

PROPERTY OF THE BOTANY DEPARTMENT

DO NOT REMOVE FROM THE HERBARIUM

Vol. I.]

[Part 8.

FLORA
OF
TRINIDAD AND TOBAGO

UMBELLIFERAE

ARALIACEAE

BY
E. E. CHEESMAN

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COHORT 15. UMBELLALES

BY

By E. E. CHEESMAN *

Herbs	1. <i>Umbelliferae</i>
Woody Plants	2. <i>Araliaceae</i>

FAMILY 1. UMBELLIFERAE

Herbs, rarely shrubs, very rarely trees. Petioles usually sheathing at the base. Lvs. often finely dissected (but not in Trinidad genera). Fls. small, in umbels or heads, hermaphrodite or polygamo-dioecious. Calyx tube joined to the ovary, lobes small or wanting. Pet. 5, equal or the outer ones larger. Stam. 5. Ovary inferior, 2-celled crowned by a disc; styles 2; ovules solitary in each cell. Fr. dry, marked by longitudinal ribs between which are oil-passages, separating into 2 carpels, not opening, each carpel 1-seeded.

Apium graveolens L. (celery), *Daucus Carota* L. (carrot) and *Petroselinum hortense* Hoffm. (parsley) are grown to some extent in the Colony. *Arracacha xanthorrhiza* Bancroft (*A. esculenta* DC) recorded from Trinidad by Grisebach, is a native of S. America and unknown in Trinidad except under cultivation.

Leaves orbicular.

Petals valvate	1. <i>Hydrocotyle</i>
Petals imbricate	2. <i>Centella</i>

Leaves pointed or blunt, not orbicular.

Fls. in panicles of umbels	3. <i>Spananthe</i>
Fls. in dense cylindrical heads	4. <i>Eryngium</i>

1. HYDROCOTYLE L.

Herbs, either perennial, prostrate, and rooting at the nodes or annual and erect. Lvs. entire and palmately veined, or palmately cut, cordate at the base or peltate. Umbels simple,

* The manuscript was critically read at Kew by Mr. N. Y. Sandwith, whose assistance is gratefully acknowledged.

or rarely irregularly compound, or the flowers also in distant whorls below the terminal umbel. *Bracts* of the involucre few or none. *Fls.* white, rarely purplish, occasionally unisexual. *Cal. teeth* minute or wanting. *Pet.* entire, acute, valvate. *Disc* well developed. *Fr.* compressed from the side, the line of junction of the carpels narrow, primary ridges nervedlike, secondary faint or none.

Leaves deeply cordate at base.

Lvs. barely exceeding 1 cm. broad ... 1. *H. rotundifolia*

Lvs. up to 3 or 4 cm. broad 2. *H. Hazenii*

Leaves peltate 3. *H. umbellata*

1. *H. rotundifolia* Roxb.

H. pusilla of Hart's List.

Very delicate creeping herb; *petioles* 0.5–1.5 cm. long, *leaf-blades* thin, orbicular, 0.5–1.0 cm. across or little more, with shallow crenate lobes, glabrous; *pedu.* about 1 cm. long; *sep.* less than 1 mm.; *fr.* barely 1 mm. long, a little broader than long, constricted between the carpels.

Grassy places about Port-of-Spain; a native of Asia apparently naturalized here, though only collected in the environs of the Royal Botanic Gardens.

2. *H. Hazenii* Rose.

Bull. Torr. Bot. Club 48. 335 (1922).

Creeping herb, rooting at the nodes; *petioles* slender, 2–5 cm. long, hairy, the hairiness more pronounced just below the blade, *leaf-blades* nearly orbicular, 2.5 cm. across or less, the sinus usually narrow, margins doubly crenate, the crenations low and broad, blades somewhat hairy or almost glabrous above, paler and glabrous beneath; *pedu.* slender, hairy above, longer than the petiole; *fl.* in a small compact umbel on *pedicels* 1–2 mm. long.

Wet rocks and banks at Maracas Waterfall (Herb. Trin. 9493, Britton, Hazen and Mendelson); Quare River (Herb. Trin. 10668, R.O.W. & W.G.F.) Trinidad.

Only recorded from Trinidad.

3. *H. umbellata* L.

Griseb. Fl. 307; Fawc. & Rendl. Fl. Jam. 5. 424.

Creeping herb, glabrous; *lvs.* peltate, *petioles* up to 13 cm. long (to 25 cm. or more ex Fawc. & Rendl.) *blades* quite round or somewhat kidney-shaped, up to 7 cm. across, broadly and shallowly crenate; *fls.* in simple terminal umbels on *peduncles* as long as the petioles; *involucral bracts* numerous, small, ovate; *pedicels* 4–12 mm. long, slender; *fr.* about 2 mm. long, broader than long, primary ridges prominent.

Icacos savannah (Herb. Trin. 2783 coll. 1861) Trinidad. Not recently collected, but a barren specimen apparently of this species was noted between Cedros and Icacos in September 1940.

West Indies ; N. and S. America ; S. Africa.

2. CENTELLA L.

Herbs, habit of *Hydrocotyle*. *Pet.* entire, blunt, somewhat broad, imbricate. *Fr.* compressed from the side, primary ridges nervelike, secondary sometimes rather prominent, pericarp often hard.

1. *C. asiatica* (L.) Urb.
Hydrocotyle asiatica L.
H. repanda Pers.

Griseb. Fl. 307 : Urb. Symb. Ant. 4. 472 and 8. 511 : Fawc. & Rendl. Fl. Jam. 5. 425 : Britt. Fl. Berm. 273.

Creeping herb, rooting at nodes ; *petioles* 2-10 cm. long, hairy or glabrous ; *leaf-blades* roundish, 2-4 cm. long and wide, cordate at base, coarsely toothed, sometimes hairy when young, becoming glabrous or retaining pubescence on the veins beneath ; *infl.* axillary ; *pedu.* much shorter than the *petioles* ; *involucral bracts* ovate, 2-4 mm. long, embracing the 2-4 flowers of the umbel ; *fr.* about 3 mm. long, 4-5 mm. broad, prominently ribbed.

Saline Bay, Trinidad (Herb. Trin. 10402, Britton & Nowell).
Warmer regions of the whole world.

3. SPANANTHE Jacq.

Herbs, dichotomously branched, glabrous or sparsely hairy. *Lvs.* usually opposite, toothed ; *stip.* membranous, dry, cut ; dry hairs also often present at the top of the petiole. *Umbels* simple, few or in leafy panicles. *Involucral bracts* numerous, free. *Cal. teeth* somewhat prominent. *Pet.* obovate. *Fr.* compressed from the back, very narrowly constricted at the junction of the carpels.

1. *S. paniculata* Jacq.
Griseb. Fl. 307.

Herb 30-90 cm. high ; *stems* round, hollow, glabrous ; *lvs.* triangular-ovate, 4-10 cm. long, 2-8 cm. wide, truncate at base, long-acuminate at apex, coarsely toothed, sparsely hairy on both surfaces, *petioles* 1-4 cm. long, with a ring of hairs at the junction of petiole and blade ; *umbels* 6-8 fld., in spreading leafy panicles ; *involucral bracts* linear, 2 mm. long ; *petals* white,

1 mm. long; fruit 3 mm. long, glabrous, the carpels almost separated.

Along streams and on shaded banks, Trinidad.
Mexico to Brazil.

4. ERYNGIUM L.

Herbs, often prickly. *Lvs.* spiny-toothed, lobed, or cut, rarely entire. *Fls.* sessile in dense heads or spikes, each subtended by a bract, the outer bracts forming a spiny or star-shaped involucre. *Cal. teeth* rigid and prickly. *Pet.* erect, with an inflexed point. *Disc* with a thickened margin. *Fr.* ovoid or obovoid, scarcely compressed, the line of junction of the carpels broad.

1. *E. foetidum* L.

Griseb. Fl. 308: Urb. Symb. Ant. 4, 472 and 8, 511: Fawc. & Rendl. Fl. Jam. 5, 427.

Herb, biennial, about 30 cm. high; *lvs.* at first radical, lanceolate, oblanceolate or narrowly oblong, blunt at apex, clasping the stem at the base, coarsely toothed, the teeth with very fine sharp points, up to 25 cm. long and 4 cm. broad; stem-leaves, the lower like the radical, becoming gradually smaller and more deeply toothed, until they become deeply cleft and bractlike; *flowering stems* dichasially branched; *heads* cylindrical, 1 cm. long or more, with *involucres* of 5-6 leafy, prickly bracts; *cal. lobes* 1 mm. or less; *pet.* shorter, white; *fr.* scaly, 1-2 mm. long.

Common in waste or cultivated ground, Trinidad and Tobago.

West Indies and trop. cont. America.

FAMILY 2. ARALIACEAE

Trees or *shrubs*, very rarely *herbs*, sometimes climbing, often tomentose with stellate hairs. *Lvs.* usually alternate, entire or variously divided. *Stip.* joined to the petiole, sometimes not distinct from its dilated base, sometimes joined within the petiole and produced into a blade, rarely absent. *Fls.* in heads, umbels, spikes or small racemes, regular, usually small, often yellowish-green, hermaphrodite, polygamous, or rarely dioecious. *Cal.* ringlike or broadly and shortly cup-shaped, truncate, wavy, or with as many teeth or lobes as there are petals. *Pet.* usually 5 (3- numerous), often with a broad insertion at the base, sometimes cohering to form a cap. *Stam.* as many as the petals, rarely more. *Ovary* inferior, crowned by a *disc*, 1- many-celled; *styles* as many as the cells. *Fr.* a drupe

or less often a berry, exocarp fleshy, endocarp divided into bony segments as many as the ovary cells (*pyrenes*). *Seeds* one in each *pyrene*.

Leaves digitately compound 1. *Didymopanax*

Leaves simple.

Infl. a raceme of umbels 2. *Dendropanax*

Infl. a panicle of heads 3. *Oreopanax*

1. DIDYMOPANAX *Dcne. & Planch.*

Trees or *shrubs*, with the inflorescences and under surfaces of leaves usually covered with a short, thick, stellate, rusty or sparkling down. *Lvs.* usually digitate; *lfts.* stalked, leathery entire; *stip.* small, adnate to the petiole. *Umbels* in panicles. *Bracts* minute or wanting. *Fls.* hermaphrodite. *Cal. limb* spreading, 5-toothed. *Pet.* 5, somewhat thick, valvate. *Stam.* 5; *filts.* very short; *anths.* ovate. *Disc* well developed. *Ovary* 2-celled. *Fr.* much flattened, often ridged and ribbed when dry, exocarp slightly fleshy.

Lvs. brown velvety beneath 1. *D. Morototoni*

Lvs. glabrous beneath 2. *D. glabratum*

1. **D. Morototoni** (*Aubl.*) *Dcne. & Planch.* Jereton.

Panax Morototoni *Aubl.* Matchstick tree.

Griseb. Fl. 307 : Urb. Symb. Ant. 1. 205 ; 4. 470 and 8. 509 : Muller in Pulle, Fl. Surin. 3. 162 : Marshall, Trees Trin. and Tob. 63.

Tree, up to 20 m. or more high, unbranched when young, later sparsely branched, the *bark* smooth and marked by annular leaf-scars; *lvs.* clustered at the tips of the trunk and branches, digitate, with 7-10 leaflets, *petioles* 30-60 cm. long, *petiolules* 5-10 cm., *lfts.* obovate-oblong or elliptical oblong, 15-30 cm. long, 5-10 cm. wide (the inner larger than the outer) rounded at base, acuminate at apex, entire, glabrous above, golden or rusty pubescent beneath; *panicle* branches and *pedicels* pubescent; *cal. tube* broadly bell-shaped, about 1 mm. long, *limb* about half as long; *fr.* 5 mm. long, 8 mm. wide and when dry about 1 mm. thick, pubescent or glabrous.

Hillsides and forests in wet or moist districts, Trinidad.

Cuba, Porto Rico, Hispaniola, Guadeloupe, Panama; S. America from Colombia to Brazil.

2. **D. glabratum** (H.B.K.) Dene. & Planch.*Panax glabratum* H.B.K.? *Panax attenuatum* of Griseb. Fl. 306.

Urb. Symb. Ant. 1. 208.

Tree 10 m. or more high; *petioles* up to 30 cm., *petiolules* 3-7 cm. long, *leaflets* elliptical, elliptical-ovate or elliptical-obovate, 10-20 cm. long, 5-10 cm. wide, narrowed at base, rather abruptly acuminate at apex, the point sometimes 2-3 cm. long, entire, glabrous on both surfaces; *panicles* about 20 cm. long and broad; *pedicels* rusty pubescent; *cal. tube* 1 mm., *limb* about as long; *filts.* 2-3 mm. long; *fr.* about 5 mm. long and wide, wrinkled on drying, glabrous.

Forest, near summit of El Tucuche (Herb. Trin. 5254, Broadway and 10125, Williams), and Aripo (12992, Swabey) Trinidad.

Venezuela; Colombia.

2. **DENDROPANAX** Dene. & Planch.(GILIBERTIA R. & P. (1794) non *Gilibertia* J. F. Gmel. (1791))

Trees or *shrubs*, glabrous. *Lvs.* simple, entire, or less often 3-5-fid; *stip.* small, within the petioles, or none. *Umbels* solitary or in short panicles. *Bracts* minute or none. *Pedi.* swelling gradually into the receptacle, continuous with the flower. *Cal. limb* 5-toothed or almost entire. *Pet.* 5, thickish, valvate. *Stam.* 5. *Disc* present. *Ovary* 5-celled; *styles* joined above the middle or at the apex into a column or cone; *stig.* sessile at the apex or sometimes shortly stalked. *Fr.* globose or ovoid, often 5-furrowed on drying; exocarp somewhat fleshy; *pyrenes* compressed from the side or nearly triangular.

1. **D. arboreum** (L.) Dene. & Planch.*Aralia arborea* L.*Gilibertia arborea* (L.) March.

Urb. Symb. Ant. 1. 201; Fawc. & Rendl. Fl. Jam. 5. 419.

Tree, 4-20 m. or sometimes *shrub*; *lvs.* simple, elliptical, elliptical-ovate or elliptical-obovate, 10-20 cm. long, 4-8 cm. wide, narrowed at base, acuminate at apex, entire, glabrous, on *petioles* 3-6 cm. long; *umbels* in short terminal racemes, ending with a compound umbel at the apex; *cal.* about 1 mm. long, the limb almost entire; *pet.* acute, greenish-white; *fr.* 5-7 mm. long.

Trinidad; Tabaquite (Dannouse, May 3, 1905). Not recently collected.

West Indies; trop. cont. America.

3. **OREOPANAX** Dene. & Planch.

Trees or shrubs. Lvs. entire or variously divided. *Fls.* in heads on racemes or panicles, polygamo-dioecious (male, female and hermaphrodite on different individuals). *Bracts* scalelike, 3 under each flower, 1 large, 2 smaller. *Cal. limb* ringlike, almost entire, or wanting. *Pet.* 5 (4-7) valvate. *Stam.* as many as petals. *Disc* present, not thick. *Ovary* 3-5 or less often 6-7-celled; *styles* rather long, free or more or less joined; *stig.* terminal. *Fr.* globose, smooth, or slightly furrowed on drying, berrylike; endocarp membranous.

1. **O. capitatum** (Jacq.) Dene. & Planch.

Aralia capitata Jacq.

Sciadophyllum capitatum Griseb.

Griseb. Fl. 306 : Urb. Symb. Ant. 1. 198 and 8. 508 : Fav. c. & Rendl. Fl. Jam. 5. 416.

Tree up to 20 m. or *shrub*, sometimes (according to several authorities) epiphytic on other trees; *lvs.* simple, elliptical, those on flowering shoots 10-20 cm. long, 5-10 cm. wide, narrowing at base, sharply acuminate, entire, glabrous, on *petioles* 5-15 cm. long; *panicles* about 15 cm. long, more or less downy with tufted hairs, its ultimate branchlets 0.5-1 cm. long in flower, *heads* about 4 mm. across; *fls.* sessile, whitish, the *male* with 2 styles on the rudimentary ovary, the *female* and *hermaphrodite* with 5-12 styles; *fr.* about 5 mm. in diameter.

Forest, Heights of Aripo (Herb. Trin. 9813 Broadway); Toco (Herb. Trin. 10852 Williams) Trinidad; Tobago ex Urban.

West Indies and trop. cont. America.

Araliaceae undetermined.

Herb. Trin. 8405, Freeman, Guaico woodlands, 22 September 1916 (leaf specimen only) with digitate leaves and deeply incised glabrous leaflets appears to be a member of this family but cannot be identified.

ADDITIONS and CORRECTIONS *

By E. E. CHEESMAN.

p. 3 line 6. For T. L. Sprague read T. A. Sprague.

p. 5 footnote. Should read: Vol. I, Part 1, pp.1-22,

RANUNCULACEAE

p. 6 *Clematis caracasana* DC. A more recent record of this species in Tobago is Sandwith 1867, by Easterfield Road, October 1937. It has not been re-collected in Trinidad since Crueger's time.

* In the fourteen years that have elapsed since the first part of this volume was published, rather numerous additions and corrections have accumulated. A few of them concern omissions, errors or misprints in the original drafts, but most are necessitated by advances in knowledge.

In the first place, extensive collections by officers of the Trinidad Forest Department and by other botanists have added some new species to the Flora and greatly increased the records of local distribution. R. C. Marshall's "Sylviculture of the Trees of Trinidad and Tobago" (1939) contains many distributional notes and vernacular names previously unrecorded, and has been drawn upon freely in the compilation of this Supplement. Many new Tobago records resulted from collections in that island by N. Y. Sandwith in 1937, and others were found in pencil notes made by the late W. E. Broadway in his copies of the earlier parts.

Concurrently, taxonomic research all over the world has revealed the need for some changes of names in accordance with the International Rules of Nomenclature, and several families have been completely revised by specialists and re-arranged in better accordance with present knowledge. As far as possible all these changes have been incorporated here to bring the Flora up to date.

I take pleasure in acknowledging the very great assistance rendered by Mr. N. Y. Sandwith in the preparation of this Supplement. It could not have been completed at this time without the copious notes, often entailing considerable research under difficult conditions, which he has generously supplied.
— E. E. C. (June 1944.)

DILLENIACEAE

p. 8 *Doliocarpus scandens* (Aubl.) Gilg. This name is inadmissible under the present International Rules, being antedated by *D. scandens* Poir. in Lam. Encycl. Suppl. ii. 499 (1811), which is a synonym of the very different *D. major* Gmel. The only other name available is *D. Calinea* Gmel., but that is illegitimate, since it was based on *Calinea scandens* Aubl. and Gmelin should have adopted Aublet's epithet as there was at that date no obstacle to using it. Our species must therefore be given a new name, and in view of the great assistance given by Dr. T. A. Sprague with *Dilleniaceae*, as well as with other families in this Flora, I have pleasure in proposing the combination *Doliocarpus Spraguei*. The species heading should be corrected as follows:

1. **D. Spraguei** nom. nov.

Calinea scandens Aubl.

Doliocarpus scandens (Aubl.) Gilg *non* *D. scandens* Poir.

D. Calinea Gmel. *nom. illegit.*

p. 9 **D. brevipedicellatus** Garcke. It may be noted that the Trinidad Herbarium material is dated February 1845, and the species does not appear to have been collected in Trinidad more recently.

p. 10 line 7. *Doliocarpus calineoides* Eichl. should read: *Doliocarpus calineoides* (Eichl.) Gilg.

ANNONACEAE

The account of this family must now be revised in accordance with a completed treatment of all the American species by R. E. Fries. A major alteration is the suppression of the genus *Alcmene*.

p. 11 in key. Delete first line (Flowers perfect) which becomes superfluous, and last line (Flowers unisexual, trees dioecious . . .

7. **Alcmene**).

p. 12 **Annona montana** Macf. The abbreviation of the author's name, Macf (adyen), should be in italics, as here. Add to the local records after Trinidad (p. 13 line 4): Highmoor, Tobago (Broadway 3123, cited by R. E. Fries).

p. 13 *A. involucrata* Baill. This species is reduced by Fries to *A. purpurea* Moç. & Sessé. Correct species heading and add to references thus:

3. **A. purpurea** Moç. & Sessé.

A. involucrata Baill.

A. Prestoei Hemsl.

Safford in Cont. U.S. Nat. Herb. 32. t. 1516 : R. E. Fries in Acta Horti Bergiani, Band 10, no. 2, p. 216 (1931).

Several specimens from the Botanic Gardens are cited by Fries, viz., Hart in Herb. Trin. 4746 and 5987 and Prestoe (*A. Prestoei*) in Herb. Kew.; Herb. Trin. 1560, 6003 in Herb. Berol.; Broadway 5690 (Stockholm).

Add distribution : Mexico, Central America, Panama and Venezuela.

p. 13 **A. glabra** L. An additional locality record is : Toco, Williams in Herb. Trin. 12660 (1932).

p. 14 **A. trinitensis** Safford. An additional locality is Southern Guanapo Road (Herb. Trin. 11989, Williams and Freeman). Fries notes that this endemic may eventually prove to be conspecific with *A. sericea* Dun. of Guiana and Brazil.

p. 14 bottom of page. Herb. Trin. 11470 is referred by Fries to *Rollinia mucosa*.

p. 15 **Rollinia St. Hil.**

Three species are accredited to the Colony by Fries, to be keyed as follows :

Sep. pouched, 2 mm. broad.

Lvs. usually oblong, brownish or glaucous beneath ; corolla 15-25 mm. diam., wings of petals divergent to horizontal 1. *R. exsucca*

Lvs. lanceolate, olivaceous beneath ; corolla about 15 mm. diam., wings of petals horizontal or slightly recurved 1a. *R. Broadwayi*

Sep. not pouched, 4 mm. broad 2. *R. mucosa*

1. **R. exsucca** (Dun.) DC.

Wild Cashimar.
Wild Sugar Apple.

Annona exsucca Dun.

Rollinia multiflora Splitg. (not Splitz. as printed)

R. E. Fries in Acta Horti Bergiani, Band 12, no. 1, p. 142 (1934) : R. C. Marshall, Sylv. Trin. Tob. p. 3 (1939).

1a. **R. Broadwayi** R. E. Fr.

Wild Cashimar.

R. E. Fries in Acta Horti Bergiani, Band 12, no. 1, p. 143 (1934).

Small tree, very similar to *R. exsucca*; *lvs.* thinner, lanceolate or lanceolate-oblong, narrowed to an acute apex, 8–15 cm. long, 3–5 cm. broad, sparsely adpressed-puberulous beneath; *fruit* 1–1.3 cm. diam., spherical, cinereous-tomentellous. Other characters as in key.

Trinidad: Hololo mountain road, St. Ann's (1930). Broadway 7580 in Herb. Kew. and Stockholm; Botanic Gardens, wild on the Look-out Hill (1929), Broadway *sine no.* (Stockholm).

Venezuela.

2. *R. mucosa* (Jacq.) Baill. Add references to R. E. Fries, *l.c.* p. 120 and to Marshall *l.c.* p. 2. Additional localities are: Siparia (Marshall in Herb. Trin. 11589); Arima-Blanchisseuse Road above Verdant Vale (Broadway 6686); Plum Road (Williams in Herb. Trin. 11470). The last two were identified by Fries himself.

Alter distribution to read: West Indies and South America (native home uncertain). Delete Mexico, which was based on an error of labelling.

p. 16 *Duguetia* St. Hil.

Emend the generic description in these respects: young branches scaly or with stellate hairs. *Lvs.* scaly or with stellate hairs beneath.

Insert key:

Indumentum of scales 1. *D. lucida*

Indumentum of stellate hairs 2. *D. tobagensis*

1. *D. lucida* Urb.

Add references to R. E. Fries in Acta Horti Bergiani, Band 12, no. 1, p. 49 (1934) and to R. C. Marshall, Sylv. Trin. Tob. 1 (1939).

Add vernacular names: Balbac, and Wild Apple (*vide* Marshall *l.c.*).

Emend description to include: *lvs.* conspicuously scaly beneath; *sep.* silvery-scaly outside, woolly within; *pet.* scaly and woolly (not glabrous).

Add to localities: Arena Reserve and north-west corner of Southern Watershed Reserve (*vide* Marshall *l.c.*).

Add distribution: St. Vincent (perhaps only in cultivation), British Guiana.

2. *D. tobagensis* (Urb.) R. E. Fries.

Alemene tobagensis Urb.

Urban in Fedde, Rep. 17. 167 (1921): R. E. Fries in Acta Horti Bergiani, Band 12, no. 1, p. 93 (1934).

Small tree; young branches angled, pubescent with yellow, many-rayed stellate hairs; *lvs.* oval, or rarely obovate, with a produced point, 6-15 cm. long, 3-5.5 cm. wide, papery or somewhat leathery in texture, very shortly pubescent on the middle vein, otherwise glabrous and shining above, with stellate hairs beneath set thickly on the middle vein and scattered on the laterals; *petioles* 2-4 mm.; *pedicels* up to 1.2 cm. long; *sep.* pubescent outside with minute stellate hairs, tomentellous within, 1.5 cm. long, up to 7 mm. broad; *outer petals* about 1.4 cm. long, cream-coloured; styles as long as the carpels, erect, shortly hairy.

Tobago: Near Easterfield (Broadway 4191, the type specimen); Menna Road, Lot 42 (Broadway 8926); Great Dog River Valley (Sandwith 1739, October 1937). The last two specimens are in Herb. Kew.

Endemic in Tobago.

p. 17 *Xylopia cubensis* A. Rich. should be called:

1. **X. aromatica** (Lam.) Mart.

Uvaria aromatica Lam.

Xylopia cubensis A. Rich.

X. grandiflora St. Hil.

Griseb. Fl. 6 (excl. syn.); R. E. Fries in Acta Horti Bergiani, Band 10, no. 1, p. 106 (1930).

Extend distribution: West Indies and continental tropical America.

p. 17 *Anaxagorea acuminata* should be cited as:

1. **A. acuminata** (Dun.) St. Hil.

Xylopia acuminata Dun.

Add reference: R. E. Fries in Acta Horti Bergiani, Band 10, no. 1, p. 11 (1930).

p. 18 **Cymbopetalum brasiliense** (Vell.) Benth. Add reference to: R. E. Fries in Acta Horti Bergiani, Band 10, no. 2, p. 184 (1931).

This species is well represented in the herbarium by specimens from Maraval, Blanchisseuse, Maracas, Aripo and the Quare River in the north, and Siparia, Chatham and Cedros in the south. Fries cites also Britton and Freeman 2131 in New York Herb. from the forest at "Brazil".

Alter distribution to: Venezuela, Guiana and Brazil.

p. 18 **Alcmene** Urb. Delete entirely (see *Duguetia tobagensis* above). Urban misinterpreted his material, which gave insufficient evidence for the establishment of a distinct genus.

MENISPERMACEAE

p. 19 Substitute fuller family description and add key, as follows :

Climbing or rarely erect shrubs or small trees. Leaves alternate, usually simple and entire, without stipules. *Flowers* usually small, in cymose panicles or fascicles, unisexual, dioecious (sexes on distinct individuals). *Male flowers* : *Sepals* in 2-4 series, the outer smaller ; *petals* usually smaller than the sepals, free or rarely united, sometimes absent ; *stamens* usually 6 or 3, or indefinite, free or variously united. *Female flowers* : *Staminodes* present or absent ; *carpels* (in local genera) 3 or 1 ; *ovules* 2, soon reduced by abortion to 1. *Fruit* drupaceous, more or less succulent, containing a single, often horseshoe-shaped, seed.

- Sepals in the male flower 4, in the female 1 ;
 petals united ; stamens connate ;
 carpel 1 1. **Cissampelos**
- Sepals and petals in both sexes 6 ; carpels 3.
 Stamens free ; lvs. oblong or elliptical ... 2. **Anomospermum**
- Stamens more or less united ; lvs. cordate
 at base 3. **Odontocarya**

Add new records :

2. **Anomospermum** Miers

Climbing shrubs. Flowers yellowish, not very small, in supra-axillary fascicles or racemes. *Sep.* 6, the outer minute and much smaller than the inner. *Pet.* 6, packed close together, very fleshy, shorter than the inner sepals, with the margins conspicuously inflexed and enveloping the stamens. *Stamens* and staminodes 6. *Carpels* 3, free ; *stigma* sessile or sub-sessile, dilated. *Drupes* oblong, glabrous.

1. **A. Schomburgkii** Miers.

Diels, Mon. in Engl. Pflanzenreich iv. 94, p. 186 (1910) ; and in Pulle, Fl. Surin. 2. 1. 126 (1934) : Krukoff and Moldenke in Brittonia iii, p. 35 (1938).

Branches slender, terete, very finely ribbed ; *lvs.* oblong-elliptic to lanceolate or oblanceolate, cuspidate-acuminate at the apex, attenuate to an acute, obtuse or more or less rounded base, 4-12 cm. long, 2-5.8 cm. broad, glabrous, leathery and more or less shining, and with a very smooth appearance on account of the inconspicuously and very closely reticulate

veinlets, three-nerved at the base; *petioles* 0.6–1.6 cm. long; *fls.* 1–3 in supra-axillary fascicles, or similarly fasciculate along racemes up to 10 cm. long; *pedicels* 0.6–1.5 cm. long; *inner sepals* 6–8 mm. long, 4–6 mm. broad; *drupes* about 2.8 cm. long and 1–1.5 cm. in diameter.

Trinidad: Broadway 7552, in U.S. Nat. Herb., *vide* Krukoff and Moldenke in Bull. Torrey Bot. Cl. lxxviii. 239 (1941).

Guiana, Brazil, Amazonian Peru and Bolivia.

3. *Odontocarya* Miers

Climbers. Leaves cordate at base. Male flowers: Sep. 6, the 3 outer smaller; *pet.* 6, fleshy; *stamens* 6, more or less connate. Female flowers; *Staminodes* 6; *carpels* 3. Fruit 3-toothed at top and base.

DOUBTFUL RECORD

In the late W. E. Broadway's copy of the Flora of Trinidad and Tobago there occurs a manuscript note stating that Broadway 2613 (Trinidad) was determined by Urban in 1922 as *Odontocarya hederifolia* Miers. This specimen is not accessible, and without further information the species cannot be added formally to the Flora, but collectors should look out for it in the Colony.

O. hederifolia Miers is reduced by Diels in Engler's Pflanzenreich, iv. 94. p. 172 to *O. paupera* (Griseb.) Diels, based on *Cocculus pauper* Griseb. and as the distribution of this species is Lesser Antilles and northern South America it is quite likely to occur in Trinidad or Tobago. A description given by Diels in Pulle's Flora of Surinam, 2.1.125 runs as follows: Stem with a shining bark. Leaves herbaceous, shortly hispid on both sides but more so underneath, cordate, entire or lobed, 6–15 cm. long, 6–13 cm. broad; *petioles* 5–10 cm. long. Flowers green.

NYMPHAEACEAE

p. 21 *Castalia* Salisb. The generic name *NYMPHAEA* L. is now conserved against *Castalia* Salisb. and the local species are therefore to be called:

1. *Nymphaea ampla* (Salisb.) DC.
2. *N. Rudgeana* G. F. W. Meyer.
3. *N. amazonum* Mart. & Zucc.

p. 22 footnote. pp. 1–18 should read pp. 1–22.

CRUCIFERAE

p. 24 *Rorippa heterophylla* (Blume) R. O. Williams. This name must be reduced to synonymy. The correct name for the species, under *Rorippa*, is **R. Sinapis** (Burm. f.) Ohwi et Hara in Journ. Jap. Bot. xii. 899 (1936) based on *Sisymbrium Sinapis* Burm. f. Fl. Ind. 140 (1768). Another recent combination is *Nasturtium Sinapis* (Burm. f.) O. E. Schulz in Fedde, Rep. Sp. Nov. xxxiii. 278 (1934). Schulz gives an additional locality record: Belmont, Dec. 1907, Broadway 1996.

p. 25 **Brassica juncea** (L.) Coss. aut. Czern. In synonymy, for *Sinapsis juncea* L. read *Sinapis juncea* L.

CAPPARIDACEAE

p. 26 Emend the latter part of the generic key as follows:
Shrubs or trees; fruit a berry.

Lvs. simple.

Sep. free, or the two outer united ... 3. **Capparis**

Sep. united.

Stam. about three times as long as

the petals 4. **Steriphoma**

Stam. shorter than the petals ... 5. **Morisonia**

Lvs. with 3 leaflets 6. **Crataeva**

For addition of *Crataeva* see note to p. 35.

p. 28 **Cleome aculeata** L. Add Tobago record: Sandwith 1815, Bacolet, October 1937.

p. 31 **Capparis tenuisiliqua** Jacq. I identify as this species: Herb. Trin. 13531, Adames, Tobago, near the Government Farm, March 1940. This appears to be a new record for Tobago, but the determination needs checking.

p. 32 **C. baduacea** L. Recorded from Tobago by Urban (Symb. Ant. 8. 240) probably on the evidence of Broadway 2210 and 4793.

p. 32 **C. flexuosa** L. Add locality: Store Bay, Tobago (Sandwith 1950).

p. 35 **Morisonia americana** L. Marshall (Sylv. Trin. Tob. 5) says of this: "It occurs occasionally in the dry acurel-moussara forests as an understorey species, becoming, in parts, locally frequent, particularly on the ridges. It is also present in the Gulf Islands". Recent collections include Herb. Trin. 12530, Swabey, Cat's Hill Reserve; 12697, Swabey, ? Trinity Hills Res. and 13074, R. O. W. and Dr. Kugler, Marac Quarry.

p. 35 at end of family, add:

6. CRATAEVA L.

Trees or shrubs, glabrous. *Lvs.* with 3 leaflets. *Fls.* large, in corymbose racemes, sometimes polygamous. *Sep.* 4, deciduous. *Petals* 4, long clawed. *Stamens* 8-50, on a short androphore, long-exserted. *Ovary* on a long gynophore, 1-2-locular with 2 placentas; *stig.* sessile. *Berry* large, globose or ovoid.

1. *C. Tapia* L.

Toco

C. gynandra L.

Grischb. Fl. 17: Fawc. & Rendl. Fl. Jam. 3, 235: Went in Pulle, Fl. Surin. 2, 1, 403: Marshall, Sylv. Trin. Tob. 4.

Tree with grey bark; *lvs.* alternate, *petioles* very variable in length, up to more than 15 cm., *leaflets* ovate, elliptical or oblong, up to 18 cm. long, 8 cm. wide, the terminal one rounded or wedge-shaped at base, shortly acuminate at apex, the lateral ones oblique at base and unequal-sided, all membranous, becoming papery or somewhat leathery; *fls.* in dense terminal corymbs; *sepals* 4 (6 in one specimen examined) linear-lanceolate, 1 cm. long, 2 mm. wide; *petals* 4 (-6) unequal, up to 1.5 cm. long, 3 mm. wide, prominently veined like leaves; *stam.* about 30, their *filaments* 2 cm. long; *gynophore* nearly as long as the filaments; *ovary* globose, 2 mm. long; *fruit* globular, 3.5-4 cm. in diameter.

Southern Watershed Reserve, Windbelt Reserve and Toco, Trinidad.

West Indies and continental tropical America.

Note. I refer local material tentatively to this variable species, but the determination needs further investigation when circumstances allow.

VIOLACEAE

p. 35 *Ionidium* Vent. should be called *HYBANTHUS* Jacq. Alter species heading to:

1. *H. Ipecacuanha* (L.) Baill. Bot. Méd. ii. 841 (1884).*Viola Ipecacuanha* L.*Ionidium Ipecacuanha* (L.) Vent.

Delete (on p. 36) "*fls.* not seen". This species was collected in flower at Cedros by R. O. Williams in 1934 (Herb. Trin. 13069) and between Cedros and Icacos in September 1940 by E. E. Cheesman and R. E. D. Baker. Add to printed description: *petals* white, the anterior 2.5 cm. wide, its claw 1 cm. long, the laterals 1 cm. long, the posterior petals 7 mm.

p. 37 **Rinorea Lindeniana** (Tul.) Kuntze. Add reference: Melchior in Notizbl. Bot. Gart. Berlin X. 544-550 (1929). Melchior adds Brazil, Peru and Bolivia to the distribution of this species.

FLACOURTIACEAE

Note that many botanists include in this family certain genera which in our Flora appear under *Samydaceae* (p. 419).

p. 39 **Laetia procera** (Poepp. & Endl.) Eichl. Another vernacular name is Bois Toucan, *vide* Marshall, Sylv. Trin. Tob. 5 (1939).

POLYGALACEAE

p. 43 **Polygala longicaulis** H. B.K. Add reference: Oort in Pulle, Fl. Surin. 2. 1. 414 (1939).

p. 43 **P. adenophora** DC. Add reference: Oort l.c. 412.

p. 44 **P. Timoutou** Aubl. Add reference: Oort l.c. 411.

p. 44 **P. bryzoides** St. Hil. (1829) is antedated by **P. angustifolia** H. B. K. (1821), and the latter name is adopted by Oort, l.c. 408. Add reference also to Blake in Contr. Gray Herb. 47, p. 67 (1916) who gives a Tobago record: Scarborough, 29 Sept. 1912, Broadway 4252 in Herb. Brit. Mus.

The variety *latifolia* becomes *P. angustifolia* var. *latifolia* (St. Hil.) St. Hil. ex Chodat.

p. 45 **P. appressa** Benth. Add reference: Oort l.c. 416.

p. 46 The generic name **Securidaca** L. is conserved against **ELSOTA** Adans. by the Special Committee appointed by the Sixth International Botanical Congress at Amsterdam in 1935. Our species are now to be called:

1. **Securidaca diversifolia** (L.) Blake in Contr. U.S. Nat. Herb. xxiii. 594 (1923). Add reference to Oort in Pulle, Fl. Surin. 2. 1. 421 (1939).

2. **Securidaca lophosoma** (Blake) *comb. nov.*
(*Elsota lophosoma* Blake in Bull. Torrey Bot. Club 53. 467-8).

3. **Securidaca tenuifolia** Chodat.

CARYOPHYLLACEAE

p. 48 **Drymaria cordata** (L.) Willd. Add Tobago to the local distribution, on the evidence of Sandwith 1835, Mount St. George-Castara Road, October 1937.

PORTULACACEAE

p. 51. *Talinum paniculatum* (Jacq.) Gaertn. Add synonym: *Portulaca paniculata* Jacq. Add localities: Erin, Trinidad, Herb. Trin. 11511, Buthn; and Bethesda, Tobago (11827, Williams).

p. 51 *T. triangulare* should be cited as *T. triangulare* (Jacq.) Willd. with synonym *Portulaca triangularis* Jacq. The local distribution is wider than indicated; this species is not infrequently grown in flower gardens and occurs wild in several districts especially in the drier areas.

HYPERICACEAE

p. 54 *Vismia cayennensis* should be cited as *V. cayennensis* (Jacq.) Pers. Add synonym *Hypericum cayennense* Jacq. and references to Eyma in Pulle, Fl. Surin. 3. 1. 75 (1934) and Marshall, Sylv. Trin. Tob. 7 (1939). Marshall gives the additional vernacular name Lacre or La Craie for this and for *V. falcata* Rusby.

p. 54 *V. guianensis* should be cited as *V. guianensis* (Aubl.) Choisy. Add synonym *Hypericum guianense* Aubl. and reference to Eyma in Pulle, Fl. Surin. 3. 1. 80 (1934).

GUTTIFERAE

p. 56. *Clusia tocuchensis* Britt. occurs on the Heights of Aripo (Broadway in Herb. Trin. 9787, det. Britton) as well as on Mount Tucuche.

p. 59. *Marila grandiflora* Griseb. is now known also from Tobago: Sandwith 1928, Roxburgh-Parlatuvier Road, in forest reserve of Main Ridge, plentiful from 6½-8½ mileposts, fl. October 1937. The description "Shrub or small tree" should be altered to "Small or medium-sized tree"; the species commonly occurs as a small tree up to about 10 m. high, but Marshall in Sylv. Trin. Tob. p. 14 gives the height as "about 80 ft." presumably referring to its optimum development in the Northern Range Reserve. Add to description: petals snow-white, reflexed (fide Sandwith in Kew Bull. 1938 p. 355).

p. 60. *Tovomita Eggersii* Vesque. Add common name: Red Mangue.

p. 61. **Symphonia globulifera** L.f. Marshall (Sylv. Trin. Tob. 17) gives the habitat note: " essentially an inhabitant of swampy areas, where it is often locally abundant." Add localities: Rio Claro-Mayaro Road (Herb. Trin. 12235, Swabey) and Arena Reserve (Herb. Trin. 12328, Brooks).

p. 62. **Calophyllum** L. Investigations by the Forest Department since 1929 have shown that the galba common in Trinidad and Tobago is not *C. antillanum* of the West Indies but the Guiana species *C. lucidum* Benth. The fact was discovered when seedlings from Trinidad galba seed were compared with others grown from galba seed imported from Grenada; and in the seedling stage the differences are well marked. Seedling leaves of *C. lucidum* are long, narrow and acuminate, whereas those of *C. antillanum* are blunt or rounded at the apex. Material from mature trees is less easy to distinguish, owing to variation in leaf shape in both species, but the leaves of *C. lucidum* are thicker and when dried present a varnished appearance of the upper surface not shown by dried leaves of *C. antillanum*.

The occurrence of *C. antillanum* in the Colony, apart from planted specimens, is now doubtful; but the two species may be admitted pending further evidence. More study is required before a satisfactory key can be given to separate the species in the field, but for the present the following may be inserted after the generic description:

Lvs. commonly rounded or slightly emarginate at apex, occasionally obtuse, not of varnished appearance when dried 1. *C. antillanum*

Lvs. commonly obtuse, sometimes shortly and broadly acuminate, occasionally rounded or emarginate, of varnished appearance especially on the upper surface when dried 2. *C. lucidum*

The synonymy citations and local records for the first species should be altered as follows:

1. ***C. antillanum* Britton**

C. Calaba Jacq. non L.

C. Jacquinii Fawc. & Rendl.

C. brasiliense Camb. var. *antillanum* (Britton) Standley.

Britton in Britt. & Wils. Sci. Surv. Porto Rico 5. 584 : Jacq. Sel. Stirp. Amer. 269. t. 165 : Fawc. & Rendl. Fl. Jam. 5. 200 : Standley in Trop. Woods no. 30, p. 6 (1932).

Trinidad : Diego Martin, Crueger (Sept. 23rd. 1855) in Herb. Trin. and Herb. Kew. ; Arima, Dannouse (Jan. 15th 1893) in Herb. Trin. ; Port-of-Spain, tree in front of White Hall (1927) Williams in Herb. Trin. 11840 ; perhaps all from planted trees. Doubtfully native in Trinidad or Tobago.

West Indies.

Insert second species :

2. *C. lucidum* Benth.

Engler in Mart. Fl. Bras. xii. i. 397 : Vesque in DC. Mon. Phan., Guttiferae. p. 596.

Tall tree ; young branches sharply tetragonal ; *lvs.* elliptical or oblong elliptical, variable, those on young trees up to 25 cm. long, 10 cm. wide, those on flowering branches commonly about 15 cm. long, 7 cm. wide, or smaller, bluntly acuminate to rounded or slightly emarginate at apex, rounded to bluntly wedge-shaped at base, midrib strongly prominent beneath, lateral veins inconspicuous in the green leaf, well marked on drying ; *petioles* stout, 1-2 cm. long ; *racemes* axillary, about 3 cm. long, with 3 or 4 decussate pairs of flowers and a terminal one ; *pedicels* about 5 mm. long, white ; *fls.* white, fragrant ; *sepals* 4, in pairs, white, rounded, concave, the outer pair 3-4 mm. long, the inner pair about twice as long ; *petals* variable but commonly 4, slightly longer and considerably narrower than the inner sepals ; *stamens* numerous ; *ovary* globose, 2 mm. long ; *drupe* about 2.5 cm. diameter.

Forests in wet districts, Trinidad & Tobago.

Guiana.

p. 63 In third line of key to *Rheedia* L., for cm. read mm. (.... stigmatic disk up to 2.5 mm. wide).

p. 64 *Rheedia acuminata* (Ruiz & Pav.) Pl. & Tr. Add vernacular name : Wild Pomme Rose (ex Marshall, Sylv. Trin. Tob. 15). Add locality : Blanchisseuse Reserve (Herb. Trin. 12482, R. L. Brooks).

MARCGRAVIACEAE

p. 67 **Marcgravia tobagensis** Urb. An additional Tobago record is: *Sandwith* 1855, Mount St. George-Castara road, October 1937.

THEACEAE

p. 70 **Ternstroemia oligostemon** Krug et Urb. An additional record is: *Sandwith* 1916, slopes of Main Ridge above Parlatuvier, fl. and fr. October 1937. The note about incompleteness of material may now be deleted. Marshall (Sylv. Trin. Tob. p. 18) says: "This species is a large evergreen tree reaching a girth of 10 feet (though the majority fall in the 6-7 foot class) and a height of 80 feet or so."

MALVACEAE

p. 78 **Anoda acerifolia** (Zucc.) DC. Add details of Tobago collections: Herb. Trin. 10819, Williams, Government Farm; and 11700, Williams, in wet ditches near Government Farm, December 1926.

p. 80 **Sida glomerata** Cav. The local distribution should read: Banks and waste grounds, Trinidad and Tobago. The species is abundant on waste ground at Store Bay, and has been collected at other stations in Tobago (cf. Urb. Symb. Ant. 8. 415 and *Sandwith* in Kew Bull. 1938 p. 356).

Another species, which falls with *S. glomerata* in our key, has been recorded from Tobago by Urban, and may be distinguished by the following amendment to the key on p. 79:

Lvs. tapering or rounded at the base:

Carpels 5:

Fls. subsessile 2. *S. glomerata*

Fls. on peduncles as long as the calyx... 2a. *S. spinosa*

Insert:

2a. ***S. spinosa*** L.

Urb. Symb. Ant. 8. 414: Britt. & Wils. Sci. Surv. Porto Rico 5. 551.

Annual, finely pubescent, 30-60 cm.; *lvs.* ovate to oblong-lanceolate, 2-5 cm. long, truncate or subcordate at base, crenate-dentate, *petioles* of the larger leaves with a small spine-

like tubercle at the base; *stip.* linear; *fls.* yellow, axillary, on peduncles shorter than the petioles; *cal.* lobes triangular, acute; *carp.* 5, dehiscent at the apex into 2 beaks.

Tobago (ex Urb. loc. cit., but no specimen seen by us).

Eastern U.S.A. West Indies south to Grenada, and continental tropical America; also in the Old World tropics.

p. 80 **Sida acuta** Burm. Add the following note: Sandwith 1822, Store Bay, Tobago, agrees with authentic specimens of *S. antillensis* Urb. Symb. Ant. 5. 418 (1908). This species is treated as a form of the variable *S. acuta* by Britton and Wilson, and the same treatment has been adopted in this Flora. Sandwith notes, however, that the habit, the shape and indumentum of the leaves, and the very short (about 0.75 mm.) awns of the carpels give these specimens a distinct facies. (Kew Bull. 1938 p. 356).

Without further study of the highly variable *S. acuta* it is impossible to give a satisfactory key for the separation of *S. antillensis*, described by Urban himself as intermediate in characters between *S. rhombifolia* and *S. spinosa*. Its recognition may be facilitated by the following description adapted from Urban:

3a. **S. antillensis** Urban

Urb. Symb. Ant. 5. 418 (1908)

Subshrub, 60 cm. — 1 m. high; young branches very shortly pubescent with stellate hairs, later becoming glabrous; *lvs.* ovate-oblong to oblong lanceolate, 1.5-5 cm. long, 0.5-1.5 cm. wide, blunt or rounded at base, acute or bluntish at apex, toothed nearly to the base, glabrous or minutely hairy above, paler and sparsely stellate-pubescent beneath, *petioles* 2-5 mm. long, *stipules* 4-8 mm.; *pedicels* axillary, 2-12 mm. long, usually with accessory buds or flowering branchlets at the base; *calyx* 7-8 mm. long, 5-fid to the middle or nearly so, puberulent with minute stellate hairs without; *petals* 11-12 mm. long, about 9 mm. wide, very shortly ciliate on the margin, hairy at base; *carpel awns* 0.5-1.5 mm. long.

Tobago: Store Bay, on bare waste ground near cliffs. Sandwith 1822 in Herb. Kew.

West Indies (Cuba, Porto Rico, Guadeloupe, St. Vincent)

p. 81 **Sida urens** L. Add Tobago record: Herb. Trin. 13501, Cheesman, Mount St. George-Castara road, March 1940. Also previously recorded from Tobago by Urban (Symb. Ant. 8. 418).

p. 84 **Urena lobata** L. Add Tobago record: Herb. Trin. 13947, Cheesman, Runnymede, April 1940. Also previously recorded from Tobago by Urban (Symb. Ant. 8. 421). Add the common name, Cousin Mahoe, for this species as well as *U. sinuata*.

p. 85 **Pavonia** L. Many authorities do not separate *Typhalaea* Neck., *Malache* B. Vogel or *Lebretonia* Schrank from the genus *Pavonia* L. Under *Pavonia* our species are:

1. **P. spinifex** (L.) Cav.
Hibiscus spinifex L.
2. **P. fruticosa** (Mill.) Fawc. & Rendl.

Add Tobago to local distribution of this species. It was recorded from Tobago by Urban (Symb. Ant. 8. 422) probably on the evidence of *Broadway* 4458, Menna Road, April 1913. More recent collections are Herb. Trin. 11083, R. O. Williams, Charlotteville, June 1925; and *Sandwith* 1885, Parlatuvier, October 1937.

3. **P. castaneifolia** St. Hil. & Naud.
4. **P. spicata** Cav.
5. **P. sessiliflora** H.B.K.

p. 88 **Hibiscus vitifolius** L. Recorded from Trinidad by Urban (Symb. Ant. 8. 426) but not seen by us or, apparently, recently collected in Trinidad.

p. 88 **Hibiscus bifurcatus** Cav. Add locality: Manzanilla, Trinidad (Cheesman in Herb. Trin. 13268, February 1938).

p. 89 **Abelmoschus** *Abelmoschus* (L.) Cook & Collins. This name, being a tautonym, is inadmissible under current International Rules. Under *Abelmoschus* the species must be called **Abelmoschus moschatus** Medic. Under *Hibiscus* its name is **Hibiscus Abelmoschus** L. and the latter combination is preferred by many authorities. The edible ochro mentioned in the text above (p. 89 line 19) is, under *Hibiscus*, *H. esculentus* L.

p. 90 **Gossypium** L. Genetical and taxonomic studies of this genus at the Cotton Research Station, Trinidad, in recent years have rendered desirable a complete revision of the treatment on pp. 90-92. Substitute the following account, in the drafting of which the writer owes much to notes kindly furnished by Mr. J. B. Hutchinson :

19. GOSSYPIUM L.

Sub-shrubs, shrubs or small *trees*, usually black-dotted with glands in all their parts, with branches of two kinds, the lower vegetative, the upper fruiting. *Lvs.* 3-9 lobed. *Fls.* large, showy, solitary at the nodes of the fruiting branches. *Epicalyx* of 3 bracteoles, large, leafy, more or less heart-shaped, usually deeply incised. *Cal.* truncate or 5-toothed. *Pet.* usually yellow, asymmetrically wedge-shaped. *Style* club-shaped, furrowed at the apex, furrows typically 3 or 4, occasionally 2 or 5. *Caps.* loculicidal, loculi as many as the furrows of the style, many-seeded. *Seeds* naked or variously covered with a white, green or brown fuzz, beneath a floss of white or brown, convoluted, unicellular hairs.

Commercial cottons of several species and varieties are grown experimentally in Trinidad. Apart from these, perennial cottons occur commonly in house-yards and may occasionally be found on abandoned lands near habitation. The latter have been encouraged by man for a long period, even when not deliberately planted (cf. Hutchinson, J. B. "Notes on the native cottons of Trinidad" in *Tropical Agriculture* 20 (1943) pp. 235-238). They include representatives of two species :

- Staminal column short, filaments long,
upper filaments longer than the
lower, anthers loosely arranged. . . . 1. *G. hirsutum* var.
marie-galante
- Staminal column long, filaments short, all
about the same length, anthers closely
packed 2. *G. barbadense*

1. ***G. hirsutum* L. var. *marie-galante* (Chev.) J. B. Hutchinson.**

Perennial; 2-3 m. high or higher; upper branches angled, purplish or green; *lvs.* deeply 3-5 lobed, (those on fruiting branches occasionally entire), hairy or pubescent beneath, especially along the veins, the lobes ovate, oblong-ovate or oblong, acute or acuminate; *petioles* 2-6 cm. long, *blades*,

6-15 cm. long, 5-10 cm. wide, *stipules* about 1 cm., deciduous; *bracteoles* deeply incised, with 5-9 narrow teeth; *calyx lobes* usually acuminate; *petals* 3-4 cm. long, cream or pale yellow, changing to pink on fading, often purple-blotched at base; *staminal column* short, *filaments* long, the upper longer than the lower, *anthers* loosely arranged; *capsule* roundish, acuminate, smooth with buried glands, scarcely exceeding the bracteoles in length, 3-5-locular; *seeds* about 7 mm. long, usually with a green fuzz (brownish in age) below the lint.

Coastal banks and waste grounds inland in the drier areas of the Colony. Possibly indigenous in small areas, but generally distributed by cultivation. Predominant among "house-yard" cottons of the cane belt.

Coasts and islands of the Caribbean, and south to Brazil

Notes: (1) Typical *G. hirsutum* is an annual cotton, represented in the Colony only by material of recent introduction.

(2) A laciniate leaved form of the variety occurs, but is rare, in Trinidad (Herb. Trin. 7599, *Broadway*, Moruga).

(3) A wild form, distinguished by its very small capsules and seeds, and very inferior lint, occurs on the neighbouring Venezuelan island of Patos.

2. *G. barbadense* L.

Perennial, 2-3 m. high or higher; *branches* rounded below, angled above, glabrous, with prominent glands; *lvs.* deeply 3-5-lobed, glabrous or almost so, except when very young, the lobes ovate to oblong-ovate, acute or acuminate; *petioles* 5-10 cm. long, *blades* up to 20 cm. long, 25 cm. wide across the lateral lobes, the central lobe 5-8 cm. wide, *stipules* linear-lanceolate, those on the flowering branches often broad and oblique; *bracteoles* at flowering 4-6 cm. long, with 9-13 narrow long-pointed teeth; *calyx lobes* broadly deltoid, bluntish or rounded; *petals* 6-8 cm. long, cream or yellow, changing to pink on fading, purple-blotched at base; *staminal column* long, *filaments* short, all about the same length, *anthers* closely packed; *capsule* oblong, acuminate, up to 7 cm. long or longer, pitted with sunken glands, usually 3-locular; *seeds* of each loculus either free or joined (see note below), 1-1.5 cm. long, fuzzy, or naked beneath the lint except for a tuft of fuzz at the beak.

Common to predominant among "house-yard" cottons of the orchard belt, being ecologically adapted to moister conditions than those favouring *G. hirsutum* var. *marie-galante*. Scarcely naturalized or able to maintain itself without the help of man.

South America. Cultivated in the tropics of both hemispheres.

Note: Typical *G. barbadense* has the seeds free, but so-called "Kidney Cottons" have all the seeds in each loculus joined into one mass. The kidney-seeded forms are now referred to var. *braziliense* (Macf.) J. B. Hutchinson (*G. braziliense* Macf.; *G. lapideum* Tussac). Both free-seeded and kidney-seeded forms of *G. barbadense* occur in the Colony.

BOMBACACEAE

p. 92 A Tobago record of *Quararibea turbinata* (Sw.) Poir. was overlooked in the treatment of this family. Modify last line of key to genera:

Lvs. simple:

- | | |
|-------------------------------------|----------------------|
| Fruit a long capsule | 3. <i>Ochroma</i> |
| Fruit subglobose, indehiscent | 4. <i>Quararibea</i> |

After *Ochroma* Sw. (p. 95) add:

4. *QUARARIBEA* Aubl.

Trees. Lvs. simple. Fls. small, solitary or clustered in the axils. Cal. tubular-obconical, 3-5-lobed. Pet. 5. Staminal column toothed at the top, bearing numerous sessile anthers. Ovary 2-3-celled; ovules 2 in each cell; style slender; stig. entire or slightly lobed. Fruit subglobose, indehiscent, leathery.

1. *Q. turbinata* (Sw.) Poir.

Myrodia turbinata Sw.

Britt. & Wils. Sci. Surv. Porto Rico 5. 569: Urb. Symb. Ant. 8. 428: Uittien in Pulle, Fl. Surin. 3. 1. 28.

Small tree, up to about 10 m., with smooth bark; lvs. elliptical or oblong. 7-15 cm. long, acute, acuminate or blunt at apex, narrowed or rounded at base, entire, on petioles 0.5-1.5 cm. long; peduncles shorter than the petioles; cal. 8-12 mm. long, top-shaped in the bud; petals nearly white, about twice as long as the calyx; anth. crowded at the end of the lobes of the staminal tube; fruit 1-2 cm. in diameter, commonly 1-celled.

Tobago (ex Urban, *loc. cit.*) presumably in forests.
West Indies and continental tropical America.

p. 93 line 1. Correct misprint "*voules*" to *ovules*.

***Pachira aquatica* Aubl.** Add synonym: *Bombax aquaticum* (Aubl.) Schum. Schumann, Ducke and Uittien all reduce the genus *Pachira* Aubl. to *Bombax* Aubl.; but Pittier and Bakhuisen van den Brink maintain it as distinct. Add reference to Uittien in Pulle, Fl. Surin. 3. 1. 29 (1932).

Pachira insignis should be cited as ***P. insignis* (Sw.) Sav.** Add synonyms: *Carolinea insignis* Sw.; *Bombax spectabile* Ulbrich, in Engl. Bot. Jahrb. xlix. 544 (1913); *B. insigne* (Sw.) Schum. non *B. insigne* Wallich.

p. 94 *Ceiba pentandra* (L.) Gaertn. Correct citation to:

***C. occidentalis* (Spreng.) Burkill**

Bombax occidentale Spreng.

Ceiba pentandra var. *caribaea* (DC.) Backer.

Eriodendron anfractuosum DC. var. *caribaeum* DC.

Add references to Burkill in Kew Bull. 1935 p. 317 and to Bakhuisen van den Brink in Bull. Jard. Bot. Buitenzorg, ser. 3. 6. 196 (1924).

Alter distribution to: Tropical America and Africa.

Add note: This species or variety differs in several characters from *C. pentandra* var. *indica* (DC.) Bakh. of Asia and Africa. The latter, a smaller tree, is the *Ceiba* that yields commercial kapok.

STERCULIACEAE

p. 96 After the description of the family and the note on cacao add this additional note: *Theobroma Cacao* L. was omitted from the Flora on the assumption that it is entirely an introduced crop plant, but wild cacao trees, though rare, have been found in forests in eastern districts of Trinidad and they differ in type from the cacao cultivated in the Colony at the present time. These trees may be relics of seventeenth century plantations, which are known to have been of different type from the present-day cacao. On the other hand the possibility that *Th. Cacao* is indigenous in Trinidad cannot be entirely eliminated; and at least it would seem that the species must be

Sloanea trinitensis *Sandwith*. Additional records are : Blanchisseuse Road forests, 11th milepost, fr. April 1927, *Broadway* 6906 ; Arena Reserve, March 1931, *R. C. Marshall* in Herb. Trin. 12491.

Marshall (Sylv. Trin. Tob. 26) gives vernacular names : Cabrehash ; Candero.

p. 110 **Sloanea trichosticha** *Williams & Sandwith*. Add records : Arena Reserve, Feb. 1931, *Jean Pierre* in Herb. Trin. 12468 ; *ibid.*, Jan. 1932, *F. R. Gill* in Herb. Trin. 12623. Marshall (Sylv. Trin. Tob. 26) gives vernacular name : Bois noir.

p. 112 **Muntingia Calabura** *L.* Amplify local distribution : Trinidad : Guapo, *Dannouse*, August 1904 ; Manzanilla, Herb. Trin. 648 ; Mouth of Godineau River, *Britton* 1160 ; Seashore, Quinam, *Williams* in Herb. Trin. 12191. Tobago : Castara, *Sandwith* 1830, October 1937.

p. 113 In key to families of *Geraniales* alter *Dichapetalaceae* to **Chailletiaceae** (cf. note to p. 126).

OXALIDACEAE

p. 114 Modify later part of key to species of *Oxalis* thus :

Fls. yellow, stems woody :

Lvs. scattered ; sepals about 3 mm.

long 4. *O. sepium*

Lvs. and fls. usually densely crowded

at the apex of branchlets ; sepals

5-6 mm. long 4a. *O. frutescens*

Fls. pink, stems not woody or only so

below 5. *O. Barrelieri*

p. 114 *Oxalis corymbosa* *DC.* Knuth in his monograph in Engler, *Pflanzenreich*, IV. 130 p. 250 (1930) gives precedence to the name **O. Martiana** *Zucc.* (1823-24) over *O. corymbosa* *DC.* (1824).

p. 115 **Oxalis corniculata** *L.* The form of this species described as *O. trinidadensis* Knuth is probably to be referred to the var. *repens* (Thunb.) *Zucc.* which is recorded from Trinidad by Knuth himself (*loc. cit. supra* p. 151) on the strength of *Broadway* 2244.

p. 116 Add species :

4A. **O. frutescens** L.

O. Plumieri Jacq.

Lotoxalis frutescens (L.) Small

L. Sp. Pl. ed. 1, 435 (1753) : N. Amer. Fl. 25, 47 : R. Knuth in Engl. Pflanzenreich IV. 130 p. 73 (1930).

Shrubby herb up to nearly 1 m. high, the older branches very woody and conspicuously marked with leaf-scars, young branches pubescent ; *lvs.* usually densely crowded, on pubescent petioles ; *lfts.* oblong to elliptic, rounded and usually conspicuously notched at the apex, up to 2.5 cm. long, ciliate and often more or less pilose beneath ; *infl.* about equalling the leaves, with pubescent peduncle and pedicels ; *pedicels* 3-7 mm. long ; *sepals* 5-6 mm. long, lanceolate or oblong-lanceolate, more or less hairy near the base ; *petals* about twice the length of the sepals ; longer filaments appendaged below the middle, pubescent ; *styles* pubescent ; *capsule* not seen.

Trinidad : Sieber 252, Broadway 2832, *vide* Knuth.

Tobago : Broadway 3635 and 4152, *vide* Knuth.

Lesser Antilles and northern South America.

p. 117 *Biophytum Reinwardtii*. Correct citation to :

1. **B. Reinwardtii** (Zucc.) Klotzsch.

Oxalis Reinwardtii Zucc.

Biophytum sensitivum (L.) DC. var. *Reinwardtii* (Zucc.) Guillaumin.

Edgew. & Hook. f. Fl. Brit. India i, part 2, p. 437 :

R. Knuth in Engl. Pflanzenreich IV. 130. p. 395.

Note : Knuth (*loc. cit.* p. 394) refers Broadway 2785 from Government House Gardens to *B. sensitivum* (L.) DC, but in our opinion this collection is to be referred to *B. Reinwardtii*, as is Broadway 9307, also from the Botanic Gardens, St. Ann's.

ERYTHROXYLACEAE

p. 123 For last two lines of key, substitute :

Lvs. grey or pale green beneath, the margin not revolute

Pedicels 5-8 mm. long 7. *E. ovatum*

Pedicels less than 5 mm. long 8. *E. cumanense*

p. 124 **Erythroxylum carthagenense** Jacq. A more recent collection is R. L. Brooks in Herb. Trin. 12485, Blanchisseuse Reserve, Trinidad, April 1931.

p. 125 **E. ovatum** Cav. Add notes : *E. ovatum* var. *splendens* O. E. Schulz in Urb. Symb. Ant. 5, 208 and in Engler, Pflanzenreich IV. 134, p. 95 was inadvertently omitted from the Flora. It was recorded from Tobago (Bacolet River, near Calder Hall, Eggers 5675) as well as from Barbados and St. Vincent. No authentic material has been seen, but a St. Vincent specimen (coll. *Guilding*) at Kew probably agrees and suggests that this variety is to be referred to *E. cumanense* H.B.K.

Add species :

8. **E. cumanense** H.B.K.

H.B.K. Nov. Gen. & Sp. Pl. v. 137 : O. E. Schulz, Mon. in Engler, Pflanzenreich, iv. 134, p. 91 : Sandwith in Kew Bull. 1938 p. 357.

Small tree with horizontally spreading branches and many horizontal short twiggy branchlets covered with the scars of leaves and stipules ; *lvs.* obovate-oblong, rounded and often notched at the apex, cuneate towards the base, typically obtuse and rounded at the base itself, 1.5-6 cm. long, 1-3 cm. broad, rather thick and coriaceous, green and shining and somewhat reticulate above, pale beneath ; *petioles* very short, 1-2 mm. long ; *stipules* triangular, acute, up to 2.5 mm. long ; *fls.* in clusters of 1-5 in the axils of deciduous leaves ; *pedicels* slender, up to 4 mm. long ; *calyx* divided more than half-way, lobes ovate-lanceolate, acute ; *petals* oblong, about 3 mm. long, ligule one-quarter as long as the lamina ; *drupe* oblong or oblong-ovate, 5-8 mm. long.

Trinidad : Cedros, mud volcanoes, May 1850, *Crueger* in Herb. Kew.

Tobago : Buccoo Bay, on sandy promontory by mangrove association, *Sandwith* 1667.

Northern South America.

CHAILLETIACEAE

p. 126 The correct name of Family 5 is **Chailletiaceae**.

MALPIGHIACEAE

p. 127 In key, alter 4. *Banisteria* to 4. **Heteropteris** and delete 7. *Diplopterys*. Cf. notes to p. 132 and p. 138.

p. 128 **Brachypterys ovata** (Cav.) Small. Emend synonymy to :

Banisteria ovata Cav.

Stigmatophyllum ovatum (Cav.) Ndz.

- p. 129 **Stigmaphyllon ciliatum** (Lam.) Juss. Additional collections are: *Lockhart*; *Finlay* 195; *Broadway* 2623, all *fide* Niedenzu in Engler, *Pflanzenreich* iv. 141 p. 514 (1928). Delete *St. Thomas* from the distribution of this species on the evidence of Britton and Wilson (*Sci. Surv. Porto Rico* 5. 441).
 p. 130 *S. Humboldtianum* (DC.) Juss. is reduced by Niedenzu (*loc. cit.* p. 496) to the earlier *S. tiliifolium*. Alter heading and synonyms to:

4. ***S. tiliifolium*** (H.B.K.) Ndz.
Banisteria tiliifolia H.B.K.
Stigmaphyllon Finlayanum Juss.
S. Humboldtianum Juss.
S. adenodon Juss.
S. tiliifolium var. *Finlayanum* (Juss.) Ndz.

The citation of *Eggers* 5726 under this species is an error, as the same collection has been cited above under *S. grenadense*. Niedenzu accepts *Eggers* 5726 as belonging to *S. grenadense*.

S. puberum (Rich.) Juss. Reference may be added to *Koster-mans* in *Pulle, Fl. Surin.* 2. 1. 204 (1936). Additional records are: *Broadway* 2277 and 2753 from Trinidad, and *Broadway* 4086 from Tobago, *fide* Niedenzu (*loc. cit.* 505).

p. 131 ***Banisteriopsis leptocarpa*** (Benth.) R. O. Williams. Additional records are: *Eggers* 1145, Arima (cited by Niedenzu *loc. cit.* 412); *Broadway* 6100, Sangre Grande, 6834, Long Stretch, and 7172, Valencia Road (these last three in *Herb. Kew.*)

p. 131 ***B. lucida*** (Rich.) Small. Add synonym: *Diplopterys Marshalliana* Riley in *Kew Bull.* 1925 p. 135. The localities given under the latter name on p. 138 of the *Flora* may be added here, and also *Broadway* 6910, Cumuto Forest. The species occurs also in Tobago (*Broadway* 4032) *fide* *Broadway* in MS.

pp. 132-134 **BANISTERIA** L. The generic name **Heteropteris** Kunth is conserved against *Banisteria* L. (*vide* *Kew Bull.* 1940, p. 109) and our species therefore become:

1. ***Heteropteris multiflora*** (DC.) Hochreutiner.
Byrsonima multiflora DC.
Malpighia reticulata Poir.
Heteropteris reticulata (Poir.) Ndz. non *H. reticulata* Griseb.
Banisteria reticulata (Poir.) Robinson.

N. Amer. Fl. 25. 637 : Fawc. & Rendl. Fl. Jam. 4. 233 : Kostermans in Pulle, Fl. Surin. 2. 1. 196 (1936).

Add to distribution : Jamaica.

2. **H. nervosa** Juss.

Add reference to Kostermans *l.c.* 193.

3. **H. macrostachya** Juss.

Add reference to Kostermans *l.c.* 192.

Add to localities : Frequent in Tobago.

Add to distribution : Costa Rica.

4. **H. purpurea** (L.) H.B.K.

p. 135 *Mascagnia sepium*. Citation should read :

1. **M. sepium** (Juss.) Griseb. subsp. **bierosa** (Moric. ex Juss.) Griseb. The basis of *M. sepium* is *Hiraea sepium* Juss.

Add records : Fendler 254 ; Herb. Trin. 11967, Morne Bleu ; Broadway 6869 and 9160, Blanchisseuse Road.

p. 136 **M. volubilis** (Sims) Ndz. Add synonym : *Malpighia volubilis* Sims.

p. 137 **Hiraea fagifolia** (DC.) Juss. Add synonym : *Banisteria fagifolia* DC. Add records : Riedle ; and Broadway 2693, Trinidad ; both cited by Niedenzu in Engler, Pflanzenreich iv. 141, p. 137.

H. faginea (Sw.) Ndz. Add to distribution : Nicaragua.

p. 138 **DIPLOPTERYS** A. Juss. Delete. *D. Marshalliana* Riley was described without fruit and proves to be nothing more than *Banisteriopsis lucida* (cf. note on that species above).

Tetrapteryx Cav. Niedenzu records a third species from Trinidad, and the key should read :

Infl. in compound terminal thyrses, with normal and reduced leaves ; samaras more or less sericeous.

Dorsal and intermediate crests of samara conspicuous, wing-like 1. *T. discolor*

Dorsal and intermediate crests of samara reduced, barely visible 2. *T. citrifolia*

Infl. in axillary thyrses, without leaves ; samaras glabrous 3. *T. mucronata*

p. 139 Add species :

3. **T. mucronata** Cav.

Niedenzu in Engler, Pflanzenreich iv. 141, p. 198 (1928) ; Kostermans in Pulle, Fl. Surin. 2. 1. 181 (1936).

Climbing shrub; *lvs.* ovate, elliptic or oblong, 7-12 cm. long, 3.5-7 cm. broad, obtuse, mucronate or acuminate at the apex, from acute to slightly rounded at the base, glabrous, shining above, finely reticulate on both surfaces and with dark glandular dots beneath; *stipules* triangular, 0.3 mm. long; *infl.* an axillary thyse usually shorter than the subtending leaf; *bracts* and *bracteoles* obscure, not leaflike, lanceolate or lanceolate-subulate; *glands* on sepals, if present, 1.5 mm. long; *sepals* 2 mm long; *fls.* 1-1.5 cm. diam.; *petals* glabrous; *samaras* glabrous, nut 4 mm. in diameter, upper wings up to 1.7 cm. long and 7 mm. broad, the lower ones much shorter and narrower, dorsal crest up to 2.5 mm. broad, this and the intermediate crests thorn-shaped at the base.

Trinidad: coll. *Ventenat*, *fide* Niedenzu *l.c.* p. 200 (sub forma *oblonga* Ndz.)

West Indies and northern South America.

Note: The Trinidad plant would be placed by Kostermans in his subsp. *eumucronata* Kosterm. f. *oblonga* (Ndz.) Kosterm.

p. 140 **Byrsonima verbascifolia** (L.) Rich. Add synonym: *Malpighia verbascifolia* L. Add to distribution: Cuba.

p. 141 **B. trinitensis** Juss. Add synonym: *Banisteria umbellata* Sieber ex Juss., in syn. Add note: *Broadway* 7609 (Tucuche) has the leaves shortly and obtusely acuminate, as in *B. martinicensis* Krug et Urb. It is possible that *B. trinitensis* and *B. martinicensis* are conspecific, or that all the Trinidad material should be referred to the latter. *B. martinicensis* has much longer petioles and differently shaped leaves from those of the Sieber type of *B. trinitensis*, which may, indeed have really come from another island.

B. crassifolia. The correct citation is:

B. crassifolia (L.) H.B.K.

Malpighia crassifolia L.

Add note: Niedenzu in Engler Pflanzenreich iv, 141, p. 721 now cites the additional forma *ferruginea* (H.B.K.) Griseb. of his var. *typica* from Trinidad, on the evidence of *Broadway* 2825 and *sine no.* May 1920. On the other hand, he no longer cites a Trinidad specimen under var. *jamaicensis* Urb. & Ndz, but refers Herb. Trin. 2354 to a hybrid, *B. coriacea* X *crassifolia*. To this hybrid he also refers *Hart* 689.

B. spicata Rich. The name becomes:

B. coriacea (Sw.) DC. var. *spicata* (Cav.) Ndz.

Malpighia spicata Cav.

Byrsonima spicata (Cav.) Rich.

Niedenzu in Engl. Pflanzenreich iv. 141. p. 700 : Kostermans in Pulle, Fl. Surin. 2. 1. 230.

The typical form of *B. coriacea* (Malpighia coriacea Sw.), which is var. *Swartziana* Ndz., is confined to Jamaica.

p. 142 *B. gymnocalycina* Juss. Niedenzu (l.c. 757) cites *Crueger* 218 under *B. ceranthera*.

Spachea A. Juss. Niedenzu in Engl. Pflanzenreich iv. 141. p. 587 (1928) refers the Trinidad material of *S. elegans* to his var. *oblonga* Ndz. He reduces *S. perforata* Juss. to *S. parviflora* Juss. var. *perforata* (Juss.) Ndz. A synonym of the latter is *S. littoralis* Juss., which was based on Finlay 198 from Trinidad, but this collection may have been from a cultivated plant. The two species may be distinguished thus :

Glands overtopped by sepals ; petals
usually reflexed, fleshy *S. elegans*

Glands overtopping sepals ; petals erect-
spreading, submembranous *S. parviflora*
var. *perforata*

p. 143 *Malpighia* L. Add to note on *M. coccigera* L. (line 13) : Niedenzu (l.c. 636) cites *M. coccigera* L. var. *microphylla* Ndz. from Trinidad (Sieber 307).

Bunchosia glandulifera (Jacq.) H.B.K. Add synonym : *Malpighia glandulifera* Jacq.

p. 144 line 8. For DOUBTFUL SPECIES read DOUBTFUL RECORDS. Add : 3. *B. MEDIA* (Ait.) DC. (*Malpighia media* Ait.). Griseb. Fl. 115 ; Fawc. & Rendl. Fl. Jam. 4. 230. Niedenzu in Engl. Pflanzenreich iv. 141. p. 655 records this from Trinidad, citing Sieber 351. We have not seen the specimen. The distribution is Central America and West Indies.

The three recorded species of *Bunchosia* may be distinguished as follows :

Ovary and style pubescent 1. *B. glandulifera*

Ovary and style glabrous :

Stigmas distinct 2. *B. nitida*

Stigmas united 3. *B. media*

RUTACEAE

p. 144 In key to genera, alter 2. *Zanthoxylum* to 2. *Fagara*.

p. 145 *Esenbeckia attenuata* Griseb. This species, according to Marshall (Sylv. Trin. Tob. 31) is "fairly widely distributed in rain forest".

pp. 146-9 *Zanthoxylum* L. Many authorities prefer to restrict this generic name to Temperate North American and Asiatic species having only one perianth whorl, with which the stamens are alternate. For the tropical species with both sepals and petals, and with the stamens opposite the sepals, the generic name **Fagara** L. is adopted. Under *Fagara* our species become :

1. **Fagara trifoliata** Sw.
2. **F. Pterota** L.
Schinus Fagara L.
Fagara Fagara (L.) Small
Zanthoxylum Fagara (L.) Sarg.
3. **F. monophylla** Lam.
4. **F. martinicensis** Lam.
5. **F. trinitensis** (R. O. Williams) J. Beard, in Empire Forestry Journal, 21 (1942) p. 14.
Zanthoxylum trinitense R. O. Williams in Fl. Trin. Tob. 1. 48 (1929).
6. **F. microcarpa** (Griseb.) Krug et Urb. in Engl. Bot. Jahrb. xxi. 570.

Under 5. **F. trinitensis** add vernacular name : Bosoo. Add to localities : "Widely distributed in the Colony but nowhere common" ex Marshall, Sylv. Trin. Tob. 33.

BURSERACEAE

p. 153 **Bursera Simaruba** (L.) Sarg. Add Tobago to the local distribution, on the strength of *Broadway* 3497, Chelsea, near Scarborough ; and *Sandwith* 1704, Bacolet Point. According to Marshall (Sylv. Trin. Tob. 35) this species is common on Little Tobago.

p. 154 **Trattinickia rhoifolia** Willd. Add more recent record : Forest round Whitelands, Dec. 1934, *H. G. Kugler* and *R. O. Williams* in Herb. Trin. 13098. In line 6 of description correct cm. to mm.

Add note : *T. Ryanii* F. Didr. in Kjoeb. Vidensk. Meddell. ann. 1857, p. 125 was based on material collected very long ago in Trinidad by Ryan. This is a doubtful species, probably synonymous with *T. rhoifolia*.

SIMAROUBACEAE

p. 155 **Quassia amara** L. The habitat given is perhaps rather too wide. Marshall (Sylv. Trin. Tob. 37) says of this species that he only found it in natural forest in the Cedros district.

p. 156 **Simaba multiflora** Juss. Add more recent record: Herb. Trin. 13373, Cheesman, Aripo Road at 3¼ milepost, fr. April 1939.

p. 157 **Simarouba amara** Aubl. "Quite moderately common in the Forest Reserve in Tobago" *vide* Marshall, Sylv. Trin. Tob. 38.

MELIACEAE

p. 162 **Trichilia oblanceolata** Rusby has an earlier name which must be adopted:

Trichilia Smithii C. DC. in Ann. Conserv. Jard. Bot. Geneve x. 163 (1907). Add Tobago to local distribution.

p. 163 **Guarea trichilioides** L. The combination **Guarea Guara** (Jacq.) P. Wilson, though so nearly a tautonym is not strictly so, and must be adopted by International Rules. Add to local distribution: Central Range Reserve (ex Marshall, Sylv. Trin. Tob. 65).

p. 164 **Carapa guianensis** Aubl. Add Tobago to local distribution. This species occurs in Tobago as a constituent of the association called "crappo-duckwood" forest by Marshall (Sylv. Trin. Tob. 65).

HIPPOCRATEACEAE

pp. 169-172 The American species of this family have recently been revised by A. C. Smith in Brittonia, Vol. 3, No. 3 (1940), and the necessary changes are so radical that it has seemed best to re-write the whole treatment. Delete from middle of p. 169 to end of p. 172, and substitute the following:

FAMILY 1. HIPPOCRATEACEAE

Vines, shrubs or trees. Lvs. usually opposite, simple, petiolate. *Stip.* interpetiolar, small, falling early, sometimes absent. *Infl.* axillary or arising from branchlets below the leaves, or pseudoterminal. *Fls.* small, hermaphrodite, regular, usually pedicellate. *Sep.* usually 5, imbricate, persistent. *Pet.* 5, alternate with sepals, inserted beneath or without the edge of the disk,

often persistent. *Disk* various, often conspicuous, usually annular and continuous (but in *Cheiloclinium* discontinuous and forming staminiferous pockets). *Stam.* usually 3 inserted within the disk; *filaments* usually flattened. *Ovary* superior, often concealed within the disk, sometimes joined to it, 3- (rarely 5-) locular; *ovules* 2-14 in each loculus; *style* usually short (lacking in *Cheiloclinium*); *stig.* usually 3. *Fruit* capsular with 3 divergent carpels or drupaceous with an indehiscent pericarp and usually evanescent dissepiments. *Seeds* few to many, in capsular fruits attached by a basal wing, in drupaceous fruits unwinged.

Fruit capsular of 3 divergent carpels, often separately attached to the receptacle; seeds attached by a basal wing.

Lvs. shallowly toothed; petals minutely bearded within 1. **Hippocratea**

Lvs. entire; petals not bearded.

Fls. 8-16 mm. across.

Panicles pubescent 2. **Prionostemma**

Panicles glabrous 3. **Cuervera**

Fls. 1-2 mm. across 4. **Hylenaea**

Fruit drupaceous; seeds imbedded in mucilaginous pulp, not winged.

Disk continuous; style present 5. **Peritassa**

Disk discontinuous, forming small staminiferous pockets; stigmas sessile, divaricate 6. **Cheiloclinium**

1. HIPPOCRATEA L.

Woody vines. *Lvs.* opposite. *Fls.* in axillary, usually many-flowered, corymbose panicles. *Sep.* 5, imbricate. *Pet.* 5, spreading, transversely barbellate within. *Disk* fleshy, annular-pulvinate, cylindrical or truncate-conical. *Stam.* 3, the filaments often joined to the upper margin of the disk. *Ovary* sharply 3-sided, completely immersed in disk; *style* short; *stig.* inconspicuous; *ovules* usually 6 in each loculus. *Fruit* capsular, of 3 divergent carpels separately attached to a swollen receptacle, flattened, dehiscent, the pericarp papery or thinly coriaceous. *Seeds* 5 or 6 (rarely fewer) flattened, winged.

1. **H. volubilis** L.

H. scandens Jacq.

H. ovata Lam.

A. C. Smith in *Brittonia* 3. 359 (1940).

Vine; *lvs.* mostly elliptical-oblong, acute, acuminate or obtuse at the apex, rounded or wedge-shaped at the base, 4-12 cm. long, 3-6.5 cm. broad, glabrous, leathery, shallowly toothed, *petioles* 5-10 mm. long; *panicles* shorter than or longer than the leaves, rusty-velvety; *fls.* numerous, greenish; *sep.* about 0.5 mm. long; *pet.* oblong, about 2 mm. long; *disk* cup-like; *fruiting carpels* oblong to obovate, 3-6 cm. long, 2-5.5 cm. broad, rounded at the apex; *seeds* samara-like, the *wing* blotched, 2-4.5 cm. long, 2 cm. broad, the body 1.5-2 cm. long.

Trinidad: St. Ann's (Purdie 74), Dabadie (Herb. Trin. 5348, Broadway), Arima (Dannouse), Manzanilla (Britton and Britton 2176) and south coast (several collections).

Tobago: Woods at Trenchfield (Eggers 5595), Green Hill (Sandwith 1708), Bloody Bay (Sandwith 1890).

Florida, West Indies and continental tropical America.

DOUBTFUL SPECIES

HIPPOCRATEA GRANDIFLORA Payer, *Organogr.* 163 pl. 35, f. 34-44 (1857) (non *H. grandiflora* Wall.) is mentioned by A. C. Smith (*loc. cit.* 550) as an insufficiently known species. The plants illustrated by Payer are said to have been collected in Trinidad and St. Vincent, but their identity is doubtful.

2. PRIONOSTEMMA Miers.

Vines. *Lvs.* opposite. *Infl.* axillary towards apices of branchlets, paniculate or pseudocymose with the flowers loosely arranged towards apices of ultimate branchlets. *Sep.* 5, imbricate. *Pet.* 5, narrowed towards base. *Disk* fleshy, annular-pulvinate, conspicuously flattened, puberulent. *Stam.* 3, inserted at the junction of disk and ovary. *Ovary* sharply 3-sided, immersed in disk; *ovules* 8-10 in each loculus. *Fruit* capsular, of 3 divergent carpels separately attached to a swollen receptacle, obovate or obdeltoid, slightly convex on both surfaces, the pericarp coriaceous. *Seeds* 8-10, attached by a basal wing.

1. *P. aspera* (Lam.) Miers

Hippocratea aspera Lam.

H. scutellata Griseb.

Prionostemma scabridula Miers

Hippocratea Vahlia (Camb.) Peyr.

Miers in *Trans. Linn. Soc.* 28. 355 (1872); Griseb. *Fl.* 148; A. C. Smith in *Brittonia* 3. 393 (1940).

Stout vine; *lvs.* elliptical or elliptical-oblong, 7-14 cm. long, 4-7 cm. wide, shortly acuminate or apiculate at apex, rounded or slightly cordate at base, thinly leathery, *petioles* 4-10 mm. long; *panicles* hoary-velvety when young, 4-10 cm. long, *peduncle* 2.5-6 cm., *bracts* papery, 1-2 mm.; *flowers* 10-12 mm. across, minutely and closely puberulent; *sepals* ovate, 1.5-3 mm. long; *petals* broadly spatulate 4-5 mm. long and broad, sharply reduced to a short claw at base, deeply and irregularly lacerate at margins; *disk* extending about 1 mm. beyond the petal bases; *ovary* about 1.5 mm. in diameter; *fruiting carpels* obovate-oblong, up to 7 cm. long and 5 cm. broad.

Trinidad: St. Ann's, San Fernando and Icacos. A. C. Smith cites among other specimens *Lockhart* (cotype coll. of *Hippocratea scutellata* and *Prionostemma scabridula*) in Gray Herbarium and Herb. Kew.

Panama and northern South America.

3. CUERVEA (*Bth. & Hk. f.*) Triana

Vines, or *shrubs* with eventually scandent branches, glabrous throughout. *Lvs.* opposite or subopposite. *Infl.* axillary or aggregated at apices of branchlets, or arranged on short leafless branchlets, paniculate-corymbose; *flowers* large for the family. *Sep.* 5, imbricate. *Petals* 5, membranous. *Disk* membranous or thinly fleshy, shortly cylindrical, conspicuous. *Stam.* 3, the filaments conspicuously broadened towards the base. *Ovary* depressed 3-sided, soon conspicuously 3-lobed; *style* fleshy; *stig.* 3; *ovules* 4-6 per loculus. *Fruit* capsular, of 3 divergent carpels separately attached to a swollen receptacle, convex on both surfaces, the pericarp thinly leathery or papery. *Seeds* 2-6, attached by a basal wing.

1. C. Kappleriana (Miq.) A. C. Sm.

Hippocratea Kappleriana Miq.

Pristimera apiculata Miers

Hippocratea Miersii Loes.

A. C. Smith in *Brittonia* 3. 399 (1940).

Vine; *lvs.* ovate to elliptical-oblong, 10-20 cm. long, 6-10 cm. wide, gradually acuminate at apex, rounded or slightly narrowed at base, entire, strongly reticulate on both surfaces; *panicles* 5-12 cm. long; *flowers* 12-16 mm. across; *pedicels* slender 1.5-3 mm. long; *sepals* broadly ovate 1.3-2.5 mm. long; *petals* obovate or obovate-oblong, about 8 mm. long, not clawed;

disk membranous, 1.5-3 mm. in diameter; *fruiting carpels* broadly obovate or almost orbicular, 5-9 cm. long and broad, conspicuously radiate-nerved.

Trinidad: Herb. Trin. 1109, Prestoe and 2531, Finlay, without locality; Britton 2544, forest, Guayaguayare road; Broadway 5791, Aripo Rd.; Herb. Trin. 12446, Williams, Knaggs Hill.

St. Vincent; Jamaica; southern Costa Rica and Guiana to Amazonian Brazil and Peru.

4. **HYLENAEA** Miers.

Vines, or slender trees with scandent branches, glabrous throughout. *Lvs.* opposite or subopposite. *Infl.* paniculate-corymbose or pseudocymose, the *flowers* very small. *Sep.* 5, membranous. *Pet.* 5, membranous. *Disk* membranous to thinly fleshy, erect. *Stam.* 3, the filaments gradually broadened toward the base. *Ovary* depressed; *style* fleshy; *stigmas* obscure; *ovules* 4-6 per loculus. *Fruit* capsular, of 3 divergent carpels, separately attached to a greatly swollen receptacle, convex on both surfaces, rounded and blunt at margins. *Seeds* 4-6, affixed by a comparatively inconspicuous basal wing.

1. **H. comosa** (Sw.) Miers *Hippocratea comosa* Sw.

Griseb. Fl. 148: Miers in Trans. Linn. Soc. 28, 367 (1872): A. C. Smith in Brittonia 3, 407 (1940).

Tall climber; *lvs.* elliptical-oblong or ovate-oblong, 10-30 cm. long, 5-12 cm. wide, gradually acuminate at apex, blunt or rounded at base, entire, conspicuously reticulate-veined; *infl.* axillary, often aggregated in groups of 3-8 and terminal on branchlets, 7-20 cm. long, the ultimate branchlets very slender and hair-like; *flowers* very numerous, often abortive, the fertile ones comparatively few, 1.3-2 mm. in diameter; *sepals* ovate-deltoid to lanceolate, about 0.5 mm. long; *petals* spreading, elliptical-oblong, about 1 mm. long; *disk* cup-like, thin; *stam.* very short; *fruiting carpels* obovate-oblong, 8-10 cm. long, 4.5-6.5 cm. wide, 1-1.5 cm. thick, blunt and swollen at base, rounded or slightly notched at apex, conspicuously radiate-nerved; body of *seed* ovoid or ellipsoid, 3.5-4.5 cm. long, the wing 3-3.5 cm. long, gradually narrowed to about 5 mm. toward base.

Trinidad: Schach and Crueger specimens, and Fendler 323, all in Herb. Kew. Not recently collected.

Venezuela, Guiana and Hispaniola.

5. **PERITASSA** Miers.

Shrubs or slender *trees* with the upper branches usually scandent, or *vines*, glabrous throughout. *Lvs.* usually opposite or subopposite. *Infl.* axillary or on leafless branchlets, the *flowers* congested or loosely arranged toward the apices of ultimate branchlets, small. *Sepals* 5, narrowly imbricate. *Petals* 5. *Disk* continuous, free, erect or nearly so, membranous. *Stam.* 3. *Ovary* 3-locular, depressed-subglobose, *style* short, *stigmas* obscure, *ovules* 2 or 4 per loculus. *Fruit* drupaceous, small or medium in size.

1. **P. granulata** (Urb.) A. C. Sm.

Salacia granulata Urb.

Urban in Fedde, Repert. 14. 333 (1916) ; A. C. Smith in Brittonia 3. 512 (1940).

Twining *shrub* ; *lvs.* elliptical-oblong or obovate-oblong, 7-14 cm. long, 4-7.5 cm. wide, abruptly acuminate at apex, rounded or blunt at base, entire, leathery ; *infl.* 1.5-5 cm. long, the branchlets slender, each subtended by a papery ovate acute bract about 1 mm. long ; *flowers* yellow, fragrant, 1.5-2 mm. across ; *sep.* ovate-deltoid, about 1 mm. long, subentire at margins ; *pet.* obovate-oblong 1.5-2 mm. long ; *disk* membranous, cup-like ; *ovary* about 0.6 mm. in diameter, with 2 ovules in each loculus.

Tobago : "Lot 42", Broadway 4460 (the type) ; Easterfield Road, Broadway 3992.

Surinam.

6. **CHEILOCLINIUM** Miers.

Vines or slender shrubs or trees, usually with the upper branches scandent, copiously branching. *Lvs.* opposite. *Infl.* axillary, the branchlets dichotomously forked, subtended by small bracts ; *flowers* often congested, usually solitary in the ultimate dichotomies or in 2s or 3s at the ends of ultimate branchlets, small. *Sep.* 5 (rarely 4). *Petals* 5 (rarely 3, 4 or 6). *Disk* discontinuous, forming 3 pouched fleshy lips, confluent with the base of the ovary. *Stam.* 3, inserted within the disk lips. *Ovary* 3-locular ; *stigmas* 3, sessile ; *ovules* 2 or 4 in each loculus. *Fruit* drupaceous, subglobose, with a leathery pericarp.

1. **C. cognatum** (Miers) A. C. Sm.

Kippistia cognata Miers

Salacia sphaerocarpa Rusby

Miers in Trans. Linn. Soc. 28. 417 (1872) : Sandwith in Kew Bull. 1938. p. 358 : A. C. Smith in Brittonia 3. 529 (1940).

Small tree up to 12 m., the branches often scandent; *lvs.* oblong to ovate-oblong, 8-20 cm. long, 2.5-8 cm. wide, acuminate at apex, bluntish at base, narrowly revolute at margins and subentire or crenate, *petioles* 3-8 mm. long; *infl.* 3-7 cm. long, shortly peduncled; *flowers* congested, yellow, turning brown; *pedicels* usually less than 1 mm.; *bracteoles* 0.7-1 mm. long; *sep.* broadly triangular-ovate or semiorbicular, blunt, entire or almost so; *petals* oblong or obovate-oblong, about 2 mm., rounded at apex; inflorescence branches greatly swollen in fruit; *fruit* leathery, spherical or oblong-ellipsoid, up to 3.5 cm. long; *seeds* few (4-6) up to 1.5 cm. long.

Tobago: Parlatuvier, in virgin forest on slopes of Main Ridge, Sandwith 1910; Broadway 4699.

Panama to Brazil, Amazonian Peru and Bolivia.

Species of Doubtful Affinity

Telemachia trinitensis Urb. in Fedde. Repert. 14. 334 (1916) was described from Herb. Trin. 1457 and the genus founded on it was referred by Urban to *Hippocrateaceae*. The specimen is not available for examination and the description gives rise to doubt whether the species belongs in this family. A. C. Smith (in a personal communication) regards it as an "insufficiently known species", and it has been omitted from this treatment, leaving the description on p. 172 to stand for reference until fuller information accrues.

Species not admitted

Salacia scandens (Aubl.) Griseb. Fl. 148 is based upon *Tontelea scandens* Aubl., but according to A. C. Smith in Brittonia 3. 485, Grisebach made his combination on the basis of a misdetermination. *Tontelea scandens* is not admitted as a Trinidad plant.

CELASTRACEAE

p. 173 Emend last line of key to genera (and cf. note to p. 176) :

Lvs. always opposite, or at least opposite towards the apex of the branchlets.

Fls. tetramerous; fruit less than 1 cm. long and in diameter 3. **Gyminda**

Fls. pentamerous; fruit at least 1 cm. long and in diameter 4. **Elaeodendron**

p. 173 *Celastrus racemosa*. Author's name omitted. Cite as :

C. racemosa (Reiss.) Loes. var. **trinitensis** Urb.

The species is based on *Maytenus racemosa* Reiss.

p. 176 Add genus and species :

4. *Elaeodendron* Jacq. f.

Shrubs or small *trees*. *Lvs.* usually opposite, opposite at least at the apex of the branchlets, crenate. *Fls.* small, hermaphrodite or dioecious, in pedunculate axillary thyrses, pentamerous. *Stamens* in the female flowers of dioecious species sterile and petal-like. *Disk* thick, 4-5-lobed. *Ovary* generally 3-locular, confluent with the disk; *ovules* 2 in each loculus. *Drupe* 1-3-locular, loculi with 1-2 seeds.

1. **E. xylocarpum** (Vent.) DC. var. **caribaeum** Urb.

E. attenuatum Griseb. Fl. 145 p.p.

E. dioicum Griseb. p.p.

Urb. Symb. Ant. 5. 90.

Small *tree*, about 3 m.; *lvs.* mostly opposite, obovate or elliptic, shortly and obtusely cuspidate-acuminate or merely obtuse at the apex, cuneately attenuate into the petiole, 5-13.5 cm. long, 2.5-8 cm. broad, conspicuously crenate along the margins almost to the base, leathery, brownish or brownish-olive when dried, reticulate; *petioles* usually 0.6-1.2 cm. long; *fls.* dioecious, in thyrses much shorter than the leaves; *male fls.*, *sepals* 0.8 mm. long; *petals* 2.2-2.5 mm. long; *female fls.* not known; *drupe* ovoid or ellipsoid, 1.5-3 cm. long, 1-1.8 cm. diam., umbonate or apiculate at the apex.

Trinidad: Near sea-shore, mouth of L'Ebranche River, Nov. 1938 A. H. G. Alston 5162 (Herb. Mus. Brit. and Herb. Kew.), leaves and fruit only. It is hoped that this identification will be confirmed by flowering material.

Lesser Antilles.

Cultivated species.

The East Indian *E. glaucum* (Vahl.) Pers., with hermaphrodite flowers, the stamens never petaloid, has been cultivated in the Trinidad Botanic Garden, *fide* Urb. l.c. 93 (Herb. Trin. 6004) and coll. *Prestoe* in Herb. Kew.

RHAMNACEAE

p. 178 **Reissekia smilacina** (Sm.) Steud. Add synonym: *Gouania smilacina* Sm.

p. 179 **Gouania polygama** (Jacq.) Urb. Local distribution should read: Hillsides and forest borders, Trinidad and Tobago.

SAPINDACEAE

p. 181 **Urvillea ulmacea** H.B.K. According to Radlkofer in Engler's Pflanzenreich, IV. 165, p. 361, much of the Trinidad material is referable to forma *Berteriana* (DC.) Radlk. (*U. Berteriana* DC.) which has the leaflets quite glabrous or scarcely pubescent. Forma *genuina* Radlk., with copiously pubescent leaflets, also occurs in the area and is represented by Fendler 275.

After this species, on p. 182, add :

DOUBTFUL RECORD

Urvillea stipitata Radlk. is cited from Trinidad by Radlkofer in his Monograph of Sapindaceae in Engler's Pflanzenreich, IV. 165, p. 367 (1932) on the evidence of a specimen of Lockhart, but the possibility of a mistake of labelling is admitted. This is almost certainly what has happened, since *U. stipitata* is a local species of Central and Southern Brazil. Cf. *Serjania lamprophylla* on p. 187.

p. 182 *Cardiospermum Halicacabum* L. This species was included on an erroneous determination. On re-examining the Crueger specimen, and after re-arranging the Kew material of the whole genus, N. Y. Sandwith finds that the Chacachacare plant must be referred to *C. corindum* L., and also finds no evidence for the occurrence of *C. Halicacabum* in Trinidad. Our species no. 2 therefore becomes .

2. **C. corindum** L.

Fawc. & Rendl. Fl. Jam. 5. 48: Radlk. in Engl. Pflanzenreich IV. 165, p. 397 (1932).

p. 185 **Paullinia excisa** Radlk. Flowers were collected by N. Y. Sandwith in 1937, and the description may now be completed by adding his notes :

Fls. cream, about 8 mm. in diameter when expanded; 2 outer sepals very much smaller, ovate-orbicular, 2.25 mm. long, 2 mm. broad; 3 inner sepals broadly obovate, 4.5 mm. long, 3 mm. broad; petals rather narrowly obovate-spathulate, up to 4.5 mm. long, 2 mm. broad; scales slightly exceeding half the length of the petals, those of the upper petals with a short obcordate crest which is somewhat shorter than the barbate inflexed appendage; filaments flattened, about 2.5 mm. long, pilose near the base only; torus and ovoid-oblong glands pilose. (Kew Bull. 1938, p. 358).

The distributional note should also be amended, as follows :
 Eggers 5723 (type, in Herb. Kew) valley of R. Bacolet towards
 Cradley, in fruit Nov. 1889 ; Sandwith 1879, Castara-Parlatuvier
 Road, 1½ miles from Castara, in flower and fruit, October 1937.
 Endemic, Tobago.

P. fuscescens H.B.K. Add Tobago records : *Broadway*
 2962 and 3636, Scarborough. Add references to : Radlkofer in
 Engl. Pflanzenreich IV. 165. p. 334 : Uttien in Pulle, Fl. Surin.
 2. 1. 364.

p. 187 **Serjania caracasana** should be cited as **S. cara-**
casana (Jacq.) Willd. with synonym *Paullinia caracasana* Jacq.

line 21. For DOUBTFUL SPECIES read DOUBTFUL
 RECORDS, and under this heading add :

S. polyphylla (L.) Radlk. is cited from Trinidad by
 Radlkofer in Mon. Sapindaceae in Engl. Pflanzenreich IV. 165.
 p. 122 (1931). The collection cited is *Eggers* s. n. Nov. 1883, fl.,
 from Arima, in the Copenhagen Herbarium. This collection
 has not been seen and is not represented at Kew. No other
 Trinidad material of this species has been found, and it will be
 noted that the *Eggers* specimen was only a flowering one. It
 may well be referable to *S. caracasana*, but the latter species
 should be distinguishable even in the flowering stage by the
 glabrescent outer sepals.

p. 188 **Cupania americana** L. Marshall, Sylv. Trin. Tob. 70
 gives as vernacular name : Maraquil.

p. 189 *Matayba arborescens* should be cited as
M. arborescens (Aubl.) Radlk.

M. guianensis Aubl. Add reference : Radlkofer in
 Engler, Pflanzenreich IV. 165, p. 1100. Emend Tobago records :
 Caledonia, *Broadway* 4009 ; The Widow, *Broadway* 3530 ; Lot
 42, *Broadway* 4464. Add also : Herb. Trin. 12629, Parlatuvier
 Road, R. L. Brooks coll. 1932, distributed as *M. arborescens*.

p. 190 **Talisia olivaeformis** (H.B.K.) Radlk. is now to be
 recorded as a native tree, on the strength of a Forest
 Department collection in 1930. In place of the note on this
 species under the generic description insert key :

- Lvs. with 3-4 pairs of leaflets ; *lfts.*
 10-20 cm. long 1. *T. hexaphylla*
 Lvs. usually with 2 pairs of leaflets ; *lfts.*
 3-7 cm. long 2. *T. olivaeformis*

and in appropriate place add :

2. **T. olivaeformis** (H.B.K.) Radlk.

Mapoo.

Melicocca olivaeformis H.B.K.

Radlk. Sitzungst. Akad. Wiss. Munchen 8. 342 (1878) : Standley in Contr. U.S. Nat. Herb. 23. 708 : Marshall, Sylv. Trin. Tob. 240.

Fairly large tree ; *lvs.* variable but usually with 2 pairs of leaflets ; *lfts.* elliptic, ovate or obovate, 3-7 cm. long (on local material ; 4-15 cm. long *vide* Standley), usually acuminate at apex, wedge-shaped or rounded at base, entire, glabrous ; panicles apparently short, about 3 cm. long on specimens seen, their branches puberulent ; *calyx* rusty-tomentose, 2.5 mm. long ; fruit globose, 2-2.5 cm. in diameter, closely fitted with very short rusty-brown hairs ; seed elliptical, about 1.5 cm. long.

Trinidad : Southern Watershed Reserve, Herb. Trin. 12394, Swabey, fr. July 1930 ; Herb. Trin. 12552, Russell, same tree, fl. May 1931. Also apparently Herb. Trin. 13096, R. O. Williams, Pointe-a-Pierre (barren).

Colombia ; Mexico (*vide* Standley *loc. cit.*)

p. 191 **Sapindus saponaria** L. Add Tobago record : Broadway 3389, Fort Road, Scarborough. Add reference to Radlkofer in Engler, Pflanzenreich IV. 165, p. 649.

Dodonaea viscosa should be cited as :

D. viscosa (L.) Jacq. with synonym *Ptelea viscosa* L.

ANACARDIACEAE

p. 194 **Tapirira guianensis** Aubl. Add vernacular name : Gommier Viande Biche (ex Marshall, Sylv. Trin. Tob. 75).

p. 195 *Spondias* Monbin should be **S. Mombin** L. Add the common name : Hog Plum.

CONNARACEAE

p. 199 **Connarus Lambertii** (DC.) Sagot. Add synonym : *Omphalobium Lambertii* DC.

LEGUMINOSAE-PAPILIONATAE

p. 203 In key, instead of 40. *Ichthyomethia* read 40. **Piscidia** (cf. note to p. 256).

p. 203 *Sophora tomentosa* L. The authorities cited (Fawcett and Rendle, and Urban) include under this name *S. occidentalis* L. Syst. ed. 10, 1015 but the latter is a distinguishable species, having a minute pubescence on the lower surface of the leaflets and on the calyx whereas *S. tomentosa* has longer, more spreading hairs.

The Trinidad and Tobago material is to be referred to *S. occidentalis*, with the following references and amendments:

1. *S. occidentalis* L.

Hutchinson and Dalziel, Fl. W. Trop. Africa i. 370 (1928): Sandwith in Kew Bull. 1938, p. 359.

In first line of description, alter "more or less silky-woolly" to "more or less sericeous-pubescent". In lines 4-5, delete "becoming glabrous" and substitute "minutely, not densely, adpressed-pubescent on both surfaces"; add "racemes and calyx minutely adpressed-pubescent with sericeous hairs".

The distribution is: Florida, West Indies, Brazil, West Tropical Africa.

p. 205 *Ormosia coarctata* Jacks. The collector of the type was Anderson, not Andersen as printed. This species, according to Amshoff ("On South American Papilionaceae" (1939) p. 49) is closely allied to, and possibly identical with, *O. fastigiata* Tul. of Northern South America, but Amshoff regards it as "still a doubtful species".

p. 207 *Swartzia simplex* (Sw.) Spreng. Marshall (Sylv. Trin. Tob. 89) gives for this species the local name Wild Orange.

p. 210 *Desmodium supinum* (Sw.) DC. Amshoff in Pulle, Fl. Surin. 2. 2. 253 (1939) uses for this species the combination *D. frutescens* (Jacq.) Schindl. in Fedde, Rep. 21. 9 (1925) depending on the identification of *Hedysarum supinum* Sw. (1788) with *Hedysarum frutescens* Jacq. (1776).

p. 211 *Desmodium axillare* (Sw.) DC. Schubert has dealt with varieties of this species in Contr. Gray Herb. 135 pp. 80-88 (1941) and cites two from Trinidad. She gives a key distinguishing them from each other and from *D. Wydlerianum* Urb., the following adaptation from which may be useful here:

Habit delicate; leaflets thin with sinuate margins and truncate to subcordate base; loment sessile to substipitate, borne singly; joints semi-ovate *D. Wydlerianum*

Habit stout; leaflets rather thick with entire margins, base usually rounded-obtuse; loment long-stipitate, borne in pairs, upper suture essentially straight, with joints semi-elliptical .. *D. axillare*

Stems with rather inconspicuous pubescence of short hooked hairs; leaflets short-pilose beneath, rhombic, rhombic-ovate or rhombic-orbicular, obtuse or rounded at apex var. *genuinum*

Stems with long dense pubescence of straight hairs; leaflets long-pilose beneath, ovate or elliptical-ovate, acute to gradually (usually long) acuminate var. *acutifolium*

Var. *genuinum* Urb. *Symb. Ant.* 2. 303 (1900) is locally represented, according to Schubert, by Britton, Freeman and Nowell 2523, Ortoire River, Guayaguayare Road, March 25, 1921.

Var. *acutifolium* (O. Ktze) Urb. *Symb. Ant.* 4. 292 (1905) is represented by J. R. Johnston nos. 3 and 4, Roadside, Cascade. Schubert reduces to this variety also var. *angustatum* Urb. for which Urban (*Symb. Ant.* 2. 303) cited Sieber 267 from Trinidad.

D. Wyddlerianum Urb. *Symb. Ant.* 2. 302 (1900) was recorded from Tobago by Urban on the strength of Eggers 5794, Great Dog River valley. But Schubert (in Contr. Gray Herbarium 129. 29 (1940)) writes that this collection (from the evidence of the duplicate in U.S. National Herbarium) is very different from the isotype of Porto Rico. At present, therefore, *D. Wyddlerianum* is not known with certainty as a Trinidad or Tobago plant.

p. 212 *Desmodium asperum* Desv. A more recent record is: Herb. Trin. 13079, R. O. Williams, Icacos.

p. 214 *Alysicarpus vaginalis* (L.) DC. Add synonym: *Hedysarum vaginale* L.

The *Stylosanthes* species on this page should be cited as: 1. *S. guianensis* (Aubl.) Sw.

p. 218 The *Zornia* species should be cited as:

1. *Z. diphylla* (L.) Pers.

Hedysarum diphyllum L.

p. 220 *Crotalaria pterocaula* Desv. is identified by Senn, in *Rhodora* 41. 330 (1939), with *C. pilosa* Mill. Gard. Diet. ed. 8 (1768), and this older name must therefore be used. Trinidad material appears to be referable to *C. pilosa* Mill. var. *Skutchii* Senn, loc. cit. 331, though Senn gives no West Indian distribution south of Jamaica.

p. 222 **Erythrina** L. Substitute new key :
et seq.

Calyx campanulate, not spathaceous.

Standard of corolla narrowly oblong.

Lfts. minutely farinose-ceriferous
beneath 1. *E. pallida*

Lfts. not ceriferous beneath 2. *E. Corallodendrum*.

Standard of corolla elliptic to subrotund.

Standard long-clawed (claw 9-21
mm. long); pod woody, not
follicular; seeds with black
markings 3. *E. glauca*

Standard short-clawed (claw up to
1.5 mm. long); pod chartaceous,
follicular; seeds without black
markings 4. *E. Poeppigiana*

Calyx spathaceous, opening laterally on one
side 5. *E. velutina*

Add notes :

1. *E. pallida* Britt. and Rose. Add reference to B.A. Krukoff, "American Species of Erythrina", in Brittonia 3. 263 (1939). Alter distributional note to read: Hillsides, Trinidad and Tobago; sometimes planted for hedges. Type specimen collected at Carenage, Trinidad (Britton 2636).

St. Vincent, Margarita and probably other neighbouring islands.

2. *E. Corallodendrum* L. Note spelling with capital C as here. Krukoff in Brittonia 3. 272-77 (1939) regards the typical form of this species as that with scarlet seeds, apparently restricted to Jamaica and Haiti. He recognizes a var. *bicolor* Krukoff loc. cit. p. 275 with seeds scarlet and black, the distribution of which is Lesser Antilles from Montserrat to Grenada. Krukoff does not mention Trinidad or Tobago under either species or variety.

I have re-examined the Trinidad Herbarium material under this label, and find all the fruiting specimens to have scarlet and black seeds. There is therefore no evidence for the occurrence of typical *E. Corallodendrum* in the Colony. For the present I refer all this material to *E. pallida* (of which we have isotype sheets) rather than to *E. Corallodendrum* var. *bicolor*, but the latter may occur in the Colony, at least in Tobago, and should be looked for.

The flower colour used in the original key is probably variable and less dependable than the presence or absence of a fine waxy meal on the underside of the leaflets, which is one of the key characters used by Krukoff. Another character of *E. pallida* is that the standard is densely pubescent with long pale cinereous hairs in the bud, sparsely so at anthesis.

4. *E. micropteryx* Poepp. should be cited as :

4. **E. Poeppigiana** (Walp.) O. F. Cook Bull. U.S. Dept. Agr. Bot. 25. 57 (1901)

Micropteryx Poeppigiana Walp. Linnæa 23. 740 (1850)
Erythrina amasisa Spruce. Journ. Linn. Soc. 3. 202 (1859)

Erythrina micropteryx Poepp.; Urban, Symb. Ant. 1. 327 (1899)

Add reference to B. A. Krukoff in Brittonia 3. 235 (1939)

5. **E. velutina** Willd.

Willd. Ges. Nat. Freunde Berlin Neue Schr. 3. 426 (1801):
Krukoff in Brittonia 3. 326 (1939)

Large spreading short-boled *tree*, armed with spines, leafy at flowering; *petioles* and *leaflets* densely pubescent with stellate hairs, ultimately becoming glabrous; *terminal leaflets* subdeltoid or broadly ovate-rhomboid, 4.5-16 cm. long, 5.5-19 cm. broad, usually notched (or rounded or blunt) at apex, truncate, subcordate or occasionally blunt at base, *lateral leaflets* 5-8 per side; *infl.* 10-20 cm. long, densely pubescent; *pedicels* about 1 cm. long; *calyx* spathaceous, opening laterally on one side almost to base, the part opposite the cleft broad, conspicuously veined, wrinkled transversely, truncate, with 5 blunt nearly equal small spur-like teeth, the calyx usually 2-3 cm. long, 1.3-2 cm. broad when stretched, pubescent; *standard* orange-red, obovate, ovate or elliptical, usually strongly reflexed and unequal-sided, 3-5.5 cm. long (including claw) 1.4-3 cm. broad, notched or rounded at apex, broadly wedge-shaped at base, the claw up to 6 mm. long; *wings* usually obliquely obovate, 11-17 (or up to 29) mm. long, 5-9 mm. broad, longer than the keel petals; *keel* petals broadly obovate or obliquely so, 11-17 mm. long, 6-14 mm. broad; *stamens* 3.8-7.1 cm. long, separate in the upper third; *Pods* woody 7.5-14 cm. long, 1.2-1.7 cm. broad, irregularly and deeply constricted between the seeds, which are usually 1-4 in

number; *seeds* red with a broad black line extending from the hilum for about 3 mm. toward the chalazal end, 14-17 mm. long, 8-11 mm. broad.

Tobago: *Broadway* 3502 (in part), 3800 and 3994, *vide* Krukoff *l.c.* Not having seen the *Broadway* specimens I cannot be sure whether they were from planted or apparently indigenous trees, but the distribution of this species renders necessary its inclusion as a possible native of the Colony.

West Indies, northern Venezuela, south-eastern Brazil and Ecuador.

p. 231 ***Centrosema macrocarpum* Benth.** Add to distribution: Colombia and Peru.

p. 232 *Tephrosia brevipes* Benth. Amshoff in Pulle, Fl. Surin. 2. 2. 164 (1939) employs the combination: ***T. sessiliflora* (Poir.) Hassl. in Fedde, Rep. 16. 162 (1919)** depending on the identification of Bentham's species with the older *Cytisus sessiliflora* Poir. (*Rhyncosia sessiliflora* (Poir.) DC.)

T. toxicaria should be cited as:

2. ***T. toxicaria* (Sw.) Pers.**
Galega toxicaria Sw.

p. 234 **CANAVALIA** *Adans.* A second species has been inadvertently omitted. After the generic description and notes insert key:

- Plant creeping, usually on seashore 1. *C. maritima*
 Plant twining, not usually on seashores 2. *C. caribaea*

and add below:

2. ***C. caribaea* Urb.**

Urb. Symb. Ant. 7. 232 (1912): Piper in Contr. U.S. Nat. Herb. 20. 572 (1925).

Stems twining, up to 4 m. high, densely whitish-hairy on their younger parts; *stip.* triangular-lanceolate, blunt, about 1.5 mm. long; *petioles* 3.5-10 cm. long; *petiolules* of lateral leaflets 4-5 mm. of the terminal leaflet 2-3 cm. long; *lfts.* ovate, 7-12 cm. long, 5-7 cm. wide, rounded, blunt or very shortly and bluntly acuminate at apex, sparsely pilose on both surfaces with very short appressed hairs; *infl.* with its peduncle up to 22 cm. long; *fls.* 1- few at each joint, on *pedicels* about 2 mm. long; *cal.* about 1 cm. long, shortly and sparsely pilose, its upper lobe about 5 mm. long, 7 mm. wide, the lower 3 mm. long; *standard*

broadly obovate, 2.5 cm. long, deeply notched at apex and with 2 fleshy protuberances below the middle; *wings* oblong, as long as the standard, 5 mm. wide; *flts.* all united; *pod* densely pilose when young, becoming glabrous, 15 cm. long, 3 cm. wide; *seeds* pale brown, 15-17 mm. long.

Near Bacolet River at Calder Hall, Tobago (Eggers 5705 (type); Broadway 3446 and 3857).

St. Vincent and Antigua.

p. 236 *Calopogonium coeruleum* should be cited as:

C. coeruleum (Benth.) Sauv. Add reference to Amshoff in Pulle, Fl. Surin. 2. 2. 197 (1939).

p. 237 **Dioclea reflexa** Hook. f. According to Amshoff we have probably included under this name two species which should be separated. In her paper "On South American Papilionaceae" pp. 66-68 (1939) Amshoff refers all Trinidad "reflexa" material seen by her to **D. violacea** Benth., but writes that *D. reflexa* probably occurs here.

There are not sufficient differences between the two species for a full description of *D. violacea* to be necessary here. They will key off together as having pods large and glabrous or nearly so, and may then be distinguished by this key:

Bracts about 5 mm. broad, reflexed; sutures
of the pod both curved; indumentum
of the inflorescence rusty-reddish 1. *D. reflexa*

Bracts 3 mm. broad, erect; upper suture of
the pod straight; indumentum of the
inflorescence dark brown 1a. *D. violacea*

The distribution of *D. violacea* is Guiana and Brazil, and Central America.

References may also be added to Amshoff in Pulle, Fl. Surin. 2. 2. 203-204 (1939) for treatments of both species.

p. 238 **Dioclea guianensis** Benth. Delete synonyms: *D. comosa* Kuntze and *Dolichos comosus* Mey. Amshoff (On S. Amer. Pap. 68-69) regards Meyer's plant as belonging to a different section of the genus. In line 8 of description, read: *cor.* 15-25 mm. long (*not* cm.). Add reference to Amshoff in Pulle, Fl. Surin. 2. 2. 207.

p. 243 *Vigna repens* (L.) Kuntze. This name (1891) is invalidated by *V. repens* Baker (1876) and the species must be called **V. luteola** (Jacq.) Benth. based on *Dolichos luteolus* Jacq. Add reference to Amshoff in Pulle, Fl. Surin. 2. 2. 231.

p. 244 *Clitoria rubiginosa* Juss. After description add (on p. 245) this note: *Sandwith* 1754, Bacolet, Tobago, is a glabrescent form to be compared with *H. H. and G. W. Smith* 402 from St. Vincent and sheets from Tropical Africa (ref. Kew Bull. 1938, p. 359).

p. 250 *Sesbania sericea* should be cited as *S. sericea* (Willd.) Link, Link having made the combination earlier than De Candolle. Add reference to Amshoff in Pulle, Fl. Surin. 2. 2. 161, according to whom the species is a native of tropical Asia, introduced into tropical and subtropical America.

p. 251 *Andira inermis* should be cited as *A. inermis* (Wright) H.B.K. based on *Geoffroya inermis* Wright in Lond. Med. Journ. 8. 256 (1787). *Andira jamaicensis* Urb. is based on *Geoffroya jamaicensis* var. *inermis* Wright in Phil. Trans. Roy. Soc. London (1778) p. 512, t. 10. Vide Amshoff in Pulle, Fl. Surin. 2. 2. 151.

Andira retusa H.B.K. was based on *Geoffroya retusa* Poir. (1808) which Amshoff identifies with *Geoffroya surinamensis* Bondt (1788). The name therefore becomes *A. surinamensis* (Bondt) Splitg. ex Pulle Enum. 229 (1906). Add references to Amshoff, On S. Amer. Pap. p. 60 and in Pulle, Fl. Surin. 2. 2. 151.

p. 253 By a typographical error the distribution of *Machaerium robiniiifolium* (DC.) Vogel appears under *M. tobagense* Urb. It is *M. robiniiifolium* which occurs in "Hillsides and forests in moist and dry districts, Trinidad," on Monos and Chacachacare Is., and in St. Vincent. To this distribution may now be added specifically the Southern Watershed Reserve (ex Marshall, Sylv. Trin. Tob. 83). The remaining small type applies to *M. tobagense*.

p. 254 *Drepanocarpus lunatus* should be cited as *D. lunatus* (L.f.) Mey. with synonyms—

Pterocarpus lunatus L.f.

Machaerium lunatum (L.f.) Ducke.

The last of these combinations is adopted by Amshoff in Pulle, Fl. Surin. 2. 2. 125 (1939).

p. 254 *Dalbergia Ecastaphyllum* should be cited as

D. Ecastaphyllum (L.) Taub. with synonym

Hedysarum Ecastaphyllum L.

p. 255 *D. monetaria* should be cited as

***D. monetaria* L. f.**

p. 256 Emend key to species of *Pterocarpus* as follows :

Calyx rusty-woolly :

Pod with a broad wing all round the margin ; bracts 2 mm. long ; pedicels 4-5 mm. long 1 *P. Rohrii*

Pod keeled, not winged ; bracts awl-shaped about 7 mm. long ; pedicels 2-4 mm. long 1a. *P. santalinoides*

Calyx glabrous 2. *P. officinalis*

1. ***P. Rohrii* Vahl.** Delete reference to Griseb. Fl. 201, because (*vide* Amshoff) the plant described by Grisebach under this name is *P. santalinoides*. Substitute Vahl, Symb. 2. 79 (1791) and add Amshoff "On S. Amer. Pap." pp. 54-55 and in Pulle, Fl. Surin. 2. 2. 135 (1939).

From local distribution delete Herb. Trin. 448, *Crueger* Caroni and Herb. Trin. 8488, *Broadway*, Cedros. These specimens are *P. officinalis*. Add Herb. Trin. 11646, *Dardaine*, Siparia ; 12006, *Freeman*, Cedros ; 12565, *Williams*, San Rafael. From wider distribution, delete St. Vincent.

1a. ***P. santalinoides* L'Her. ex DC.** Prodr. 2. 419 (1825). Amshoff, "On S. Amer. Pap." pp. 54-55 and in Pulle, Fl. Surin. 2. 2. 136 (1939).

A full description is not necessary here, as apart from the characters given in the key the species in flower is very like *P. Rohrii*.

Amshoff cites *Swabey* in Herb. Trin. 12607, which was collected in swamp forest S.W. of Nariva Ferry, in fruit 17. 10. 31. Herb. Trin. 12547 is flowering material from the same tree collected by *Swabey* 7. 5. 31.

Distribution the same as that of *P. Rohrii*, with the addition of St. Vincent.

2. ***P. officinalis* Jacq.** Specific collections are Herb. Trin. 448, *Crueger*, Caroni and 8488, *Broadway*, Cedros, both formerly cited under *P. Rohrii* ; Herb. Trin. 12355, *Marshall* and 12546, *Swabey*, both from swamp forest, Nariva, Trinidad.

p. 256 The generic name ***Piscidia* L.** is conserved against **ICHTHYOMETHIA** P. Br. and must be adopted here. The name of our species becomes :

1. **Piscidia acuminata** (Blake) I. M. Johnston in Contr. Gray Herb. n. s. 70, p. 71 (1924).

Add note: Britton and Wilson (Sci. Surv. Porto Rico 5, 409) reduce this species to *P. piscipula* (L.) Sarg. (*Erythrina piscipula* L.) and adopt the combination *Ichthyomethia piscipula* (L.) Hitchc.

p. 257 **Platymiscium trinitatis** Benth. Amshoff (On S. Amer. Pap. p. 57) gives as synonyms *P. nigrum* Ducke; and *P. Duckei* Huber var. *nigrum* (Ducke) Ducke. These add Amazonian Brazil to the distribution of the typical plant, and var. *durum* Ducke occurs in Surinam. Vide Amshoff in Pulle, Fl. Surin. 2, 2, 138 (1939).

p. 259 **Lonchocarpus sericeus** (Poir.) H.B.K. Add synonym *Robinia sericea* Poir. Marshall (Sylv. Trin. Tob. 82) attaches to this species the vernacular name Conore, and attaches the name Savonette to *L. punctatus*.

p. 260 **L. sericeus** var. **glabrescens** is now represented from Tobago by three collections in Herb. Kew viz. Charlotteville, 1932 (Fairchild); Delaford, 1932 (*Durity* in Herb. Trin. 12632) and Richmond Estate, 1932 (*Durity* in Herb. Trin. 12654). Common names are given as "Savonette" by Fairchild and "Black Mahoe" by Durity, whilst Beard adds "Dog Root".

L. latifolius (Willd.) H.B.K. Add synonym *Amerinum latifolium* Willd.

Muellera moniliformis L.f. The correct name appears to be **M. frutescens** (Aubl.) Standley in Trop. Woods 34, p. 41 (1933), as *Coublandia frutescens* Aubl. is earlier than *M. Moniliformis*.

LEGUMINOSAE — CAESALPINIEAE

p. 261 Notes under sub-family, last paragraph before key: *Parkinsonia aculeata* L. is still known in Trinidad in cultivation.

p. 262 In notes under **Caesalpinia** L., *C. pulcherrima* should be cited as *C. pulcherrima* (L.) Sw.

p. 263 *C. bonducella*. Change name and synonymy as follows:

1. **C. Bonduc** (L.) Roxb. *quoad nomen tantum*, emend. Dandy et Exell in Journ. Bot. 76, 179 (1938).

Guilandina Bonduc L. non *Caesalpinia Bonduc* Roxb. et auctt. *quoad. descr.*

Caesalpinia Bonducella (L.) Flem.

Guilandina Bonducella L.

Add reference to Amshoff in Pulle, Fl. Surin, 2. 2. 86.

p. 267 *Cassia bacillaris* Lf. Amshoff (On S. Amer. Pap. p. 22 and in Pulle, Fl. Surin, 2. 2. 59) agrees with Fawcett and Rendle (Fl. Jam. 4. 103) in identifying this species (1781) with *C. fruticosa* Mill. Gard. Dict. ed. 8. n. 10 (1768) and accordingly uses the earlier name.

To the description of this species add note: *Sandwith* 1869 from Easterfield Road, Tobago, is a small-flowered form with petals reaching only 13 mm. in length, but otherwise indistinguishable from this species (Kew Bull. 1938, p. 359).

p. 276 Species 20 should be cited as:

C. glandulosa L. var. *Swartzii* (Wickstr.) Macbride.

p. 278 *Bauhinia cumanensis* H.B.K. Add to distribution: Colombia, Guiana and Brazil (*vide* Amshoff in Pulle, Fl. Surin, 2. 2. 51-52).

p. 279 Correct spelling of Species 4 to *B. Bredemeyeri* Vogel.

p. 282 (also p. 281 in key). Correct spelling of Species 2 to *M. bifolium* (Aubl.) Pers.

p. 284 *Crudia obliqua* Griseb. Alter name, synonymy and references as follows:

1. *C. glaberrima* (Steud.) Macbride in Contr. Gray Herb. n. s. 59, p. 20 (1919)

Hirtella glaberrima Steud. in Flora, p. 761 (1843)

Crudia obliqua Griseb. Fl. 216 (1860)

C. hirtelloides Miq. ex Benth. in syn. (1870)

Amshoff, "On S. Amer. Pap." p. 13 and in Pulle, Fl. Surin, 2. 2. 21 (1939).

Add to distribution: Venezuela.

LEGUMINOSAE — MIMOSEAE

p. 289 *Entada polystachya* (L.) DC. Add to description: petals reddish brown, filaments cream (ex *Sandwith* in Kew Bull. 1938, p. 360).

p. 295 *Desmanthus depressus* H. & B. Add record: *Sandwith* 1795, Bacolet, Tobago.

p. 296 *Leucaena glauca* (L.) Benth. Add to description: petals and filaments cream-coloured, anthers pinkish cream (ex *Sandwith* in Kew Bull. 1938, p. 360).

p. 299 **Calliandra marginata** Griseb. Delete synonym and reference: "*C. formosa* Benth. Trans. Linn. Soc. 30. 542".

C. Cruegerii Griseb. The late W. E. Broadway made a note against this species in his copy of the Flora: "Not endemic. I met it across in Venezuela. W. E. B." He gave, however, no citation of any specimen from Venezuela.

p. 304 **Inga Hartii** Urb. Add record: Tobago (*Broadway* 4355, det. Urban) *vide* Broadway in MS.

p. 307 **Inga Thibaudiana** DC. should be spelt with capital T as here. Correct also on p. 303 in key.

ROSACEAE

p. 311 **Chrysobalanus Icaco** L. Spell with capital I, as here.

C. pellocarpus Mey. has recently been re-treated as a variety of *C. Icaco* by Kleinhoonte in Pulle, Fl. Surin. 2. 1. 429 (1939). When so treated it has to be cited as: **C. Icaco** L. var. **pellocarpa** (G. F. W. Meyer) Hook. in Hook. Journ. Bot. 2. 214 (1840).

p. 312 **Licania ternatensis** Hook. f.

Marshall (Sylv. Trin. Tob. 123) gives as vernacular names Bois gris and Cassé.

p. 313 **L. Cruegeriana** Urb. Add: Tobago (*Broadway* 4049) *vide* Broadway in MS.

L. biglandulosa Griseb. Add: Endemic in the Colony, as far as known.

p. 315 line 8. For *Licania apetala* (Meyer) Kze read *Licania apetala* (E. Mey.) Fritsch.

p. 317 line 2 (in description of *Hirtella silicea* Griseb.) instead of "*drupe* oblong, glabrous" read: *drupe* oblong, glabrous or softly scattered-pilose Reference, Sandwith in Kew Bull. 1938, p. 360.

H. racemosa Lam. Marshall (Sylv. Trin. Tob. 120) gives the vernacular name Cocochat.

H. triandra Sw. Add Tobago record: Sandwith 1737, Great Dog River, Oct. 1937. Add to description: *petals* white, filaments purplish. Add vernacular: Fruta Paloma (ex Marshall, Sylv. Trin. Tob. 121).

p. 319 **Prunus myrtifolia** (L.) Urb. Add to distribution: Surinam (Kleinhoonte in Pulle, Fl. Surin. 2. 1. 428).

CUNONIACEAE

- p. 320 The generic name should be spelt **Weinmannia** L.
 p. 322 In key to *Myrtales* correct "Onagrariaceae" to *Onagraceae*.

RHIZOPHORACEAE

- p. 325 *Cassipourea latifolia* Alston. Marshall (Sylv. Trin. Tob. 124) gives vernacular names: Bois l'Ail and Garlic Wood.

COMBRETACEAE

- p. 327 *Terminalia obovata* (R. & P.) Steud. (1841) is a later homonym of *T. obovata* Cambess. (1829) and therefore invalid. The combination to be used is:

T. amazonia (J. F. Gmel.) Exell, based on *Chuncoa amazonia* J. F. Gmel.

Add reference to Exell in Pulle, Fl. Surin. 3. 1. 173 (1935).

- p. 328 *Terminalia nyssaefolia* Britt. falls into synonymy under: **T. lucida** Hoffmanns. ex Mart. Add reference to Exell in Pulle, Fl. Surin. 3. 1. 173. Delete "Endemic", and substitute distribution: Panama to Guiana and Brazil.

T. Tanibouca Rich. is *nomen illegitimum*, and name, synonyms and references should be altered to:

4. **T. dichotoma** G. F. W. Mey.

Tanibouca guianensis Aubl.

Terminalia Tanibouca Rich. (*nom. illegit.*)

Exell in Pulle, Fl. Surin. 3. 1. 172 (1935).

- p. 329 **Buchenavia capitata** (Vahl) Eichl. Add record: Tobago (Broadway 4447) *fide* Broadway in MS.

- p. 331 Substitute for the key to species of *Combretum* the following, and compare notes below:

Fruit winged.

Lvs. with tufts of rusty-brown hairs in the axils of the lateral veins 1. *C. spinosum*

Lvs. glabrous beneath.

Fruit ovate, the wings rigid 2. *C. laxum*

Fruit oblong-ellipsoidal, the wings membranous.

Petioles extremely short, up to about

2 mm. 6. *C. frangulifolium*

Petioles longer

Wings on fruit 6-8 mm. broad 3. *C. fruticosum*

Wings on fruit 3-4 mm. broad 4. *C. trinitense*

Fruit angled 5. *C. Cacoucia*

C. eriopetalum (P.DC.) G. Don becomes a synonym of *C. spinosum* H. et B. Pl. Acquin. ii. 161 according to A. W. Exell (script. in Herb. Kew, and in litt.)

p. 332 The citation and synonymy of *C. cacoucia* should read :

5. *C. Cacoucia* (Baill.) Exell

Terminalia Cacoucia Baill.

Cacoucia coccinea Aubl.

Combretum coccineum (Aubl.) Engler et Diels *non*
C. coccineum Lam.

Add reference to Exell in Pulle, Fl. Surin. 3. 1. 167.

Add species :

6. *C. frangulifolium* H.B.K.

C. corylifolium Griseb. Fl. 711 *nomen*

H.B.K. Nov. Gen. et Sp. Pl. 6. 109, t. 538.

"Tree" (*vide* H.B.K.); young branches and petioles conspicuously brownish-lepidote; *lvs.* opposite, elliptic to broadly ovate-elliptic, obtuse or very shortly and broadly cuspidate at the apex, cuneate or rounded at the base, 7.5-13 cm. long, 4.5-9.7 cm. broad, thin and papery with a wavy margin, glabrous, sparsely lepidote above, paler, densely lepidote and very intricately reticulate beneath, lateral nerves 8-10 on each side of the midrib; *petiole* extremely short, usually less than 2 mm. long; *spikes* terminal, usually solitary, up to 8 cm. long, densely lepidote; *bracts* oblong, as long as or shorter than the ovary; *calyx* pear-shaped, densely lepidote, 4-5 mm. long, lobes ovate, acute; *petals* (according to H.B.K.) white, obovate-cuneate, glabrous, a little shorter than the calyx; *ovary* very densely lepidote; *fruit* (according to H.B.K.) conical-club-shaped, 4-winged, 1.5 cm. long, wings membranous, undulate-cripsed, slightly narrower than the body of the fruit (immature fruits only were known to H.B.K.).

Trinidad: *Purdie* in Herb. Kew labelled *C. "corylifolium* Gr. ined." by Grisebach. Identified by Mr. A. W. Exell.

Venezuela.

MYRTACEAE

p. 336 ***Calyptranthes sericea* Griseb.** Extend the Tobago records as follows: *Broadway* 4864, *The Widow*, and *Sandwith* 1624, *Bacolet*.

After this species add note: *Sandwith* 1769 from *Roxborough-Parlatuvier Road* near 5th milepost appears to be a new species of *Calyptranthes* or of *Marlierea*, not sufficiently complete for description. It is a small tree, 30-40 ft. high, with large elliptical leaves (up to 20 cm. long and 11 cm. wide), short clustered silky-pubescent axillary inflorescence-branches, and small pale green buds pubescent at the apex. Material is required from this locality. (*Kew Bull.* 1938 p. 360).

p. 337 ***Amomis caryophyllata* (Jacq.) Krug & Urb.** The correct nomenclature of the West Indian Bay tree has been the subject of some discussion, mainly around the point whether *Amomis* Berg. should or should not be separated from *Pimenta* Lindl. Under *Amomis* the generally accepted name has been *A. caryophyllata*, based on *Myrtus caryophyllata* Jacq. (1767), and under *Pimenta*, *P. acris* (Sw.) Kostel, based on *Myrtus acris* Sw. (1788).

J. W. Moore, in *Bernice P. Bishop Museum Bulletin* 102, p. 33 (1933), concludes that "the genus *Amomis* is not sufficiently distinct from *Pimenta*, as its putative character, the amount of coiling of the embryo, is variable even in the same species". Moore also shows that *Myrtus caryophyllata* Jacq. was a later homonym of *M. caryophyllata* L., and the epithet *caryophyllata* thus becomes unusable under either genus. The oldest available name is apparently *Caryophyllus racemosus* Mill. *Gard. Dict.* ed. 8 (1768), and the combination to be adopted by rules is therefore ***Pimenta racemosa* (Mill.) J. W. Moore loc. cit.**

To be more precise, the typical form of the Bay tree should now be known as ***P. racemosa* (Mill.) J. W. Moore var. *racemosa*** Fosberg in *American Midland Naturalist* 27, 761 (1942). This distinguishes it from the var. *grisea* (Kiaersk.) Fosberg (*Amomis grisea* (Kiaersk.) Britton in *Britt. & Wils. Sci. Surv. Porto Rico* 6, 28) of the Greater Antilles.

p. 337 ***Krugia ferruginea* (Poir.) Urb.** Add Tobago records: *Broadway* 4451 and 8932, *Menna Road*; *Sandwith* 1929, *Roxborough-Parlatuvier Road*.

p. 345 **Eugenia L.** A serious omission from the key to species renders it unworkable as it stands. The first few lines should read as follows :

Fls. mostly solitary in the axils of
bracts 1. *E. ligustrina*

Fls. in axillary clusters, umbels or
contracted racemes, rarely solitary.

Fls. sessile, or essentially sessile.

Lvs. relatively small (4-7 cm. long) 2. *E. floribunda*

Lvs. large (12-27.5 cm. long) 3. *E. Baileyi*

Fls. distinctly pedicellate.

Lvs. glaucous beneath 4. *E. albicans*

Lvs. not glaucous beneath (key continues as on p. 346).

p. 351 **Eugenia domingensis Berg.** Following comment about the type of *E. aeruginea* DC. (lines 18-20) add reference to Sandwith in Kew Bull. 1934, pp. 124-126.

E. Cruegeri Krug. & Urb. Add to description: A small shrub; infl. and calyx very pale mauve with greenish tinge (ex Sandwith in Kew Bull. 1938, p. 361) Add record: Sandwith 1920, on slopes descending to Bloody Bay, Tobago.

p. 352 At end of *Myrtaceae* add note: *R. L. Brooks* in Herb. Trin. 12630, Parlatuvier Road, Tobago (coll. 1932; fr. and lvs. only) is not yet identified. It has the vernacular name "Black Plum" and probably represents another species of *Eugenia*.

LECYTHIDACEAE

p. 353 **Eschweilera subglandulosa (Steud.) Miers.** Add local names: Guatecare; Watercare.

MELASTOMACEAE

p. 364 **Platycentrum clidemioides Naud.** Add Tobago record: Sandwith 1930, Roxborough-Parlatuvier Road, in Forest Reserve of Main Ridge, Oct. 1937.

p. 365 **Conostegia icosandra (Sw.) Urb.** Add Tobago record: Sandwith 1924, Roxborough-Parlatuvier Road in Forest Reserve of Main Ridge, Oct. 1937.

p. 366 **Charianthus** *D. Don*. A recent monograph of this genus by W. H. Hodge (*Contr. Gray Herb.* 135, p. 115 (1941)) shows that the records of its occurrence in Trinidad are very doubtful. The Sieber specimens cited probably came from Martinique, as also the specimens upon which the French Guiana records depend. The only authentic records are, for *C. corymbosus*, Guadeloupe, Dominica and Martinique, and for *C. nodosus*, Martinique.

p. 369 In key to species of *Miconia* the characters of 2. *M. prasina* and 3. *M. splendens* have become attached to the wrong names, and should be transposed, thus :

Lvs. not closely reticulate beneath etc. . . . 2. *M. prasina*

Lvs. with very close ultimate reticulation
etc. 3. *M. splendens*

p. 381 line 10. For "are undoubtedly both" read: "both are undoubtedly".

p. 383 **Miconia hypoleuca** (*Benth.*) *Triana*. Add Tobago records: Main Ridge, *Williams* in *Herb. Trin.* 11808; *Sandwith* 1771 in *Herb. Kew*.

p. 384 *M. serrulata* should be cited as: **M. serrulata** (*DC.*) *Naud.* The synonym on which the combination is based should read *Diplochita serrulata* *DC.* and the first reference *Griseb. Fl.* 252 in part.

M. holosericea, following *Gleason* in *Pulle, Fl. Surin.* 3. 1. 245 (1935) should be cited as :

26. **M. mucronata** (*Desr.*) *Naud.* in *Ann. Sci. Nat. Bot.* III. 16. 120 (1851)

Melastoma mucronata *Desr.* (1796)

Melastoma holosericea *L.* (1753)

Miconia holosericea (*L.*) *Triana* (1871) *non M. holosericea* *DC.*

p. 397 **Clidemia trinitensis** (*Crueg.*) *Griseb.* Add Tobago records: *Broadway* 4000, forest reserve; *Sandwith* 1774, *Roxborough-Parlatuvier Road* near 5th milepost (*Kew Bull.* 1938, p. 361).

p. 403 **Clidemia hirta** (*L.*) *D. Don*. With reference to the note on *C. elegans* *D. Don*, it should be added that *Sandwith*, having collected this variety above *Bloody Bay*, Tobago, growing with the typical plant, makes the following note: "var. *elegans* (*Aubl.*) *Griseb.* The variety seemed so distinct in the

field that it is desirable to call attention to it as an extreme form with broadly ovate, conspicuously cordate leaves which are deeply and irregularly crenate" (Kew Bull. 1938, p. 361) Gleason in Pulle, Fl. Surin. 3. 1. 224 also recognizes the variety and notes "often appearing distinct".

p. 406 **Henriettea multiflora** Naud. Add Tobago record: Main Ridge, Sandwith 1775.

p. 407 **Henriettea Patrisiana** DC. is referred by Gleason in Pulle, Fl. Surin. 3. 1. 219 (1935) to the genus *Henriettella*, using the combination *Henriettella Patrisiana* (DC.) Naud.

p. 409 **Mouriri** Aubl. The spelling **Mouriria** is preferred by some authorities.

ONAGRACEAE

p. 414 **Jussiaea** L. Several amendments are necessary in the light of a revision of the New World species of this genus by P. A. Munz in Darwiniana iv. 179-284 (1942).

p. 415 *J. peruviana* L. Munz refers material identified as this to two species, which have been confused. Adapting from his key, they may be distinguished as follows:

Leaf-veins numerous, the principal ones
20-30 on each side of the midrib
and connected by smaller veins
which are quite unbranched and
parallel, not making a network;
petioles mostly 15-40 mm. long *J. foliobracteolata*

Leaf-veins usually fewer, the principal
ones 8-20 on each side of the midrib
and connected by smaller veins
which tend to fork and make a
network; petioles usually not more
than 1 cm. long *J. peruviana*

J. peruviana L. as restricted by Munz is distributed throughout Tropical America and introduced into the Old World. It is likely to occur in Trinidad or Tobago but does not appear to have been collected. Munz erroneously cites Bourgeau 2046 (actually from Mexico) as from Trinidad, but no other local specimen; and no local material agreeing has been seen at Kew. The plant described under this name in our Flora is the other species and should be cited as:

1. **J. foliobracteola** Munz in Darwiniana iv. 228, fig. 6, t. xi. 2.

From Trinidad, Munz cites: *Britton, Hazen and Mendelson* 608, forest 4 miles east of Arima (type in New York Hb.); *Arena Reserve, Herb. Trin.* 11323 (Kew); *Kuntze* 1125, near Arima (New York); *Broadway* 5193, Arena, near Government Forests (Field Mus.); without locality, *Broadway* in 1925 (Kew) and *Lockhart* (Kew). Most of these collections came from the same general locality as the collection used in compiling our description, and some quite possibly from the same station at Arena.

The distribution of the species is Southern Mexico to Venezuela and British Guiana.

p. 416 *J. decurrens* should be cited as **J. decurrens** (Walt.) DC. with synonym *Ludwigia decurrens* Walt. Fl. Carol. 89 (1788).

p. 418 Species 8 and 9. Munz says that he "cannot follow Micheli in maintaining two species: *suffruticosa* and *octonervia*, but I have to include all the New World material under one species with complete intergradations between the various entities." He however, divides *J. suffruticosa* into 4 varieties, one of which has a forma; and as 3 varieties and the forma occur in our area, the resulting treatment is more complicated than ours. The four entities recognized by Munz in Trinidad and Tobago are keyed by him as follows:

Plants densely hirsute with hairs at least 1 mm. long; bracteoles nearly or quite lacking, only their stipules evident, usually less than 1 mm. long var. *sensiliflora*

Plants glabrous to short-pubescent, the hairs if present mostly less than 1 mm. long; bracteoles setaceous:

Leaves mostly lanceolate to ovate, not more than six times as long as wide

Stems and leaves pubescent with or less spreading hairs var. *octofila*

Stems and leaves glabrous to
strigulose var. *ligustrifolia*

Leaves almost linear, at least 10
times as long as wide var. *ligustrifolia* forma
linearifolia.

References and citations in Munz's paper are as follows:

var. *sessiliflora* (Micheli) Hassler

J. octonervia Lam. var. *sessiliflora* Micheli

Trinidad: San Fernando, *Lueren* in 1874 (New York Hb.).

Tobago: Scarborough, *Broadway* 3403, 2295; Runnymede,
Eggers 5944.

Venezuela, Guiana, common in Brazil.

var. *octofila* (DC.) Munz

J. octofila DC.

Trinidad: Tabaguite, *Broadway* 6346; Five Rivers, *Broadway* 6809.

S.E. United States to West Indies, Venezuela and Peru.

Common in the West Indies.

var. *ligustrifolia* (H.B.K.) Griseb.

J. ligustrifolia H.B.K.

J. angustifolia Lam.

J. octonervia Lam.

Oenothera octovalvis Jacq.

Trinidad: Maracas, *Broadway* 6977.

Mexico and Central America, West Indies, Trop. S. America.

Old World Tropics.

var. *ligustrifolia* (H.B.K.) Griseb. forma *linearifolia*
(Hassler) Munz

J. suffruticosa var. *linearifolia* Hassler.

Trinidad: Piarco Savannah, *Britton and Hazen* 699.

Tobago: Bacolet, *Eggers* 5563.

Range of the variety *ligustrifolia*.

It may be noted that Munz seems to lay more emphasis on pubescence than field observations on the assemblage in Trinidad and Tobago would seem to justify. He admits that var. *octofila* is almost exactly like var. *ligustrifolia* except for the pubescence; and thus, in effect, his treatment like ours recognizes two main groups within our area. On the bracteole characters used in our key, our species 8, which we have called *J. suffruticosa* L. would appear to correspond with var. *sessili-*

flora, and species 9 which we have called *J. octonervia* would appear to cover var. *octofila* and var. *ligustrifolia* with its forma *linearifolia*. It seems clear, however, from other characters such as leaf shape, and from the synonymy quoted, that Munz's division of our local assemblage follows quite different lines from ours, and it has therefore been quoted so that those who wish to use it can do so. Most users of this Flora will probably be content to recognize *J. suffruticosa* as a very variable species, and pending further study of local material to leave their determinations at the specific level.