

tions between ovaries, along which splitting occurs tardily, long persistent on the plant, glandular-pubescent; seeds 2, one in each cell, 3–4 mm. long, angled, pubescent, dark brown.

Type. Magdalena Bay, Lower California, Mexico. *R. B. Hinds*, in 1841 (K, no. 1845).

Collections are known only from Magdalena Bay and Santa Margarita and Santa Magdalena islands, and have been made only along the coastal region. The fact that specimens with mature flowers have been collected from January through November, may indicate that flowering occurs whenever there is sufficient moisture.

Specimens examined. LOWER CALIFORNIA, MEXICO. Magdalena Bay: May 29, 1925, *Mason 1885* (DS, CAS, NY, US); October 10, 1939, *Berry 51* (DS, CAS); January, 1889, *Brandegee* (DS), November, 1902 (US); 1888, *Bryant* (CAS, type of *G. frutescens* Curran). Magdalena Island: January 13, 1889, *Brandegee* (UC, US), March, 1892 (NY, UC); 1888, *Bryant* (UC); April 11, 1930, *Johansen 620* (DS); March 1917, *Orcutt 45* (US), March, 1917, 88 (NY, US); November 24, 1905, *Nelson & Goldman 7295* (US). Santa Margarita Island: April 9, 1930, *Johansen 617* (CAS, DS); March 19, 1911, *Rose 16284* (UC, US), March 20, 1911, 16284b (NY).

Dudley Herbarium
Stanford University, California

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STUDIES ON THE FLORA OF CHIAPAS, MEXICO—VI

EIZI MATUDA

The present paper, like the preceding ones of this series listed at the end of this paper, is devoted principally to reporting new or otherwise noteworthy species of plants from Chiapas, southernmost of the Mexican states. All of the following material has been based upon the writer's own collections.

Grateful acknowledgments are due Dr. H. N. Moldenke of the New York Botanical Garden and to Dr. Herbert L. Mason of the

University of California for their friendly suggestions and valuable aid.

MUSACEAE

Musa mexicana sp. nov. Planta valida stolonifera caespitos diam. ca. 2–2.5 m. ferens tronco diam. 10–15 cm. cauli subcylindrico. Folia longipetiolata, petioli 8–10 dm. longi subteretes diam. 3–4 cm. insuper canaliculati usque ad laminas longo-vaginati ore membranaceo fibroso ochraceo, laminae oblongo- vel elliptico-lanceolatae apice obtusae vel rotundatae basi rotundatae vel inaequilaterales, usque ad 10–15 dm. longae 26–35 cm. latae supra atro-virides subtus flavo-virides glabrae integrae nitidae (laminae juvenulatae subtus bruneo-virentes). Inflorescentia valde erecta pedunculata, pedunculus 3–4 dm. longus diam. ca. 2.5–3 cm. glaber, bractee numerosae deciduae extus roseae vel lilaceae intus pallidae subcymbiformes ovatae vel oblongo-ellipticae apice obtuso-acuminatae basi truncatae subamplexicaules 15–25 cm. longae 6–9 cm. latae chartaceae longitudinaliter nervatae, eae 6–8 vel 10 infimae flores feminas, reliquae 15–20 superiores flores masculinas subtendentes; flores utrorumque sexuum 6 vel raro 4–5 sessiles semper uniseriatim in bractee unicae axilla dispositi, eorum perigonium simplex cylindraceum aurantium latere fissum apice 5-dentatum ore reflexum basi truncatum amplexicaule striatum; petalum unicum (perigonium interius) decolor semipellucidum ovatum apice acuminatum vel acutum perigonio aequilongum basi truncatum paullo vel valde striatum. Perigonium florum masculinorum basi truncato-amplexicaule, 3.5–4.2 cm. longum; stamina 5 primo sepalis breviora sub anthesi eis paullo longiora exserta, filamentis complanatis 2.7 cm. longis, antheris connatis linearibus bilocularibus purpureis 1.8 cm. longis; ovarii rudimentum nudum trigono-obconicum stylo columnariformi albo usque ad medium trifido. Staminodia florum feminarum 5 teretes albida apice aristata 2 cm. longa; eorum stylus teres albidus 3–3.5 cm. longus primo pilosiusculus sub anthesi glabratus stigmate capitato ovario 3-loculare glabro tetragono-subcylindrico 4–4.5 cm. longo 0.7–1 cm. lato. Fructus tetragono-cylindraceus diam. 1.5 cm. 6–8 cm. longus; semina numerosa (35–55), semiturbinate depressa nigra (figs. 1–10).

Type. Brookside at about 100 m. altitude, in a wet sunny field, near Colonia Hidalgo, Acacoyagua, Chiapas, June 5, 1948, *Matuda 18320* (Matuda Herbarium; isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimens. CHIAPAS. Moist sunny thickets along brookside near Cruz de Piedra, 4 km. north of Acacoyagua, July 15, 1948, *Matuda 18321*; beside brook in wet field, altitude about 150 m., Colonia Cintalapa, 7 km. east of Escuintla, August 15, 1948, *Matuda 18319*; moist thickets along brookside, Patate, 12

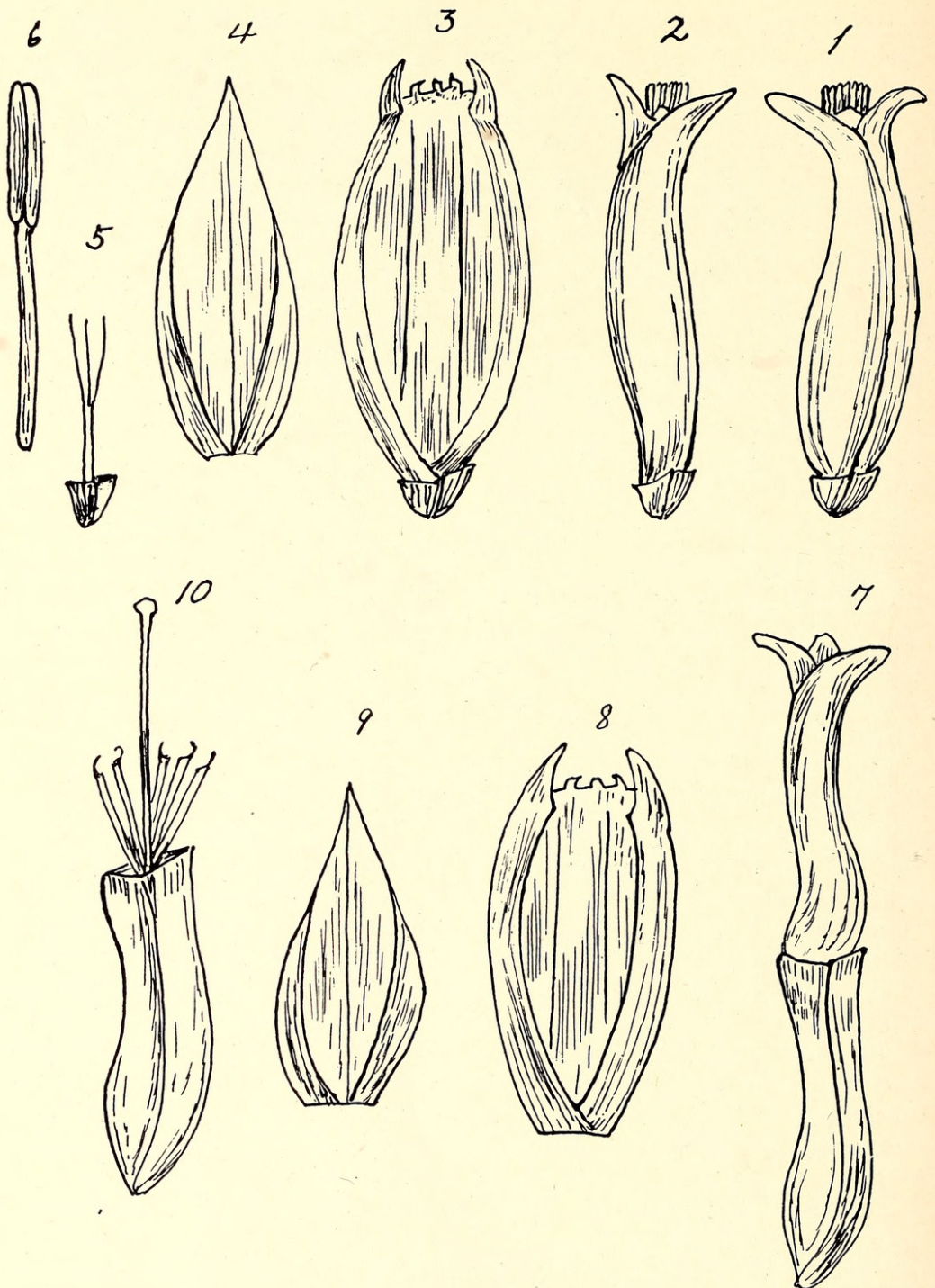


FIG. 1. Flowers of *Musa mexicana* Matuda. 1-6, staminate flower: 1, general view; 2, side view, 3, perigonium, opened; 4, petal, opened; 5, rudimentary pistil; 6, stamen. 7-10, pistillate flower: 7, side view; 8, perigonium, opened; 9, petal, opened; 10, pistil showing staminodia. All approximately natural size.

km. north of Acapetahua (a Pan-American railway station), June 20, 1949, *Matuda 18669*.

Local name: "Plátano silvestre." Occasional, being neither common nor yet rare, and mostly in the wild state. It is never found at elevations below 100 meters, being evidently restricted to a belt between 100 and 300 meters above sea level, and always close to the banks of brooks. It is quite generally distributed between these elevations in the District of Soconusco, and it is sometimes cultivated by the natives along plantation-borders for its attractive rosy bracts.

This new species seems very close to *Musa rosacea* Jacq., but it differs from this in its longer perigonium, and in having six flowers uniseriate in the axils of single bracts, very wide acuminate petals and long stout petioles.

Musa mexicana is not only noteworthy as a novelty but is, in addition, the first record of the occurrence of the genus *Musa* in the native wild flora of the American continent. All the other species so far known have originated in southeastern Asia.

ARACEAE

Anthurium giganteum sp. nov. Planta acaulis caudice radicibusque aeriis carnosis numerosis cataphyllis latis ca. 4 cm. longis mox emarcidis fibrosis, foliis magnis petiolatis coreaceis oblanceolato-oblongis 11–12 dm. longis medio 3–5 dm. latis ad apicem versus gradatim attenuatis vix acuminatis basi acutis vel cuneatis costa crassa venis lateralibus 18–20 patentissimis arcuatim in marginem excurrentibus petiolis crassis 7–15 cm. longis, vivis semitrigonis geniculis ca. 1.5 cm. longis vaginis basalibus parvis circiter 3 cm. longis, pedunculis teretibus crassis glabris 45–50 cm. longis, spatha persistente glauca vel lilacina nitida lineari-lanceolata basi rotundata apice acuta spadice fructifero lilacino cylindraceo 50–65 cm. longo, diam. 2–2.5 cm. floribus ignotis.

Type. On large tree in damp woods by river bank, altitude about 250 m., Salto de Agua, 15 km. northeast of Escuintla, Chiapas, July 15, 1948, *Matuda 18043* (Matuda Herbarium, isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

The affinities of this species are with *Anthurium salviniae* Hemsl. and *A. crassinervium* Schott, but our species is readily distinguished by its large leaves and very large and long spadix.

Anthurium cuspidatum sp. nov. Planta majuscula terrestris caudiculo brevi crasso internodiis brevissimis cataphyllis latis ca. 3 cm. longis fibrosis mox decompositis, petiolis gracilibus subteretibus 20–28 cm. longis fere 1 cm. infra apicem nodoso-incrassatis, laminis coreaceis elongato-hastiformibus 20–25 cm. longis infra medium 6 cm. latis ad apicem versus gradatim attenuatis vix acuminatis vel cuspidatis lobis posticis apice subrotundatis sinibus 15–25 cm. latis ex basi 9-nervosa costa elevata

utroque latere nervis ca. 6 angulo angusto adscendentibus tenerimis subarcuatis prope marginem in nervum collectivum conjunctis, pedunculis gracilibus 30 cm. longis, spatha reflexa rufescente lanceolata apice acuminata basi truncata dilatata amplectente 5 cm. longa diam. 1 cm., spadice sessili in sicco fusco-purpureo 5.5 cm. longo gracili.

Type. In a shaded forest, altitude 700 m., near Colonia Jalapa, 32 km. east of Escuintla, Chiapas, July 3, 1948, *Matuda 18316* (Matuda Herbarium; isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimen. In mature forest, altitude 1800 m., near Colonia San Juan Panamá, about 45 km. east of Escuintla, on the Pacific slope of the Sierra Madre de Chiapas, Chiapas, July 23, 1948, *Matuda 18159*.

ANTHURIUM CHIAPASENSE Standl. Field Mus. Pub. Bot. 22: 67. 1940.

This plant, previously known only from the type collection, was recently collected by the writer in a mature mixed rain forest on the Pacific slope of the Sierra Madre de Chiapas at an elevation of 1800 m. near Colonia San Juan Panamá, about 50 km. east of Escuintla, Chiapas, July 23, 1948 (*Matuda 18315*).

Philodendron monticola sp. nov. Planta epiphytica scandens caudiculo crasso internodiis superioribus radicibus aeriis haud exceptis 7 cm. longis, petiolis teretibus crassis ca. 4 dm. longis vaginis 6 cm. longis laminis coreaceis oblongis cordiformibus ca. 35 cm. longis basi 26 cm. latis apice sensim acuminatis basi late profundeque cordatis lobis posticis obtuse rotundatis auricularum venis 5 arcuatim excurrentibus reliquis utrinque 6 vel 7 prominentibus, pedunculo crasso terete 7 cm. longo, spatha 10–12 cm. longa infra medium valde constricta basi subglobosa clausa extus viridi intus ochroleuca infra basim purpurea, spadice vix exserto albido-flavescente cylindrico-subsessili 8 cm. longo longitudinis quartam partem pistillato reliquam partem sine staminodiis staminato.

Type. On a large tree in mature forest on the Pacific mid-slope of the Sierra Madre, altitude 1600 m., near Colonia San Juan Panamá, 50 km. east of Escuintla, July 22, 1948, *Matuda 18169* (Matuda Herbarium; isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Philodendron monticola may be distinguished from *P. oxycardium*, its closest relative, because of its thick leaf and rather small spathe. Also, it occurs at a much higher altitude, *P. oxycardium* occurring in southern Mexico between the altitudinal limits of 100 and 500 meters.

Philodendron apocarpum sp. nov. Planta epiphytica scandens ramulorum internodiis superioribus diam. 1.5–2 cm. ca. 12 cm. longis petiolis ca. 20 cm. longis gracilibus usque ad $\frac{2}{3}$ longitudinis vaginatis laminis coreaceis oblongo-cordatis integris apice acutis vel acuminatis basi lata breviter lateque cordatis 12–15 cm. longis 12 cm. latis nervis primariis ca. 8 subtus prominentibus, pedunculo crasso tereti spatham subaequilongo, spatha semipersistente decidua ca. 15 cm. longa infra medium valde constricta basi sanguinea subglobosa clausa extus caeruleo-viridi intus ad apicem versus flavo-virente, spadice sessili vix exserto lacteo cylindrico 12 cm. longo eius quintam partem basalem flores pistillatos quintam partem intermediam staminodia et tres quintas partes reliquas ad apicem versus flores staminatos ferente, fructo rubente.

Type. In woods along Río Cintalapa, at Gilguero, 15 km. east of Escuintla, Chiapas, altitude about 200 m., August 10, 1948, *Matuda 18313* (Matuda Herbarium, isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimens. CHIAPAS. In extensive open woods along Río Cintalapa, near Aguas Calientes, 3 km. northwest of Escuintla, altitude 70 m., *Matuda 18312*; in open woods along brooks, Salto de Agua, Escuintla, altitude 250 m., September 8, 1947, *Matuda 17789*; in open woods, epiphytic on a large tree, Esperanza, 15 km. northeast of Escuintla, altitude 200 m., August 12, 1948, *Matuda 18314*.

Philodendron apocarpum has much the general aspect of *P. oxycardium* which occurs in the same region and with which it has been confused. Our species is readily distinguished by its thinner leaves and longer petiole-sheaths, but a more essential difference is to be noted in the form of the female flowers, conspicuous for their masses of elongated ovaries. The spathe is semi-persistent, not deciduous until after the fruit has ripened.

ANNONACEAE

ANNONA SPRAGUEI Safford, Contr. U. S. Nat. Herb. 16: 270. 1913.

This species has been treated as a restricted endemic of Panama in Standley's Flora of the Panama Canal Zone (Contr. U. S. Nat. Herb. 27: 180. 1928), and as far as I am aware, there have been no reports of its occurrence elsewhere. Yet *Annona Spraguei* occurs on the Pacific slope of the Mexican State of Chiapas (in sandy sunny woods drained by Río Cacaluta, Colonia Hidalgo, 16 km. north of Acacoyagua, altitude about 100 m., September 3, 1947, *Matuda 16888*). Its local name is "Chincuya de llano." This specimen was once identified by J. Steyermark as *A. purpurea* Moc. & Sesse and so distributed.

ANNONA SCLERODERMA Safford, Jour. Wash. Acad. Sci. 3: 105, fig. 1. 1913. Contr. U. S. Nat. Herb. 18: 18, figs. 22–23. 1914; Standley & Steyermark, Flora of Guatemala, Fieldiana, Bot. 24 (4): 279–280. 1946.

This plant was described from Guatemala and is known as well from British Honduras and the Atlantic coast of Honduras, but apparently, there has been no previous indisputable record of its occurrence in Mexico. In his description of *A. scleroderma*, Safford (op. cit., p. 106) stated, "seeds sent . . . to the U. S. Department of Agriculture from the state of Oaxaca belong very probably to this species." It has been found to grow in the Pacific coastal lowland forest in Chiapas and is known only in the wild state (Finca Esperanza, in a mixed wet forest, 8 km. northeast of Escuintla, altitude 160 m., September 15, 1948 *Matuda 18405*). Its local name is "chirimoya de monte." The edible fruits ripen in January and February. In this region, this tree grows 15 to 20 meters tall with a trunk diameter of 2.5–3 decimeters and with a rather well developed crown.

MELIACEAE

CEDRELA SALVADORENSIS Standl., Field Mus. Publ. Bot. 4: 215. 1929.

This plant had been reported earlier from Salvador and more recently from Guatemala (Standley & Steyermark, Flora of Guatemala, Fieldiana, Bot. 24 (5): 450. 1946). Now it is known to occur in Chiapas, southern Mexico (wet mixed forest, altitude about 700 m., Finca la Brisa, 25 km. east of Escuintla, August 10, 1948, *Matuda 18368*). This species is therefore new to the Mexican flora and its occurrence in Chiapas probably represents the northern limit of its range.

APOCYNACEAE

Aspidosperma chiapense sp. nov. Arbor magna recta 25–30 m. alta tronco diam. 8–12 dm. ligno roseo ramulis juvenibus viridibus glabris tandem rugosis vel verrucosis griseis internodiis ca. 1 cm. longis, foliis alternatis proximis rigide coreaceis oblongo-lanceolatis ad apicem versus gradatim attenuatis utrinque vix acuminatis glabris supra lucidis subtus opacis in sicco fusco-olivaceis 15–18 cm. longis medio 4–5 cm. latis costis utrinque elevatis nervis lateralibus utrinque paulo elevatis numerosissimis approximatis parallelis in marginem revolutem desinentibus petiolis 2–3 cm. longis. Inflorescentia apice praecipue densa cymoso-paniculata vel umbelliformis paniculis terminalibus 5–7 cm. longis latisque pedunculis ramisque subglabris vel leviter hirsutis; calyx coreaceus extus minute stellatus intus glaber 3 mm. longus lobis 5 elongato-triangularibus semi-imbricatis 2 mm. longis; corolla pallide testacea salviformis vel tubiformis 7 mm. longa 5-lobata lobis filiformibus 2 mm. longis; stamina 5 prope

medium corollae oriunda filamentis liberis 1 mm. longis glabris antheris bilocularibus 1 mm. longis semi-clavatis apice acuminatis; stylus columniformis (stigmatibus inclusis) 7 mm. longus; ovarium semi-globosum apocarpum 1 mm. longum 0.8 mm. latum folliculis obovoideo-oblongis apice rotundatis mucronulatisque basi sensim attenuatis vel cuspidatis 16 cm. longis 10 cm. latis extus rugoso-nervosis minute sericeo-velutinis seminibus numerosis (30-40) semi-orbicularibus diam. ca. 8 cm. embryo submedio cotyledonibus oblongo-orbicularibus basi plus minusve cordatis 2 cm. longis. Latex in petiolis ramulisque juvenilibus albus, in folliculo pallide roseus.

Type. In wet forest, Esperanza, Escuintla, altitude about 160 m., Chiapas, Mexico, February 15, 1946, *Matuda 16361* (flowers) (Matuda Herbarium, isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimens. CHIAPAS. In the region about Esperanza, Escuintla, altitude about 160 m., August 15, 1948 (perfect leaves and immature fruit), *Matuda 18412*; in wet mixed forest, Cacaluta, Acacoyagua, altitude 170 m., February 1, 1946 *Matuda 18406* (flower and fruit).

Local names: "Chichi colorado"; "Chichi prieto."

This plant has long been confused with *A. cruentum* Woodson, who himself identified my specimen (*16361*), sent to him by the United States National Herbarium, as that species. *Aspidosperma chiapense*, however, is very different, and may be distinguished by its longer leaves, long petioles, larger follicles and rather large flowers.

This tree-species is well known and esteemed by native lumbermen for its timber, the sapwood being white or yellowish-white and the heartwood dull rose and so hard when cured that it is impossible to drive a nail into it. The bark is grayish-brown, about 4 cm. thick, scaly or with coarse deep fissures, and secretes no latex.

The original description of *A. cruentum* was based on a flowerless specimen. We therefore have had no opportunity thus far of comparing its diagnostic floral structures with those of our species.

ASPIDOSPERMA CHIAPENSE f. *tenax* f. nov. Folia semper pendula; lignum semper luteum vel luridum valde tenax.

Local name: "Chichi amarillo."

The wood of f. *tenax* is not a favorite of the native lumbermen because of its toughness. It occurs mixed with *A. chiapense* in the same forest.

Type. In wet forest, Esperanza, Escuintla, Chiapas, January 25, 1948, *Matuda 17386* (Matuda Herbarium; isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimen. In the region of Esperanza, Escuintla, Chiapas, August 15, 1948, *Matuda 18413* (perfect leaf and immature fruit).

From herbarium material alone, it is not easy to separate *A. chiapense* from its forma *tenax*, though it is easily distinguished in the forest by its generally somewhat smaller and pendent leaves of which the natives have been heard to say, "Se ve hojas tristes." A more essential character, however, is the tough yellowish heartwood. Its bark is the same color as that of *A. chiapense*, but it is rather thin and not deeply fissured. The latex which, as in the case of typical *A. chiapense*, is secreted only from young branches and petioles is always white and never pinkish.

Cufodontia escuintlensis sp. nov. Arbor magna erecta 25 m. alta diam. 5–7 dm. ramulis teretibus griseis glabris lenticellis multis parvis internodiis 1–2 cm. longis foliis alternatis coriaceis vel pergameniis oblongo-lanceolatis 15–20 cm. longis 4–5 cm. latis ad apicem versus gradatim attenuatis utrinque vix obtusis margine integris in sicco flavo-olivaceis glabris supra paulo nitidis subtus opacis costis supra impressis subtus elevatis venis primariis lateralibus utroque costae latere parallelis approximatis 27–30 gracillimis supra haud subtus tenuiter elevatis petiolo glabro supra caniculato 1–1.5 cm. longo. Inflorescentia cymae extra-axillariae alternatae floribus 25–30 constantes pedunculo minute puberulo pedicellis 3–5 mm. longis minute puberulis calycibus exterioribus coriaceis campanulatis extus puberulis intus glabris 4 mm. longis basi 1.7 mm. latis 2-lobatis apice obtuso-rotundatis concavis interioribus paulo minoribus ad 3 mm. longis 1.4 mm. latis corollis flavo-albis eorum tubis cylindricis ca. 6 mm. longis extus prope os puberulis intus tomentosis 5-lobatis diam. basi 1.3 lobis sinistrorsum contortis inter se obtectentibus oblique lineari-lanceolatis 6 mm. longis prope basem minute tomentosis demum patulis staminibus 5 prope tubi corollae medium affixis filamentis ca. 0.5 mm. longis glabris antheris 1.2 mm. longis brevissime apiculatis basi obtusis ovariiis ovoideis ca. 1 mm. longis glabris stylis ca. 2 mm. longis stigmatibus coniformibus folliculis subreniformibus verrucosis glabris apice rotundatis latere valde mucronulatis basi acuminatis 10–12 cm. longis 9–11 cm. latis seminibus suborbicularibus diam. ca. 6–8 cm. embryo submedio cotyledonibus fere oblongo-orbicularibus diam. ca. 2 cm.; pedunculo diam. 1 cm. verrucoso 1.4 cm. longo.

Type. In wet forest, Cacaluta, Acacoyagua, Chiapas, altitude 150 m., August 17, 1947, *Matuda 16978* (fruit) (Matuda Herbarium; isotypes at the Instituto de Biología de la Universidad Nacional de México and at the Chicago Natural History Museum).

Additional specimens. In wet forest, Finca Esperanza, 8 km. east of Escuintla, Chiapas, altitude 200 m., February 23, 1948, *Matuda 17538* (flower); *17634* (fruit).

Local name: "Chichi blanco."

In the region of the type locality, *Cufodontia escuintlensis* flowers in February and March; and the follicle is not fully mature until March of the following year. It has an altitudinal range of from 100 to 700 meters above sea level in the Pacific coast rain forest and is always found growing with *Aspidosperma chiapense* and its form. It has no use as timber but can be used for firewood. The natives, however, find a use for its bark, from which they make a very bitter decoction to cure malaria. The general aspect of the seed, with its papery concentric wing, is very similar to that of those of the species of *Aspidosperma*, and for this reason, our plant may be taken for a species of that genus, especially if only the follicles and not the flowers themselves are examined.

By inadvertence, two specimens (*Matuda* 16978, type of *Cufodontia escuintlensis*; 17538) were determined by Steyermark as *Aspidosperma cruentum* and so distributed.

Cufodontia escuintlensis seems rather close to *C. stegomeris* of Costa Rica, but it differs in its somewhat narrower, longer and larger leaves and in its larger floral organs. It is noteworthy that one of these specimens (16978) is the first collection ever made of a fruiting *Cufodontia*.

CUFODONTIA LUNDELLIANA Woodson, Archivio Bot. Sist. Fitogeog. & Genet. 10: 40. 1934. *Aspidosperma Lundellianum* Woodson, Bull. Torrey Club 4: 684. 1935.

Aspidosperma Lundellianum was described from fruiting material which had no flowers while the description of *Cufodontia Lundelliana* was based on flowering material devoid of fruits. I have examined a photograph of an isotype (*Lundell* 1284) of *Aspidosperma Lundellianum*, kindly forwarded through the courtesy of Dr. Rogers McVaugh, Curator of the Herbarium of the University of Michigan. Without any doubt, this is a fruiting specimen of *Cufodontia* and not of *Aspidosperma*.

When Dr. Woodson proposed the genus *Cufodontia* (Archivio Bot. Sist. Fitogeog. & Genet. 10: 39. 1934), he wrote, "It is hoped that additional, particularly fruiting, specimens of this genus will shortly be forthcoming." In point of fact, he actually *had* received, about a year previous, a representative fruiting specimen of *Cufodontia* (*Lundell* 1284), referred to above, to which he had applied the herbarium name of *Aspidosperma Lundellianum* with the date "Nov., 1933," though this binomial was not published until July, 1935. Woodson had thus described the same plant twice, each time in a different genus, basing his characters in one case on the flowers and in the other, on the fruits. The present writer has had the opportunity of collecting the flowers and fruits of *Cufodontia escuintlensis*, at different seasons to be sure, from the same tree. At the time of flowering, its fresh newly developed leaves are relatively thin while at the time the follicles are col-

lected, six months or more later (it takes one whole year after flowering for the fruit to ripen), the fully developed leaves are thick and leathery so that it seems as though they were not from the same plant species.

There are now four species of *Cufodontia*, all confined to southern Mexico and Central America. These may be distinguished as follows:

Outer calyx-tube 3.5–4 mm. or more long; pedicels 3–5 mm. long.

Leaves oblong-lanceolate (plant of Chiapas) 1. *C. escuintlensis*

Leaves elliptic (plant of Costa Rica) 2. *C. stegomeris*

Leaves oblong-elliptic, 12 × 4.5 cm., lateral nerves 15–18 (fide Woodson) 3. *C. arborea*

Outer calyx-tube never as long as 3.5 mm.; pedicels only 1 mm. long (plant of Yucatan region) 4. *C. Lundelliana*

From the same area, three species and one *forma* of *Aspidosperma* are known, which may be separated as follows:

Leaves 3–5 × 10–15 cm.; follicles 10–12 cm. long, essentially glabrous 1. *A. megalocarpon*

Leaves 2.3–3 × 6–8 cm.; follicles 8–10 × 14 × 16 cm., floccose-velutinous; latex red (fide Woodson) 2. *A. cruentum*

Leaves 4–5 × 15–18 cm.; follicles 10 × 16 cm. sericeous-velutinous.
Heartwood moderately tough, vivid or dull rose; latex of fresh follicle pale rose 3. *A. chiapense*

Heartwood yellow and very tough; cortex not thick nor scaly; latex white 4. *A. chiapense*
f. *tenax*

Specimens examined. CUFODONTIA LUNDELLIANA. Petén, Guatemala, *Lundell 3408* (photo, Chicago Nat. Hist. Museum); Tuxpena, Campeche, *Lundell 1284*, misidentified as *Aspidosperma Lundellianum* (photo, Herb. Univ. Michigan).

CUFODONTIA STEGOMERIS. Costa Rica, *Cufodontis 220* (photo, Chicago Nat. Hist. Museum).

ASPIDOSPERMA CHIAPENSE. Chiapas, *Matuda 18412, 18406, 16361* (flower) (Matuda Herb.).

ASPIDOSPERMA CHIAPENSE f. TENAX. Chiapas, *Matuda 17386, 18413* (Matuda Herb.).

CUFODONTIA ESCUINTLENSIS. Chiapas, *Matuda 16978* (fruit), *17538* (flower), *17634* (fruit) (Matuda Herb.).

Matuda Herbarium
Tacubaya, México, D.F.

EARLIER PAPERS BY THE AUTHOR TREATING THE FLORA OF CHIAPAS.

- I. On the genus *Mitrastemon*. Bull. Torrey Club 74: 133–141. 1947.
- II. A new *Dracontium* from southern Mexico. Am. Midland Nat. 41: 404–405. 1949.
- III. Some new *Araceae* from southern Mexico. Madroño 10: 47–51. 1949.
- IV. A new species of *Carludovica* from southern Mexico. Bull. Torrey Club 76: 210–212. 1949.
- V. A contribution to our knowledge of the wild flora of Mount Ovando. Am. Midland Nat. 43: 195–223. 1950.



Matuda, Eizi. 1950. "STUDIES ON THE FLORA OF CHIAPAS, MEXICO—VI."
Madroño; a West American journal of botany 10, 166–176.

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