieracium comatum* Fries, which has a much hairier stem, thicker leaves, considerably shorter involucre, and smaller achenes, these not conspicuously contracted above into a neck.