

LEAFLETS OF PHILIPPINE BOTANY

EDITED BY A. D. E. ELMER, A. M.

Vol. II.

Manila, P. I., February 15, 1909.

Art. 29. ✓

A SCORE OF NEW PLANTS

BY

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CYPERACEÆ.

MAPANIA Aubl.

Mapania lucbanensis Elm. n. sp.

Tufts from short, thick suberect stems; roots wiry, terete, blackish. Leaves ample, slender, the upper portion reclining, glabrous, striate especially on the lower side below the middle, the ridges 3 to 5 on each side of the midrib and rather close to it, flat, the basal portion strongly conduplicate on the upper side of the leaf, somewhat paler green beneath, the margins and midrib toward the apex serrate, slenderly tapering to the acuminate point, nearly 2 cm. wide, 8 dm. long; stipular sheath thin, dry, brown, 5 mm. wide, 1 dm. long. Scape arising from the leaf base, not much longer than one half that of the leaves, ascending or suberect, reddish brown at least in the dry state, 2 to 3-jointed, provided with overlapping sheaths especially toward the base; sheaths similarly colored, smaller and more numerous toward the base, acute to acuminate, ample, open and split from the apex

down to the middle, otherwise united; inflorescence corymbose, 3 cm. high, 5 cm. across; peduncles reddish brown, subtended by rather acuminate bracts, subcompressed, the lower ones divaricate, the upper ones suberect, strict, at the distal end bearing several spikes; secondary peduncles 2 to 5 mm. long, stout, subtended by comparatively short bracts; heads 7 mm. long by 3 mm. wide, ellipsoid; bract subtending the spikelets 2.5 mm. long, 2 mm. wide, entire, elliptic or more obovate but from a broad base, glabrous, only the midrib somewhat keeled on the back; lateral 2 glumes strongly keeled, 2 mm. long, subfalcate, its sides hyaline, 0.75 mm. wide when spread out and obtuse or subtruncate at the apex, the prominent ridge along the back spinulose, each enclosing a single staminode; palea usually 3, membranous, unequal in length and size, glabrous, equaling the outer segments, the apex oblique to subtruncate and becoming fimbriate; pistil strict, 2.5 mm. long, also glabrous, terminated by 2 dark brown colored 1 mm. long stigmatic arms; seeds nearly 2 mm. long by 1 mm. thick across the middle, about 6-angled, constricted toward the base, bulging around the middle, the apex abruptly terminating into the subpersistent style.

Type specimen 9116, *A. D. E. Elmer*, Lucban, Province of Tayabas, May, 1907.

***Mapania banahaensis* Elm. n. sp.**

Leaves at least 2 cm. wide, 2 to 3 m. long, the apical 3 dm. slenderly tapering into a slender fine tail, edges entire except the fine serratures toward the apex, smooth and shining, paler green beneath, the sides mostly with one corrugation, faintly striate beneath; the midrib keeled beneath, scabrid especially toward the apex. Scape at the apex nearly 5 mm. thick, smooth, with only a few minute spinescent blackish hairs; spike cluster 2 to 3 cm. across, subtended by unequal 1 to 2 cm. long bracts; spike 1 cm. long, upon short peduncles, subtended by bracts; fruits 4 mm. long, 3 mm. thick across the middle, usually bearing the persistent style, subellipsoid, apex and bulge rounded, base more tapering, mostly maturing around the base of the spike; the glumes, palea and subtending bracts of the spikelets marscescent.

Type specimen 7639, *A. D. E. Elmer*, Lucban, Province of Tayabas, Luzon, May, 1907.

In the woods of mount Banahao from 1750 to 2500 feet. Several other sterile species were observed in this same place.

An ally of *M. palustris* Benth., but scapes not glandular scabrous; spikes fewer, making a smaller head; and narrower more slenderly tapering leaves.

ULMACEÆ.

APHANANTHE Planch.

***Aphananthe negrosensis* Elm. n. sp.**

Tree, 8 m. high, with branches divaricately spreading above the middle; wood hard and heavy, concentric rings conspicuous, the sapwood white, the heartwood brown and much harder and tasteless; bark smoothish and mottled, the inner portion turning yellowish after being exposed; the twigs lax and slender, even the younger portions glabrous. Leaves alternate, chartaceous, descending, lucid dark green above, yellowish green beneath, curvingly conduplicate on the upper side, broadly lanceolate or subelliptic, entire, glabrous, apex slenderly acuminate, base obtuse and somewhat inequilaterally sided, greatly varying in size, the average ones 1 dm. long by 3.5 cm. wide across the middle; petiole 1 cm. long, glabrous; midnerve prominent beneath, reddish; lateral nerves straw colored in the dry state, 13 or more primary pairs, pinnate, alternating with reticulate secondary ones, obscurely united at the ends, not prominent. Male inflorescence upon short flattened spikes, 1 to 2 cm. long, solitary or several clustered, from the leaf axils or in the axils of fallen leaves, ascendingly spreading; buds reddish; flowers sessily arranged in subdistichous rows along the upper side of the flattened rachis; calyx subglabrous, united at the base, in the bud state arching over the center, adnate, the 4 segments spreading in anthesis, 2.5 mm. long, acute; stamens 4, opposite the sepals, in the bud state strongly inflexed, cream color; filaments glabrous, flattened, gradually tapering from the base; anther basifixed, glabrous, 1 mm. long, 1.5 mm. wide, notched at the apex, cordate at the base, much compressed, laterally dehiscing, its

walls purplish spotted, style of the young fruits flattened and united at the base; stigmatic arms 3 mm. long, brown pulverulent along the inner sides; ripe drupes subglobose, juicy wine red, sour, mainly 1-seeded, about 5 mm. thick; seed ovoid, smooth, brown, 4 mm. long, on the ventral side subplano and at the apex bearing a whitish triangularly pointed cap.

Type specimen 9801 for flower and 10156 for fruit, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, April and May respectively, 1908.

Our species inhabits the woods from 3000 to 4000 feet, and the natives call it "Calau." Its wood is extremely hard and heavy and it is said to be very durable. The ripe fruit is sour and is good to eat.

A closely allied species to *Gironniera glabra* Merr., but leaves larger and less numerous, and apparently with larger pistillate flowers.

MYRISTICACEÆ.

GYMNACRANTHERA Warb.

Gymnacranthera negrosensis Elm. n. sp.

A 10 m. high tree; stem 4.5 dm. thick; crown elongated and bushy; wood odorless, whitish except for the yellowish red streaked vessels; bark reddish beneath the comparatively smooth and brown epidermis; branches lax and tangled; the twigs smooth, green, drying brown. Leaves coriaceous, dark shiny green above, much paler beneath, conduplicate on the upper surface, exceedingly variable in size, lanceolate, alternate, the larger blades 15 cm. long by 5 cm. wide across the middle, entire, scattered along the slender branchlets, gradually tapering to the rather blunt apex, base acute or obtuse; petiole 2 to 3 cm. long, glabrous, narrowly grooved along the upper side; main nerve prominent beneath, the lateral 9 to 13 pairs quite obscure, reticulations evident. Flowers solitary or in small clusters, in the leaf axils, or arranged upon short leafless branchlets; pedicels thick, flattened, 3 mm. long, covered with a fuzzy yellowish brown pubescence, subtended by vestiges of bracts, at the apex bearing a solitary or a pair of large thick similarly pubescent bracts; perianth yellow, 6 mm. long, the

upper one half much constricted and divided into 4 acute or acuminate segments, below the middle bulging; ovary included, light brown puberulent, elongate ovoid, 2 mm. long, 1.5 mm. in diameter at the base; style short, bearing an oblique callous dark brown stigma; nut yellowish, 5 cm. long, oblong in outline, similarly rounded at both ends; exocarp thick; the seed brown and covered with a meshed cartilaginous dark red arile.

Type specimen 10133, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, May, 1908.

A fine appearing tree with numerous branchlets, rigid yellowish odorless flowers, and large nutmeg like fruits. Only one tree was found on a very steep wooded slope near the Bonyao river cataract at 2500 feet.

Allied to *G. paniculata* (DC.) Warb.

CUNONIACEÆ.

WEINMANNIA Linn.

Weinmannia negrosensis Elm. n. sp.

Tree like shrub, 3 to 5 m. high; branches rigid, erect; wood moderately hard, odorless, sappy red; bark smoothish, gray, only thinly checked. Leaves ascending, subcoriaceous, very smooth on both sides, glabrous, conduplicate on the upper side, dark green above, yellowish green beneath, always trifoliate, opposite, mostly scattered along the young glabrous twigs; petiole greatly varying in length, averaging 2 cm. long; petiole of the terminal leaflet about the same length, that of the lateral leaflets shorter, all glabrous; leaflets quite variable in size, oblongish to subelliptic, the normal ones 9 cm. long and 4.5 cm. wide across the middle, the lower pair smaller, apex acute, base abruptly attenuate and on the lateral leaflets inequilateral; margins crenately serrate, slightly involute; midnerve prominent beneath, the 7 to 9 lateral pairs ascending, the reticulations comparatively conspicuous; stipules glabrous, foliaceous, rotund, 1 cm. long. Inflorescence terminal or from the uppermost leaf axils, erect, 7 to 11 cm. long, mostly glabrous, the peduncle and portion of the rachis reddish; flowers scattered in subverticillate clusters; pedicels 1.5 mm. long, glabrous; calyx glabrous.

the 4 segments nearly free, rather thick, triangularly obtuse, 0.75 mm. long, 0.5 mm. wide at the base; corolla segments 4, alternating with the sepals, white and with a tinge of red, oblong, 1.5 mm. long, 0.75 mm. wide, slightly clawed at the base; stamens 8, spreading; filaments filiform, glabrous, 3 mm. long, arising from between stipular glands, reddish toward the base; ovary densely hairy, less than 1 mm. long; styles 2, short, glabrous, tapering into the brown stigmas; fruits not seen.

Type specimen 9656, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, March, 1908.

A large rigid shrub or more often tree like in stature, in dense well interlaced jungles of shrubberies on a wind swept ridge at 4250 feet. Rare and only observed in one place. Flowers distinctly fragrant. The Visayan name is "Tangolamos-*itum*."

Approaches *Vidal's W. luzonensis*, but leaves always trifoliate and entirely glabrous; filaments much larger.

ROSACEÆ.

PARINARIUM Juss.

Parinarium coccineum Elm. n. sp.

Tall tree, 25 m. high or higher; stems 7.5 dm. thick; branches scattered above the middle, divaricate, comparatively short, crookedly rebranched; wood reddish white, quite hard and burly; bark thick, irregularly checked, reddish except the brown surface. Leaves alternate, leathery, dull green above, paler beneath, conduplicate on the upper side, glabrous except for the very minute hairs along the nerves and reticulations beneath, elliptic or ovately elliptic, entire, apex obtuse, base broadly obtusely rounded or subtruncate, and provided with a pair of glands beneath, margins sub-involute, 14 cm. long, 8 cm. wide; nerves conspicuous beneath, 7 to 9 pairs, oblique, tips archingly connected, reticulations numerous and very evident; petiole 1.5 cm. long, glabrous, caniculate along the upper side, frequently glaucous. Infrutescence axillary, spicate, from 5 mm. to 5 cm. long; the stalk stout, rigid, glabrous but with evidences of a yellowish brown pubescence; fruits sessile or upon very

short and pubescent pedicels, less than 1.5 cm. long, hard, smooth, except for the small lenticels, ellipsoid, crimson red; calyx persistent, rim like, 4 mm. across; seed solitary, in the center of the thick white pericarp.

Type specimen 9787, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, April, 1908.

Discovered in a deep wooded ravine at 2000 feet. The natives call it "Guisok-na-dako".

Possibly it should be referred to *Pygeum*, but the shape of the fruit and especially the thick and dry pericarp place it with *Parinarium*.

SABIACEÆ.

SABIA Coleb.

Sabia reticulata Elm. n. sp.

Scandent and numerous branched; stems smooth and brown, 1.5 cm. long, tough; twigs slender and glabrous. Foliage nearly flat, descending, with recurved tips, dry and subscarious, very lucid deep green on the upper side, much paler beneath and blackish especially along the nerves and reticulations, lanceolate or oblongish lanceolate, alternate, exceedingly variable in size, much reduced toward the ends of the twigs, glabrous, the average blades 10 cm. long, 3.5 cm. wide, base short obtuse or rounded, apex acute to subacuminate, the entire margins usually rugose; nerves very prominent beneath, the 3 to 5 main lateral pairs united one third from the margin, reticulations numerous and conspicuous; petiole 1 cm. long, glabrous, grooved on the upper side, smooth at first, becoming scurfy with age. Racemes ascending from the leaf axils, yellowish green, glabrous, varying from 3 to 13 cm. in length, usually more numerous toward the ends of the twigs; peduncle strict, ascending, less than 1 cm. long, at the base provided with a callous excrescence, bearing 1 to 3 greenish white and odorless flowers; pedicels glabrous, about 5 mm. long, strict, provided with a solitary bract; bract oblong, elliptic, 2 mm. long, glabrous but with ciliate margins; calyx turbinate, 1.5 mm. long, glabrous; its 5

segments broadly obtuse; corolla imbricate, opposite the calyx segments; segments 5, about 4 mm. long, nearly 2 mm. wide, oblong, concave on the upper side with inrolled tips, parallel nerved; stamens 5, flattened, glabrous, erect and strict, 2 mm. in length; anthers terminally attached to the blunt filaments, 0.3 mm. long, the valves widely separating after pollination, broadly ellipsoid; ovary superior, glabrous, 2-celled, 2-ovulate, each cell conically tapering into 2 nearly free short styles bearing small terminal stigmas; fruit subellipsoid, less than 1 cm. thick, soft and deep azure blue when mature, the seed somewhat flattened.

Type specimen 10027, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, May, 1908.

Collected in dense shrubberies on a very steep slope at 3000 feet. The ultimate branches are occasionally very long and widely spread over thickets.

Very near *S. philippinensis* *C. B. Rob.*, the only other Philippine species, but with larger more reticulate leaves which are constantly blackish beneath, not green; inflorescence racemose, not cymose; and fruit differently shaped. Compare with my number 5866 from Baguio collected a few years ago, and which is identical with *Robinson's* species.

DILLENACEÆ.

SAURAUIA Willd.

***Saurauia panduriformis* Elm. n. sp.**

Shrub like tree, 4 m. high; wood coarsely grained, soft, reddish especially toward the center; bark rather thick, also reddish beneath the brown epidermis, longitudinally checked and scaling in plates; branches sparingly rebranched, easily breaking, young twigs rough with grayish scales. Leaves coriaceous, chiefly terminal and ascending from the suberect ends of the twigs, flat, dark green on the upper side, much paler beneath, variable in size at least, the larger ones 2 dm. long by 1 dm. wide above the middle, pandurately obovate, the lower surface sprinkled with minute ashy gray scales especially along the nerves, apex rounded or flatly

obtuse, base rounded; margins toward the base entire, crenately toothed or serrate above the middle; nerves 11 to 13 pairs, ascending and quite parallel, anastomosing, prominent beneath, cross bars comparatively faint, reticulations obscure; petiole 1 to nearly 2 cm. long, densely gray scurfy. Inflorescence always clustered along the twigs below the leaves, in small clusters arising from the leaf scars, not exceeding 3 cm. in length; peduncle strict, scurfy, usually cymosely branched above the middle; pedicels more scurfy, 1 cm. long, but frequently much shorter, subtended by very minute bracteoles, persistent; outer whorls of 3 sepals subglabrous, short, obtuse, unequal; the 3 inner ones subelliptic, 4 mm. long, glabrous; petals 5, white, obovate, 6 mm. long, 4 mm. wide above the middle, striate, united around the base, deciduous as a whole, apex broadly rounded and usually lobulate; filaments 1 mm. long, flattened, more or less united at the base; anthers 1.5 mm. long, bilobed at the base; ovary conical, glabrous; styles mostly 3, divided clear to the base, glabrous, 3 mm. long, each terminated by a small capitate stigma, the upper portion curved or wand like; fruits not seen.

Type specimen 9209, *A. D. E. Elmer*, Lucban, Province of Tayabas, Luzon, May, 1907.

In light jungles or woods bordering grassy glens at 2250 feet of mount Banahao.

Not *S. whitfordii* Merr. which has more glabrous leaves; flowers subtended by foliaceous bracts; and calyx scurfy pubescent. Nearest to *S. sparsiflora* Elm., but our specimen has larger and fewer leaves with apices rounded, not acute; there are also minor differences in the flowers.

MYRTACEÆ.

EUGENIA Linn.

Eugenia incrassata Elm. n. sp.

A widely spreading tree, 15 m. high; its main branches arising from below the middle, the ultimate ones rather numerous and forming bushes; wood whitish, quite hard; bark gray and brown mottled; twigs glabrous, tough. Leaves opposite, scattered along the branchlets, rigid, dark shiny green

and usually conduplicate on the upper side, much lighter beneath, ascending, the entire margins involute, glabrous, minutely punctate above, below usually provided with many brown to coal black circular dots, obovate, the apex broadly rounded to subtruncate and usually terminated by a distinct blunt point, base quite abruptly attenuate, the margins frequently decurrent along the stout glabrous 1 cm. long petiole, the average ones 8 cm. long including the petiole, 5 cm. wide above the middle; midvein prominent, grooved along the upper side, keeled or edged along the lower; lateral veins numerous, equally obscure on both sides, ascending and parallel, submarginally united. Inflorescence terminal or from the uppermost leaf axils, glabrous, corymbose, about 1 dm. across, slightly exceeding the leaves; peduncles ascending, branched above the middle; the secondary ones irregularly angular, articulate and in the early stage subtended by bracts; pedicels a few mm. long, subtended by a pair of thick triangularly obtuse 1 mm. long bracts; calyx reddish brown, 6 mm. long, 4 mm. wide across the top, turbinate, wrinkled in the dry state, subtended by a pair of small bracts, 4-apiculate; corolla creamy white, caducous, in the bud state imbricately overarching the sex organs, irregularly elliptic, 3 mm. across, with a few large punctate glands, about 4 and calyptrately falling; stamens numerous, in the bud state inflexed, ultimately widely spreading, inserted upon the ovary rim, unequal in length; filaments glabrous, fleshy, thickened and somewhat flattened toward the base, at first connivent, ultimately nearly free, with a strong persistent bond at the point of inflection, the longer ones 5 mm. in length; anthers basifixed, 0.75 mm. long, elliptic or widest at the subcordate base; style 3 to 4 mm. long, subterete, strict, glabrous, bearing a small terminal stigma; ovary sunken beneath the enlarged calyx rim; fruit not known.

Type specimen 9187, A. D. E. Elmer, Lucban, Province of Tayabas, Luzon, May, 1907.

Discovered in open woods skirting mount Banahao and bordering grass fields at 2000 feet. Its flowers have a very strong clove odor and the calyces are very stringent with the same taste. Possibly they could be utilized in commerce. Aside from the mount Mariveles *E. congesta* Merr., it is

the only Philippine species with truly obovate leaves. Apparently it falls in the same group with *E. sablanensis* Elm. and *E. marivelensis* Merr. and one or two other very closely allied undescribed forms or species.

***Eugenia robinsoni* Elm. n. sp.**

Erect tree, with a 6 dm. thick, rather straight 12 m. long bole; branches chiefly toward the top, forming a dense elongated crown; twigs smooth, quite numerous. Leaves opposite, scattered, chartaceous, glabrous, shining deep green on the upper side, much paler beneath, the tips abruptly recurved, the lower side densely and minutely puncticulate, oblong to subelliptic, the apex abruptly terminating into a 1.5 cm. long caudate point, base mostly acute or obtuse, margins entire, the medium blades 7 cm. long by 3 cm. wide across the middle; petiole at least 1 cm. long, the upper portion gradually expanding into the blade proper, glabrous; midvein prominent, caniculate along the upper side; the lateral ones more evident on the lower side, subparallel, ascending, submarginally united. Inflorescence terminal and profuse, corymbosely paniculate, at least 5 cm. across, glabrous; the main and secondary peduncles ascending and branched above the middle; pedicels 1 to 3 mm. long, subtended by small deciduous very thick bracts, bearing 1 to 4 sessile and fragrant flowers; calyx turbinate, 4 mm. long, about as wide across the top, wrinkled in the dry state, glabrous and occasionally distinctly glaucous, terminated by a truncate rim, or in the bud state with 4 shallow broadly rounded teeth; corolla snow white, 4, rather thick, orbicular to broadly elliptic, falling off separately, 4 mm. across; stamens indefinite, at first inflexed, ultimately spreading and well interlaced; the filaments glabrous, inserted upon the calyx rim, unequal in length, the longer ones 5 mm. long; anthers broadly elliptic, 0.33 mm. long, basifixed and frequently subcordate at the base; style strict, also glabrous, 4 mm. long, bearing a small terminal stigma; ovary deeply imbedded in the calyx which terminates into a thick rim; fruit not known.

Type specimen 10050, *A. D. E. Elmer*, Dumaguete, Cuenos Mountains, Province of Negros Oriental, Negros, May, 1908.

Here and there isolated trees stand in humid woods at 4000 feet. So far only known from the island of Negros although a very closely allied species has been collected on Samar. Named after *Dr. C. B. Robinson* who kindly aided me in the determination of *Myrtaceæ*.

***Eugenia vidaliana* Elm. n. sp.**

Slender erect tree, 15 m. high; branches many, the ultimate ones subpendulous; bark of the twigs brown, smooth. Leaves opposite, chartaceous, deep shining on the upper surface, paler beneath, when dry nearly black on the upper side and brown and sprinkled with minute black dots on the lower, oblong to obovate to oblanceolate or only the smaller ones lanceolate, the medium sized blades 14 cm. long, 5 cm. wide across the middle or just above this, the entire margins subinvolute, glabrous, abruptly acute at apex, base cuneate; petiole 1 cm. long, thick especially at the base, also glabrous, caniculate on the upper side; midvein prominent beneath, grooved above; lateral nerves 6 to 9 on each side, brown, conspicuous beneath, much ascending, tips not united, reticulations very few and obscure. Infrutescence terminal, usually 2 or sometimes 3-branched from the base, 3 to 7 cm. long; few flowered toward the end of the peduncles; pedicels and peduncles glabrous, stout, the former about 1 cm. in length; fruits only 1 to 3 coming to maturity, 3 to 5 cm. long, about 3 cm. thick through the middle, the base prominently pointed and suboblique, smooth, terete, creamy white, the skin rather soft and dry, in the dry state densely spotted with flat circular dots, the apex bearing the calyx tube which terminates by 4 reflexed segments; seed or seeds ellipsoid, 2.5 cm. long, 2 cm. thick, transversely divided below the middle, horny, brown, the exterior rough and cinder like in appearance.

Type specimen 9161, *A. D. E. Elmer*, Lucban, Province of Tayabas, Luzon, May, 1907.

It differs from *E. cinnamomea* *Vid.* in not having leaves "oblongo-lanceolata"; neither are the nerves united at their ends; and panicle not many flowered. Named in honor of *D. Sebastian Vidal y Soler*.

ARALIACEÆ.

SCHEFFLERA Forst.

Schefflera paniculata Elm. n. sp.

Scandent, its branches not numerous but widely scattering; stems 3 cm. thick, soft, pith large, strongly araliaceous in odor, covered with thin yellowish bark. Leaves alternately scattered toward the ends of the twigs; petiole 1 to 2 dm. long, strict, glabrous, subterete, at the base expanded into an interaxillary broadly obtuse stipule; petiolule 2 to 5 cm. long, much thinner, also glabrous; leaflets 6, digitate, ovate to elliptic or even oblongish, occasionally slightly inequilateral, apex abruptly acute, base broadly rounded or short obtuse, coriaceous, ascending, glabrous, deeper green and slightly conduplicate on the upper side, with tips recurved, entire, quite variable in size, the larger ones 10 cm. long by 6 cm. wide across the middle; nerves beside the mid-nerve obscure on both sides, ascending, 7 to 9 on each side, submarginally united, the coarse reticulations barely visible. Panicle always terminal, 2 to 3 dm. long, nearly as wide across the base, glabrous; main branches divaricately ascending, yellowish green, alternately scattered or occasionally subverticellately clustered, rebranched from about the middle; secondary branches comparatively short, strict, divaricate, more numerous clustered at the apex, not exceeding 2 cm. in length, bearing at the knob like apex a whorl of 3 to 5 fruits; pedicels 4 to 7 mm. long, articulate at the base; fruit at first stage of maturity lemon yellow, ultimately becoming soft and turning to a dark wine color, subglobose or more tapering toward the apex, 5 mm. thick, in the dry state ovoidly angular, 4 to 5-ovuled but only 1 to 3 develop to seeds; seed straw brown, plump, 3.5 mm. long, fully 2 mm. thick, the base and apex bluntly pointed, the angles rounded; the undeveloped seeds much flattened, subfalcately obovate from the side view, with a conspicuous browner colored embryo.

Type specimen 9535, A. D. E. Elmer, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, March, 1908.

Interlacing shrubberies and climbing over stocky trees on a wind beaten ridge at 4000 feet. Called "Tagima-itam".

It must not be confused with 5762 collected by *E. D. Merrill* on mount Halcon and which is the type of *S. foetida Merr.* It is however, identical with 7678 of the same collector from the same mountain. The infrutescence and foliage of our species are much larger.

OLEACEÆ.

LINOCIERA Sw.

Linociera rubrovenia Elm. n. sp.

A tree, 10 m. high; branches crooked, quite rigid except the numerous rather lax branchlets; wood moderately hard, whitish, odorless, slightly bitterish; twigs lenticelled, ashy gray, at the points of branching subtended by a fringe of brown adpressed scales. Leaves coriaceous, glabrous, dark green and conduplicate on the upper side, lighter beneath, recurved especially toward the tip, oblong, 10 cm. long, nearly one half as wide across the middle, apex abruptly acute, base cuneate, oppositely scattered along the glabrous younger portions of the twigs, margins entire; petiole 1 to 1.5 cm. long, glabrous, light green, articulate at the base; axillary buds present in nearly all the leaf axils; nerves brown in the dry state, more conspicuous beneath, the 6 to 8 lateral pairs ascending, the ends only faintly united, reticulations obscure. Inflorescence paniculately branched, below the leaves but upon the same young twigs; main branches 5 cm. long, glabrous, opposite, articulate at the point of attachment, branched above the middle; secondary peduncles and 2 to 3 mm. long pedicels also glabrous, articulate and subtended by bracteoles; calyx persistent, 3 mm. broad, quite rigid, finely puberulent especially along the margins, the 4 segments obtuse; corolla creamy white, glabrous, 2.5 cm. long, the 4 thick segments adnate; stamens 2, included; filaments very short; anther 1.5 mm. long, 1 mm. broad, bifid at the apex, dehiscing laterally; fruit not seen.

Type specimen 10224, *A. D. E. Elmer*, Dumaguete, Cuer-

nos Mountains, Province of Negros Oriental, Negros, June, 1908.

Rare, in dense woods at 4500 feet. Very floriferous, the individual flowers subpendulous and entirely odorless.

As to the known Philippine species it is quite similar to *L. luzonica* (Blm.) F. Vil. based upon 1479 Cuming. The inflorescence of our specimen is chiefly beneath the leaves, not axillary, and the leaf nerves in the dry state are deep brown. The brown adpressed bracts surrounding the base of the young twigs in our specimen are entirely lacking in the other species.

APOCYNACEÆ.

CARRUTHERSIA Seem.

Carruthersia hirsuta Elm. n. sp.

A climbing shrub; stems flexible, greenish brown, round, soft with a large pith, the twigs grayish brown in the dry state and covered with olivaceous hairs; bark milky. Leaves opposite, distantly scattered, ovately elliptic, apex sharply acute, base usually subcordate, margins entire, coriaceous, paler green beneath, nearly flat, with age entirely glabrous on the upper side, when young hirsute, exceedingly variable in size, the larger blades 18 cm. long and about one half as wide across the middle, beneath subglabrous and yellowish green, hirsute long the nerves and the more prominent reticulations; petiole hirsute, 3 to 5 cm. long, mostly twisted at the base; midvein very prominent beneath, grooved along the upper side; the lateral 5 to 7 pairs divaricate, their tips ascendingly curved and interarching, all yellowish hirsute, cross bars quite numerous but faint, the fine reticulations obscure. Flowers not seen; peduncle of infrutescence 1.5 dm. long, sparingly branched toward the top, ligneous, glabrous, from the leaf axils or from the axils of their scars, subpendulous; pedicels 1 to 2 cm. long; fruits green, hard, glabrous, strongly grooved, freely bleeding with white juice when injured, 1 to 2 cm. thick, 2 dm. long, similarly tapering at both ends, pendulous, heavy, laterally dehiscing from the apex to the base into 2 similar halves; seeds rather numerous, arranged

in a single row on each side of the thin brown colored septum and attached along the ventral edge, 1.5 cm. long, linearly oblong and irregularly twisted, dark brown, rugose or deeply cracked in the dry state, usually grooved on the ventral or flattened side, contracted and somewhat expanded at the distal end which bears the 3 cm. long silky coma.

Type specimen 8899, A. D. E. Elmer, Baguio, Province of Benguet, Luzon, March, 1907.

Found along the Sablan river above the barrio of the same name.

Certainly of the same genus as *Cuming* 1783, a cotype of *Carruthersia pilosa* (A. DC.) F. Vil., and may prove to be only a very large leaved variety. There are several very closely related species of this genus in the Philippines.

***Carruthersia imberbis* Elm. n. sp.**

Scandent; stem 1.5 cm. thick, tough, covered with reddish brown bark; sap milky. Leaves subcoriaceous, oppositely scattered along the branchlets, lucid and conduplicate on the upper side, glabrous, tips recurved, beneath sprinkled with brown or coal black dots, the average blades 1 dm. long and nearly one half as wide across the middle, elliptic, the apex abruptly terminating into an acuminate or subcaudate point, base obtuse or rounded, margins entire; petiole also glabrous, 2 to 3 cm. long; nerves prominent, especially beneath, the 6 to 8 lateral pairs oblique, their ends interarching, the cross bars rather numerous and comparatively faint. Inflorescence terminal, corymbosely paniculate, yellowish green puberulent, 1 dm. long, less than that across the top; peduncles usually 3, strict, subcompressed, branched above the middle or only toward the top, subtended by a pair of small leaves, the secondary and ultimate ones subtended by linear foliaceous bracts; flowers quite numerous and clustered at the ends, whitish; pedicel 2 mm. long, minutely pubescent, subtended by small unequal bracts; calyx similarly pubescent and about as long as the pedicels, united below the middle; segments 5, triangularly acute, glabrous on the inner side; corolla 3 mm. long, 2 mm. thick, urn-shaped, only the upper one third cleft into 5 teeth, scan-

tily bearded on the inner side at about the middle; segments rigid and dark colored at the apex; stamens 5, included, alternating with the corolla segments, erect; filaments glabrous, subcompressed, brown, 1 mm. long, inserted upon the corolla 0.5 mm. from the base; anther 1.5 mm. long, basifixed, elongated, triangularly acute, the base deeply bilobed, the pair of pollen sacs above the middle and on the inner side; ovary superior, surrounded by a glabrous rim 0.5 mm. deep, 0.75 mm. high, about as thick, short and columnar, glabrous, except the light brown ciliate hairs at the apex; style central, glabrous, strict, 0.25 mm. long, with a funnel shaped rim; stigma twice as long, conically elongated or the tip more constricted and becoming mucronate in appearance; fruit not seen.

Type specimen 9239, *A. D. E. Elmer*, Lucban, Province of Tayabas, Luzon, May, 1907.

Collected it in dense humid woods at 1500 feet along the road between Lucban and Sampaloc. This same species has more recently been sent in by *Mrs. Clemens* from the lake Lanao region of central Mindanao.

CONVOLVULACEÆ.

ERYCIBE Roxb.

Erycibe dubia Elm. n. sp.

A liana like climber; branches numerous, forming tangled masses; bark yellowish gray, becoming thinly checked longitudinally. Leaves recurved and shallowly conduplicate on the upper lucid side, paler green beneath, coriaceous, oblong or frequently a trifle oblanceolate in outline, apex abruptly acute, base obtuse, varying in size, the blades 12 cm. long by 5 cm. wide across the middle, glabrous on both sides or only the midnerve beneath and toward the base supplied with a few hairs, entire, alternately scattered; petiole 1 cm. long, finely rugose in the dry state, when young covered with short yellowish brown stellate hairs, ultimately becoming glabrous; nerves oblique, the 5 to 7 pairs not very prominent, the reticulations obscure but evident from below. Infrutescence erect, axillary and terminal, the main spike varying from a few to 15 cm. long,

covered with a dense yellowish woolly matrix; pedicels 1 to 1.5 cm. long, divaricate, ebracteolate or bracts very small and caducous; calyx persistent, spreading, 1 cm. across, yellowish tomentose on the outside, imbricate; the 5 segments united at the base, rigid, orbicular, 4 mm. broad; fruit 2 cm. long, ellipsoid, hard and velvety green, turning yellowish from apex toward base and becoming softer; the green deeply corrugated cotyledons surrounded by a juicy yellow meat; flowers not seen.

Type specimen 10342, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, June, 1908.

Looping amongst wooded jungles of a very steep nearly precipitous gorge along the Bonyao river at 1500 feet.

Doubtfully related to *E. angulata* Prain and *E. macrophylla* Hallier, f.

ACANTHACEÆ.

ERANTHEMUM R. Br.

Eranthemum fruticosum Elm. n. sp.

A widely and laxly branched shrub, 2 to 3 m. high; branches sparingly rebranched; the ultimate ones suberect; stems 3 cm. thick, soft and watery, with a large pith; bark yellowish, smooth, green beneath the epidermis. Leaves opposite, more or less crowded at the ends of the rather elongated suberect branchlets, very smooth on both sides but much paler beneath, radially spreading, flat and gracefully recurved, 1.5 to 2.5 dm. long, from 7 to 10 cm. wide across the middle, entire, glabrous throughout all stages, gradually tapering to an acute or acuminate point, slenderly attenuate at the base, occasionally curved and somewhat inequilateral especially toward the base; petiole also glabrous, averaging 3 cm. long; nerves very conspicuous from both sides, brown or nearly black in the dry state, about 9 to 11 on each side, much ascending, tips faint and obscurely united, cross bars and coarse reticulations scant and very faint. Spike never branched, erect, strict, terminal, green, glabrous, 4 dm. long including the 1 dm. long peduncle; fruits bunched and alternately scattered or occasionally subwhorled, subtended by acuminate subglabrous bracts; pedicel in the

fruiting stage 5 mm. long; calyx united at the very base, 8 mm. long, the 5 slenderly acuminate segments minutely glandularly punctate on the outer side, persistent; ovary 3 mm. long, conically elongated, glabrous; style filiform, subpersistent, subglabrous or finely pubescent below the middle, strongly curved; fruits not mature, 5 cm. long, smooth, the lower one half constricted, that portion above the middle expanded and subcompressed, terminated into a stout 5 mm. long point; immature seeds 4, very flat, 5 mm. across, set upon rigid sharply curved retinaculae.

Type specimen 9619, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, March, 1908.

Only one plant of this species was observed by me while in that region for four months. It was found on a very steep deeply shaded ravine near a stream at 2500 feet. In its habitat it is most distinct from all other Philippine species so far known. Some of the Visayan people know it as "Bankaro."

Not *E. curtatum* C. B. Clarke nor its allied species *E. crenulatum* Nees, *E. malaccense* C. B. Clarke and *E. andersoni* Mast. It is very different from *E. haenkeanum* Nees, and *E. bicolor* Schrank., a species with dark blotched flowers.

HEMIGRAPHIS Nees.

Hemigraphis sublobatum Elm. n. sp.

Herbs, suberect or reclining, from a few cm. to 3 dm. high; stems delicate, dirty and bristly pubescent, branched from the lower leaf axils. Leaves opposite, greatly varying in size and shape, thin, horizontally spreading, green above and with darker green veins, beneath much lighter green and veins often tinged with purple, pseudostrigose on both sides, the average blades 3 to 5 cm. long, 2.5 cm. wide, ovate in outline or oblongish or even elliptic, apex obtuse or rounded, base subtruncate or rounded, 3 to 5-lobulate, the lobulations blunt, the smaller bract like leaves subentire or nearly undulate; nerves very faint, 2 to 3 pairs, beneath usually dirty yellowish pubescent, ascendingly curved; petiole not exceeding 2 cm. long, pubescent, slender, those

of the smaller leaves nearly obsolete. Flowers from the uppermost leaf axils, subtended by foliaceous bracts, erect or ascending, solitary, subsessile; calyx glabrous except the sparsely ciliate segments, green, not exceeding 8 mm. in length, turbinate, the basal 2 to 3 mm. united, otherwise divided into 5 setose segments; corolla white or occasionally tinged with red, purplish streaked toward the base, glabrous, cylindric from below the middle, saccately inflated from a trifle below the middle, nearly 1.5 cm. across at the throat, about 2 cm. long, delicate and rather early falling; the 3 lobes subequal, broadly rounded; stamens whitish, inserted upon the corolla somewhat above the middle; filament 0.5 mm. long; anther 1.5 mm. long, subtruncate at the apex, bilobed at the base; ovary glabrous, 3 mm. long, elongated; style also glabrous, filiform, terminating in a linear stigma; capsule 1 cm. in length, subglabrous, straw brown in color, linear, dehiscing laterally, the halves becoming much recurved, about 12-seeded, the seed set in retinacula arranged in alternating superimposed rows; seeds suborbicular, flattened, light brown, finely ciliate along the margin.

Type specimen 9665, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, March, 1908.

This species forms small mats in rock crevices of cliffs near the Bonyao river and in well shaded talus beds at 2500 feet. Known to the natives as "Pisow-pisow-na-balagon".

RUBIACEÆ.

PSYCHOTRIA Linn.

Psychotria diffusa cervina Elm. n. var.

Primarily distinguished from 152 *H. N. Whitford* of mount Mariveles by the fuliginously colored tomentose inflorescence.

Type specimen 9800, *A. D. E. Elmer*, Dumaguete, Cuernos Mountains, Province of Negros Oriental, Negros, April, 1908.

Collected on a windswept ridge at 4000 feet.

CAMPANULACEÆ.

PRATIA Gaud.

Pratia ovata Elm. n. sp.

Soft annual; stems trailing, green, subglabrous, 1 mm. in diameter, taking root at the joints; branches alternate, suberect, delicate. Leaves alternately scattered along the branchlets, thin or subflaccid, flat, somewhat lighter green beneath even in the dry state, upon a green and sparsely strigose or nearly glabrous 5 mm. long petiole, ovate or subrotund, subglabrous on both sides, entire or minutely crenately toothed, apex obtuse, base broadly obtuse to rounded or even subtruncate, the normal blades 1.5 cm. long and 1 cm. wide below the middle; nerves about 3 on each side, strongly oblique, occasionally provided with dirty strigose hairs, very obscure from the upper side. Flowers solitary from the upper leaf axils; pedicels from 3 to 5 or even 8 mm. long, green and pubescent when in anthesis, straw color and glabrous when in fruit; calyx 4 to 5 mm. long, green, pubescent below the middle, divided to the middle into 5 glabrous ligulate segments; corolla whitish, about as long as the calyx, apparently 2-lipped, the lower lip cleft and ciliate toward the apex on the outer side, the upper one unequally 3-lobed, all the segments readily separating nearly to the base; stamens included; anthers connate at their tips and bearing tuftlets of ciliate hairs, oblongish, 1 to 1.5 mm. long; filaments finely winged, subglabrous; style terete, glabrous, strict, bearing a small sparsely ciliate terminal stigma; berry ellipsoidal, crowned by the calyx teeth, 5 mm. long, 3 mm. in diameter, indehiscent, the thin sides ultimately bursting to allow the seeds to escape and leaving the strong longitudinal ridges intact; seeds numerous, brown, smooth, less than 0.5 mm. in length, nearly as wide, distinctly 3-angled.

Type specimen 9099, *A. D. E. Elmer*, Lueban, Province of Tayabas, Luzon, May, 1907.

Rare in clayey soil of woods at 2500 feet of mount Banahao.

Its berry like fruits, not capsules, place it with *Pratia*, yet its triquetrous seed is a character of *Lobelia*. From de-

scriptions it seems to be related to *L. trigona* Roxb. and *L. chinensis* Lour. but is distinct from either.