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MELIACEAE CENTRALI-AMERICANAE  
ET PANAMENSES

BY

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MELIACEAE CENTRALI-AMERICANAE ET  
PANAMENSES<sup>1</sup>

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GUAREA L.

1. *GUAREA BREVIANTHERA* C. DC. n. sp.

Ramulis glabris cinerascentibus; foliis breviter petiolatis 3-4-jugis; foliolis oppositis elliptico-lanceolatis basi aequilatera acutis apice obtusiuscule acuminatis utrinque glabris, rhachi minutissime puberula; panicula axillari quam folium multo brevior brevissime pedunculata glabra, inferne brevissime ramulosa et superne spicatum cymuligera; floribus longiuscule pedicellatis glabris; calice 4-dentato, dentibus rotundatis summo apice acute apiculatis; petalis 4 oblongis apice attenuato-acutis; tubo stamineo cylindrico infra apicem paullo contracto margine leviter crenulato, antheris 8 minutis ovatis basi affixis; ovario rotundato glabro.

Parva arbor. Folia alterna, usque ad 15 cm. longa. Foliola in sicco firma, supra nitentia, supera usque ad 14.5 cm. longa et 5.5 cm. lata, nervi secundarii subadscendentes subrecti utrinque circiter 7, rhachis supra sulcata. Petiolus 1.5-2.5 cm. longus. Paniculae florentes circiter 7 cm. longae, ramuli usque ad 1 cm. longi, florum pedicelli fere 2 mm. longi, petala in sicco atro-rubescencia 5 mm. longa et 1.5 mm. lata, antherae 0.5 mm. longae, gynophorum ovario brevius, ovarium 4-loculare, loculi 1-ovulati, stigma carnosum orbiculare. Species antheris minutis sat insignis.

COSTA RICA: In silvis La Palma, alt. 1459 m., Novembri, *A. Tonduz* 12592.

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<sup>1</sup> In connection with a systematic study of the flora of Panama, begun under the auspices of the Smithsonian Institution several years ago, there were sent by the United States National Museum to Mr. Casimir de Candolle, for identification, a series of specimens of the family Meliaceae from Central America and Panama. The accompanying paper is a brief report upon this material. Mr. de Candolle's study has resulted in the extension of our knowledge of the group and in the recognition of 12 species and varieties as new, 7 of these being from Panama. The new forms are described in this paper.—FREDERICK V. COVILLE.

2. **GUAREA TUERCKHEIMII** C. DC. *Bot. Gaz.* 33: 250. 1902, emend.

In diagnosi adde: Capsula globosa glabra in sicco fuscescens, 2 cm. diam.

GUATEMALA: (C. DC. l. c.). Near the Finca Sepacuité, Alta Verapaz, *O. F. Cook & R. F. Griggs* 649.

3. **GUAREA COOK-GRIGGSII** C. DC. n. sp.

Ramulis glabris; foliis longe petiolatis glabris, 3-?-jugis, foliolis oppositis breviter petiolulatis magnis elliptico-lanceolatis basi aequilatera subacutis apice breviter et obtusiuscule acuminatis; paniculis quam folia brevioribus, brevissime pedunculatis glabris fere a basi bifidis, ramis spicatum cymuligeris altero longiore folii dimidium superante, cymulis 1-floris glabris, floribus brevissime pedicellatis parvis; calice acute 4-dentato juniore extus pilosulo; petalis 4 glabris oblongis apice obtusis, tubo stamineo glabro cylindraco margine minute crenulato cum petalis arcte agglutinato, antheris 8 oblongis; ovario glabro gynophorum glabrum superante oblongo-ovato 4-costulato, stilo glabro.

Arbor procera, ramuli floriferi circiter 5 mm. crassi pallidi lenticellis inconspicuis conspersi. Folia alterna 25-? cm. longa. Foliola in sicco firma membranacea minutissime pellucido-punctulata usque ad 21.5 cm. longa et fere 6 cm. lata, nervi secundarii leviter arcuati utrinque circiter 12. Petioluli 3 mm. longi, rhachis petiolusque 10 cm. longus supra leviter sulcati. Paniculae ramus maximus 16 cm. longus, pedicelli fere 1 mm. longi, petala in alabastro subadulto oblonga 3.5 mm. longa et usque ad 1 mm. lata, in sicco rubescentia, in aestivatione valvata, antherae ellipticae vix 0.75 mm. longae, ovarium 4-loculare, loculi 1-ovulati.

GUATEMALA: Near the Finca Sepacuité, Alta Verapaz, *O. F. Cook & R. F. Griggs* 408.

4. **GUAREA PALMERI** C. DC. *Bot. Gaz.* 19: 39. 1894

GUATEMALA: Prope Patulul, Febr., fructifera, *Kellerman* 5698.

EL SALVADOR: *Renson* 97. Viciniis Izalco, Depart. Sonsonate, alt. 400-600 m., *H. Pittier* 1931.

DISTRIBUTIO: Mexico.

5. **GUAREA TERNIFOLIOLA** C. DC. n. sp.

Foliis sat longe petiolatis, 1-3 jugis; foliolis oppositis breviter petiolulatis oblongo-elliptico-lanceolatis basi aequilatera acutis apice obtusiuscule et sat longe acuminatis, supra glabris subtus ad nervum

centralem petiolulisque rhachique et petiolo hirtellis; paniculis breviter pedunculatis simplicibus, florentibus quam folia multo brevioribus, hirtellis, spicatum cymuligeris, cymulis 1-3-floris, floribus pedicellatis pedicellis glabris; calice cyathiformi brevi remote 4-denticulato extus puberulo intus glabro; petalis 4 glabris ovato-oblongis basi truncatis apice acutis; tubo stamineo glabro ovato-cylindrico integro paullo sub fauce leviter contracto, antheris 8 parvis ellipticis paullo supra basin dorsi affixis; gynophoro glabro; ovario conoideo glabro gynophorum fere aequante 4-loculari, loculis 1-ovulatis, stilo glabro tereti, stigmate brevissime cylindrico.

Rami paniculiferi primum hirtelli dein glabri et albicantes usque ad 3 mm. crassi. Folia usque ad gemmulam circiter 10 cm. longa. Foliola in sicco tenuiter membranacea usque ad 14.5 cm. longa et 3.8 cm. lata, nervi secundarii subadscendentes leviter arcuati utrinque 6-7. Petioluli usque ad 4 mm., petioli usque ad 4 cm., pedicelli 1 mm. longi. Petala 9 mm. longa usque ad 2.5 mm. lata. Tubus stamineus 6 mm. longus, antherae paullo sub 1 mm. longae.

PANAMA: Remedios and vicinity, eastern Chiriquí, alt. 0-100 m., *H. Pittier* 5466.

#### 6. GUAREA PARVA C. DC. n. sp.

Foliis sat longe petiolatis glabris 4-jugis; foliolis oppositis sat longe petiolulatis obovato-lanceolatis basi aequalatera acutis apice breviter et obtuse acuminatis; paniculis axillaribus brevissime pedunculatis spiciformibus minute puberulis folia aequantibus, rhachi spicatum cymuligera, cymulis paucifloris, floribus breviter pedicellatis; calice cupulari extus puberulo intus glabro adulto irregulariter 4-fisso; petalis 4 oblongis apice subacutis extus adpresse puberulis intus minutissime velutinis, tubo stamineo cylindrico integro glabro. antheris 8 ellipticis paullo supra basin affixis; gynophoro glabro ovario inferne glabro superne hirsuto 4-loculari loculis 1-ovulatis, stilo inferne haud dense hirsuto, tereti, stigmate orbiculari carnoso.

Parva arbor. Ramuli glabri in sicco fusciscentes, floriferi 4 mm. crassi. Folia alterna, 18 cm. longa. Foliola in sicco rigido-membranacea sinuose et haud dense pellucido-punctata, supera 10 cm. longa et 4 cm. lata infera gradatim minor, nervi secundarii subadscendentes fere recti utrinque circiter 10. Petioluli 7 mm. longi, rhachis petiolusque fere 6 cm. longus teretes. Paniculae cum foliis hornotinae florentis 18 cm. longae, pedunculus 1 cm. longus, pedicelli 0.55 mm. longi, calix 2.5 mm. longus in sicco rubescens, petala 9 mm. longa, 2.5 mm. lata in sicco rubescentia, tubus stamineus 6.5 mm. longus, antherae 1 mm. longae.

PANAMA: Forest along Río Indio de Gatún, Canal Zone, near sea level, small tree, fls. white, *H. Pittier* 2810.

7. *GUAREA TRICHILIOIDES* L.

PANAMA: Marraganti, *R. S. Williams* 633.

DISTRIBUTIO: India occidentalis, America meridionalis.

8. *GUAREA TONDUZII* C. DC. n. sp.

Ramulis dense et fulvescente hirsutis; foliis modice petiolatis 4-5-jugis, foliolis oppositis modice petiolulatis oblongo-ellipticis basi aequilatera acutis apice obtuse acuminatis, utrinque ad nervos parce et ad paginam dense fulvescente hirsutis, petiolulis rhachique et petiolo dense fulvescente hirsutis; paniculis breviter pedunculatis fructiferis quam folia pluries brevioribus dense et fulvescente hirsutis, inferne ramulosis superne spicatum cymuligeris; calice obtuse 4-dentato extus capsulaque dense et fulvescente hirsutis; capsula subtetragono-globosa inferne breviter attenuata 4-loculari loculis monospermis.

Arbor 4-5 m. alta, corona rotundata, truncus 12-15 cm. diam. Folia alterna circiter 16 cm. longa. Foliola in sicco rigida, supera usque ad 18 cm. longa et 6 cm. lata, infima cito decidua et haud visa, nervi secundarii utrinque 10-12 leviter arcuati. Petioluli fere usque ad 7 mm. longi, rhachis petiolusque usque ad 3 cm. longus teretes. Panicula fructifera usque ad 8 cm. longa, capsula fere matura 2 cm. diam., cotyledones superpositi.

COSTA RICA: Collines de Tremedal près San Ramón, alt. 1200-1300 m., *A. Tonduz* 17677.

9. *GUAREA BULLATA* Radlk. Bull. Herb. Boiss. ser 2. 5: 192. 1905

COSTA RICA: (Radlk. l. c.) In silvis Río Naranjo, alt. 200-250 m., *A. Tonduz* 7654.

10. *GUAREA WILLIAMSII* C. DC. n. sp.

Foliis modice petiolatis 2-?-jugis glabris; foliolis oppositis breviter petiolulatis ellipticis basi aequilatera acutis apice breviter et obtusiuscule attenuatis; paniculis axillaribus, fructiferis quam folia brevioribus glabris; capsula pyriformi basi breviter attenuata in sicco atrorubescente et lenticellis pallidis conspersa 4-loculari.

Rami paniculiferi glabri 5 mm. crassi in sicco pallide fusciscentes. Folia alterna 11-? cm. longa in specimine incompleta. Foliola in sicco subcoriacea, supera usque ad 13.5 cm. longa et 7 cm. lata, infera

minora conformia. Paniculae fructiferae 7 cm. longae, pedunculus 15 mm. longus 4 mm. crassus. Capsulae circiter 3.5 cm. longae et superne 2.5 cm. latae pars infera attenuata 3 mm. longa.

PANAMA: Boca de Cupe, *R. S. Williams* 683.

#### 11. GUAREA LONGIPETIOLA C. DC. n. sp.

Foliis longe petiolatis 4-jugis, foliolis oppositis magnis, sat longe petiolulatis, obovato-lanceolatis basi aequilatera acutis apice obtusiuscule et sat longe acuminatis, supra glabris subtus minute puberulis; paniculis axillaribus, fructiferis quam folia brevioribus breviter pedunculatis glabris pyramidato-ramosis; capsula pyriformi 4-loculari glabra superne lenticellis irregulariter torulosa vel laevi inferne sat longe attenuata, oculis monospermis.

Rami paniculiferi 1.5 cm. crassi glabri in sicco pallide virescentes vel albescentes. Folia alterna usque ad gemmulam 35 cm. longa. Foliola in sicco membranacea minute pellucido-punctulata, supera usque ad 25 cm. longa et 8 cm. lata infera paullo minora, nervi secundarii subadscendentes recti utrinque circiter 12, petioluli 10 mm. longi, rhachis petiolusque usque ad 17 cm. longus teretes. Paniculae pedunculus 2 cm. longus, 7 mm. crassus. Capsula fere matura 5 cm. longa superne 3 cm. crassa, ejus pars infera attenuata usque ad 10 mm. longa.

PANAMA: Boca de Pauarandó on Sambú River, southern Darién, alt. 20 m., *H. Pittier* 5580. Around Garachiné, in forest near sea level, *Pittier* 5697. Vicinity of San Felix, eastern Chiriquí, alt. 0-120 m., *Pittier* 5439.

#### 12. GUAREA CULEBRANA C. DC. n. sp.

Foliis modice petiolatis glabris, 15-jugis, foliolis oppositis brevissime petiolulatis magnis obovato-ellipticis basi aequilatera acutis apice breviter et obtuse attenuatis; panicula simplici spicatum cymuligera glabra quam folium pluries brevior; fructu immaturo pyriformi adpresse puberulo 5-loculari, oculis 2-ovulatis ovulis collateralibus.

Arbor. Folia usque ad gemmulam 34 cm. longa. Foliola in sicco rigido-membranacea minutissime pellucido-punctata, usque ad 26 cm. longa et 9.5 cm. lata, nervi secundarii subadscendentes leviter arcuati utrinque circiter 14. Foliola infera utrinque 10, in specimine deficientia. Petioluli fere 3 mm. longi. Rhachis in sicco subteres supra leviter sulcata. Petiolus teres 5 cm. longus.

PANAMA: Along the Río Culebra, above Santa Isabel, Province of Colón, near sea level, *H. Pittier* 4160.

13. *GUAREA PITTIERI* C. DC. n. sp.

Ramulis junioribus velutine hirtellis dein glabris; foliis longe petiolatis 3-4-jugis, foliolis oppositis modice petiolulatis ellipticis basi ima acutis apice modice obtuse vel subacute acuminatis supra glabris subtus rhachique et petiolo velutine puberulis; panicula pyramidatim ramosa velutine puberula folium fere aequante; calice obtuse aut subacute 5-dentato extus dense et adpresse hirtello; petalis oblongis superne attenuato-acutis subtus dense et adpresse hirsutis; tubo stamineo subovato-cylindrico margine integro extus lineatim et adpresse hirsuto, antheris ellipticis; ovario oblongo dense et adpresse hirsuto gynophorum glabrum multo superante 6-loculari, loculis 2-ovulatis ovulis superpositis, stilo inferne adpresse hirsuto, stigmate orbiculari.

Ramuli elenticellosi pallide et rubelle fuscescentes. Folia alterna fere 23 cm. longa. Foliola in sicco firme membranacea pellucido-punctulata et parce pellucido-lineolata, usque ad 14 cm. longa et fere 7 cm. lata, nervi secundarii subrecti utrinque 7-8. Petioluli usque ad 1 cm. longi, petiolus 11 cm. longus. Paniculae ramuli inferi circiter 4 cm. longi, rhachis 5 mm. crassa, cymulae 1-florae, pedicelli 2 mm. longi, calix cum dentibus 5 mm. longus, petala 10 mm. longa et inferne 2.5 mm. lata, in sicco subcoriacea et subtus pallide virescentia, tubus stamineus fere 9 mm. longus, antherae fere 1.25 mm. longae dorso supra basin sessiles.

COSTA RICA: Tuis, prope Turrialba, alt. 620 m., Junio, florens, *H. Pittier* 11245.

## TRICHILIA L.

## SECTIO EUTRICHILIA C. DC.

14. *TRICHILIA CHIRIQUINA* C. DC. n. sp.

Foliis modice petiolatis impari-pinnatis 3-jugis; foliolis lateralibus oppositis brevissime petiolulatis superis obovato-lanceolatis basi aequilatera acutis apice breviter et obtuse acuminatis emarginulatisque infimis quam superi multo minoribus ellipticis omnibus adultis supra ad nervum centralem subtus ubique et sat dense rhachique hirsutis; paniculis axillaribus terminalibusque folia fere aequantibus axillaribus brevissime et remote ramulosis terminalibus pyramidato-ramosis, ramis rhachique dense hirsutis, ramis spicatum cymuligeris cymulis sessilibus umbelluliformibus; floribus pedicellatis, calice profunde 5-dentato extus dense hirtello intus glabro dentibus ovato-acutis; petalis 5 ovato-acutis extus puberulis intus minute velutinis; tubo stamineo ultra medium laciniato inferne extus glabro intus



villosa, laciniis 10 lineari-oblongis utrinque villosis in apice truncato antheriferis, antheris sessilibus ovatis apice mucronatis pilosulis; disco carnoso hirsuto cum tubo stamineo brevissime stipitato; ovario 3-loculari stiloque hirsutis.

Ramuli hirtelli, paniculiferi 5 mm. crassi in sicco fusciscentes elenticellosi. Folia alterna circiter usque ad 18 cm. longa. Foliola in sicco membranacea epunctulata, supera fere usque ad 11.5 cm. longa et 4.5 cm. lata, infima 2.3 cm. longa et 1.7 cm. lata, nervi secundarii subadscendentes recti in foliolis superis utrinque circiter 12; petioluli laterales 2 mm. terminales 10 mm. longi. Paniculae terminalis rami usque ad 5 cm. longi, pedicelli 1.55 mm. longi. Flores in vivo albi, calix cum dentibus 1.5 mm. longus, petala in aestivatione quincuncialia fere 3.5 mm. longa, 1.5 mm. lata.

PANAMA: Vicinity of David, alt. 30-80 m., *H. Pittier* 2838.

15. *TRICHILIA ALBIFLORA* C. DC. n. sp.

Foliis longe petiolatis 5-8-jugis; foliolis breviter petiolulatis elliptico-lanceolatis terminali basi aequilatera acuto lateralibus oppositis basi inaequilatera acutis omnibus apice acute et sat longe acuminatis utrinque hirsutis, rhachi fere glabra; paniculis adultis folia fere aequantibus longe pedunculatis pyramidato-ramosis sat dense hirtellis, ramis superne ramulosis, cymulis bifloris; floribus breviter pedicellatis, pedicello hirtello; calice extus hirtello intus glabro profunde 5-dentato dentibus ovatis apice subacutis margine ciliolatis; petalis 5 elliptico-oblongis apice subacutis extus glabris intus minute velutinis; filamentis usque ad medium in tubum utrinque glabrum ovato-cylindricum connatis superne lineari-oblongis apice truncatis utrinque et praesertim intus pilosis, antheris in apice filamentorum sessilibus ovato-oblongis; ovario sessili dense et sat longe hirsuto 3-loculari, loculis 1-ovulatis; stilo glabro tereti ovarium aequante, stigmatibus breviter cylindricis.

Rami paniculiferi glabri in sicco atrorubrescentes lenticellis pallidioribus ellipticis conspersi circiter usque ad 5 mm. crassi. Folia alterna usque ad 35 cm. longa. Foliola in sicco membranacea minute pellucido-punctulata, terminalia fere 5.5 cm. longa et 1.9 cm. lata, lateralibus supera usque ad 8 cm. longa et 2.6 cm. lata, infera gradatim minora, nervi secundarii subadscendentes subrecti in foliolis superis utrinque 12. Petioluli usque ad 3 mm. longi. Rhachis petiolusque usque ad 7.5 cm. longus supra complanati. Paniculae adultae pedunculatae usque ad 14 cm. longae glabrae, rami inferi circiter 6.5 cm. longi. Calix membranaceus cum dentibus 0.55 mm. longus. Petala

in aestivatione valvata membranacea in vivo alba 5 mm. longa usque ad 2 mm. lata. Tubus stamineus usque ad lacinias 1.5 mm. longus.

COSTA RICA: Ojos de Agua, alt. 900 m., Provincia Alajuela. *H. Pittier* 3677.

16. **TRICHILIA BIOLLEYI** C. DC. Bull. Herb. Boiss. ser 2. 5: 423. 1905

COSTA RICA: (C. DC. l. c.) Bords d'un ravin à Nuestro Amo, Llanos de Turucares, alt. 750 m., petit arbre, *H. Pittier* 16395.

17. **TRICHILIA CUNEATA** Radlk. Sitzungsber. Math.-Phys. Akad. München 9: 642. 1879

GUATEMALA: (Radlk. l. c.)

EL SALVADOR: Prope Juayua, Depart. Sonsonate, alt. 800 m., arbor mediocris, *H. Pittier* 1991.

#### SECTIO MOSCHOXYLUM C. DC.

18. **TRICHILIA HAVANENSIS** Jacq. var. **PILIPETALA** C. DC. n. var.

Ramulis glabris foliis 4-5-jugis, floribus quam in species longius pedicellatis, petalis supra pilis longis munitis.—Vern. Barrehorno.

COSTA RICA: *H. Pittier* 67.

PANAMA: Forests around El Boquete, alt. 1000-1300 m., *Pittier* 3144.

DISTRIBUTIO: India occidentalis, Mexico.

#### CEDRELA L.

19. **CEDRELA MEXICANA** Roem. Fam. Nat. Syn. 1: 137. 1846

PANAMA: Agua Dulce, Province of Coclé, in savannas, near sea level, *H. Pittier* 4985.

DISTRIBUTIO: India occidentalis, Mexico, Brasilia.

20. **CEDRELA FISSILIS** Vell. Fl. Flum. 2: 75. 1825

PANAMA: Dry wooded hills around Alhajucla, Province of Panama, alt. 30-100 m., *H. Pittier* 3729.

DISTRIBUTIO: America meridionalis.