

Preface

This paper was partly prepared by Ellsworth P. Killip, 10 years after the publication of his monograph of the Passifloraceae in 1938, to summarize the additional data acquired in the 10-year period, and to present descriptions of 8 new species. In 1956, Mr. Killip turned over the manuscript to Dr. José Cuatrecasas to use as he saw fit in the preparation of a flora of Colombia. It is now published with the addition of three new species that Mr. Killip indicated as new but did not describe. Dr. Cuatrecasas wrote descriptions for these as well as Latin diagnoses for all the new species described by Mr. Killip. Included are 11 new species and citations of all new material examined since the publication of the monograph. Dr. Lyman B. Smith, curator of the division of phanerogams, has carefully edited the manuscript.

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SUPPLEMENTAL NOTES ON THE AMERICAN SPECIES OF PASSIFLORACEAE, WITH DESCRIPTIONS OF NEW SPECIES

By ELLSWORTH P. KILLIP

Introduction

In 1938 the Chicago Natural History Museum (then the Field Museum of Natural History) published a monograph on the American species of Passifloraceae written by the present author.¹ The preparation of this monograph covered a period of many years, during which time I made three visits to Europe and consulted nearly all the type specimens as well as many others of historic importance. A large amount of material was generously placed at my disposal by those in charge of many of the larger herbaria of the world. It is therefore perhaps not surprising that in the intervening years I found little reason to revise the treatment of the species presented in the monograph.

The intensive exploration carried on in certain parts of northern South America, especially in the basins of the Orinoco and Amazon in Colombia and Venezuela, resulted in the collecting of many Passifloraceae in regions little known in 1938. In the course of studying these specimens, as well as material from Central America and other parts of South America, I detected several new species, some of which I described elsewhere. This material also shows interesting extensions of ranges of certain species, and in some instances permits a desirable amplification of the descriptions given in the monograph. It therefore seems advantageous to assemble in one place all this subsequent information along with descriptions of several new species. The numbers associated with the species of *Passiflora* are those of the monograph.

4. *Passiflora gracillima* Killip

This species is now represented in the U.S. National Herbarium by several additional Colombian collections. One specimen from the

¹Field Mus. Bot. 19. 1938.

Province of Chiriquí, Panama, was cited; the species was recollected in the vicinity of Chiriquí Lagoon in 1941 by H. von Wedel (No. 2421). Likewise, a single specimen was listed from Riobamba, Ecuador. This species is now represented by *Steyermark* 52932, which was collected between Cruz Pamba and Loma de Canela, north of Molleturo, Province of Azuay, Ecuador, at an altitude of 2,315–2,500 m. The collector noted that the fruit is edible and has a flavor similar to that of *Annona*.

10. *Passiflora gracilis* Jacq.

Additional collections are:

VENEZUELA: Bolívar: Gran Sabana, Cerro Kanaimé Santa Elena, March 1946, *Tamayo* 3025.

ECUADOR: Azuay: Between Río Gamolotal and Río Norcay, *Steyermark* 52879.

Both of these collectors noted that the fruit is red. Steyermark gave "shunshun" as a local name, and stated that the corona filaments are white with a purple streak at the center and that the seeds are red.

14a. *Passiflora ursina* Killip & Cuatr., sp. nov.

PLATE 1

Frutex elatus scandens; rami foliosi dense rufo-tomentosi; stipulae subulatae; folia coriacea trinervia ovato-oblonga vel oblonga basi truncata vel rotundata apice acuta vel subacuta mucronulata utroque latere saepe 1-lobata, lobo triangulari brevi mucronulato, subtus rufo-hirtella vel tomentella, margine integra revolutaque, petiolo brevi basi duobus glandulis minutis inconspicuis; bractee liberae subulatae; calycis tubus petalliformis, sepalis ovatis apice rotundatis subapicem corniculatis, petalis paulo brevioribus; corona filamentis biseriatis apice incrassatis exterioribus robustioribus; operculum membranaceum plicatum erectum breviter fimbriatum; ovarium glabrum.

Large, scandent shrub; leafy branches moderately thin, flexuose subterete, densely reddish brown tomentose with acute, subrigid, spreading hairs, 0.5–1 mm. long; tendrils closely spiral, tomentose; stipules subulate, hirsute, 5–6 mm. long, 0.5–1 mm. broad; petioles 8–14 mm. long, stout, straight or bent at base, densely rufo-tomentose (like the branches), the glands small, semiglobular, sessile at base, concealed by the indument; blades coriaceous, trinerved, ovate-oblong or oblong, 5–8.2 cm. long, 3–4.5 cm. broad, rounded, truncate or cordate at base, subtrilobate (or rarely entire) near the apex, the two lateral lobes very short, forming an obtuse mucronulate angle, the terminal one (the apex) acute or subacute, mucronulate, the margin entire, revolute, the surface puberulous with spreading, sparse hairs

above, pubescent or subtomentose with spreading, long, rufous hairs beneath, the 3 nerves and veins very prominent beneath, little conspicuous above; a few minute, semiglobose glands near the base beneath; inflorescence cymose, the cymes in pairs with 5–7 flowers, the rachis less than 1 cm. long; bracts subulate, 3–5 mm. long, up to 0.5 mm. broad, rufo-hirsute; the peduncles thick, straight, rufo-tomentose, 8–14 mm. long, articulate about the middle or slightly above the middle; flowers 2.5–3 cm. wide, greenish white; sepals ovate, obtuse, 1.1–1.3 cm. long, 0.7–0.9 cm. wide, dorsally more or less hirsute and keeled, corniculate below the apex, the horn up to 3 mm., hairy; petals membranaceous, ovate, narrowed at both ends, obtuse, subdentate below the apex, 1–1.1 cm. long, 0.6–0.7 cm. wide; corona filaments filiform, much dilated at apex, in 2 series, the outer about 3.5 mm. long, rigidulous, the inner about 2.5 mm. long, thinner and flexuose; operculum membranaceous, closely plicate, short-fimbriate, 1.5 mm. high; limen annular; gynophore absent; ovary ellipsoid-obovoid, glabrous.

Type in the U.S. National Herbarium, No. 1799118, collected at Páramo de Santa Lucía, south side of Laguna de la Cocha, Department of Nariño, Colombia, at an altitude of 2,900–3,100 m., on Jan. 9, 1941, by J. Cuatrecasas (No. 11886).

P. ursina is closely related to *P. apoda* Harms and *P. sodiroi* Harms, from which it differs in the thick, longer, rufous indument, in the shorter petioles with sessile, minute basal glands concealed by the indument, and more conspicuously in the horned sepals. It differs from *P. sodiroi* in lacking the gynophore and in the form of the petals, and from *P. apoda* by the shorter corona filaments.

26. *Passiflora dolichocarpa* Killip

Known only from the type specimen at the time of my monograph, this species is now represented in the U.S. National Herbarium by the following additional collections:

MEXICO: Chiapas: Hacienda Siltepec, *Matuda* 1892.

GUATEMALA: Jalapa: Between Jalapa and Montaña Miramundo, alt. 1,500–2,000 m., *Steyermark* 32884 (F). Suchitepéquez: Volcán Santa Clara, alt. 1,250–2,650 m., *Steyermark* 46761.

46a. *Passiflora macrostemma* Killip, Field Mus. Bot. 23:217. 1947.

Additional collections are:

GUATEMALA: Chiquimula: Volcán de Quezaltepeque, alt. 1,500–2,000 m., *Steyermark* 31519 (F, type, US photo and fragment), 31281 (F). Jalapa: Montaña Durazno, alt. 1,400–1,900 m., *Steyermark* 32985 (F).

61. *Passiflora lancearia* Mast.

Recorded as being confined to Costa Rica, this species was collected in the Province of Chiriquí, Panama, in 1938 by M. E. Davidson (No. 336) and in the Province of Bocas del Toro in 1941 by H. von Wedel (No. 2120).

63. *Passiflora panamensis* Killip

This species was known at the time of my monograph only from the type, which came from southern Darién, Panama. The species has been found in the adjacent coastal part of Colombia, a recent record being:

COLOMBIA: El Chocó: Bahía Solano, dense forest along the Quebrada Jellita, alt. 50-100 m., Feb. 22, 1939, *Killip & García* 33482.

69. *Passiflora bauhinifolia* H.B.K.

P. andreana Mast. was treated as a synonym of *P. bauhinifolia* in my monograph. Specimens collected by García-Barriga and Balls in southwestern Colombia in 1939 show that these two species are unquestionably distinct. In *P. andreana* the inside of the sepals and the petals are purple, reddish purple, or deep violet; in *P. bauhinifolia* these parts are white. The outer corona filaments are slenderer in *P. andreana*.

Of the specimens listed in my monograph under *P. bauhinifolia*, I have rechecked only those in the U.S. National Herbarium; on this basis, *P. bauhinifolia* is common in Ecuador, and *P. andreana* is known only from Colombia. *P. bauhinifolia* is represented in the U.S. National Herbarium by the following:

COLOMBIA: El Valle: Quebrada de la Palma, Río Bugalagrande Valley, *Cuatrecasas* 20935. Putumayo: Laguna de la Cocha, Páramo El Tabano, *García-Barriga* 7785A.

ECUADOR: Without locality, *Mille*. Imbabura: Otovalo, *Mexía* 7645. Pichincha: Quito, *Humboldt & Bonpland* (photo of type); *Mille* 222, s.n. in 1918. Verde Cruz, *Firmín* 310. Guápulo, *Stevens* 258. Tungurahua: Baños, *Lehmann*, 675, 8020.

PERU: Cajamarca: Peña Rota, toward Cochabamba 2,800 m., *Ochoa* 1565.

This last record is apparently the second of this species in Peru.

69a. *Passiflora andreana* Mast. Journ. Linn. Soc. 20:37. 1883.

Additional collections are:

COLOMBIA: Nariño: Las Lajas, near Ipiates, *André* 3478 (photo of type); *García-Barriga* 7757A; *Balls* 7360. Jenoy, 5 km. northwest of Pasto, alt. 2,460 m., *Ewan* 15899 (USNA). Between Pasto and Anganoy, *Schultes & Villarreal* 7417.

100. *Passiflora micropetala* Mast.

In the monograph I stated that this species was one of the few maintained as valid by Masters in the *Flora Brasiliensis* that I knew only from description. After studying a specimen subsequently collected along the Río Putumayo, I have decided that it and a specimen from the Comisaría of Caquetá, *Pérez-Arbeláez* 669, which was cited by me as *P. dawei*, both represent *P. micropetala*. The type locality of this species as given by Masters is: "In regione fluvii Japurá, prov. do Alto Amazonas." The Río Japurá is identical with the Río Caquetá, and the Putumayo is in the same general area. On his trip to this river, Martius is known to have collected in present-day Colombia, and the type may thus have come from this country.

The Pérez collection is sterile, and the more recent one is in fruit only. Both resemble *P. biflora* in leaf shape, but the coronal structure is different according to Masters' description. *P. micropetala* therefore appears to be known from the following locations:

COLOMBIA: Caquetá: Florencia, alt. 420 m., *Pérez-Arbeláez* 669 (COL, US).

Putumayo: Selva higrófila del Río Putumayo en Puerto Ospina, alt. 230 m., *Cuatrecasas* 10776 (COL, US).

BRAZIL OR COLOMBIA: Río Japurá (R. Caquetá), *Martius* (M, type).

111. *Passiflora adenopoda* DC.

A recent collection of this species by Dugand and Jaramillo (No. 3965) has far more deeply cleft bracts than heretofore observed. They are deeply palmate-trisect, and the segments are repeatedly cleft. The largest bract is 2 cm. wide. This unusual variant was collected in the Department of Cundinamarca, Colombia, at Estación San Bernardo, between Sasaima and Albán, at an altitude of 1,700–1,800 m.

132. *Passiflora bicuspidata* (Karst.) Mast.

This species, known hitherto only from the Eastern Cordillera of Colombia, was recently collected by Steyermark across the border in Venezuela. His detailed notes on the color of the flowers are worth reproducing as earlier collectors have described the flower color in only general terms.

"Calyx rose-lavender, the lobes with more lavender, the tube with more brick-color; coronal filaments golden; calyx tube below the coronal filaments within dull pale greenish-yellow; filaments purple; anthers buff; styles purplish; petals purplish-rose."

The collection was made at:

VENEZUELA: Táchira: Swampy woods between Paramito and Quebrada de Palmar, at base of Páramo de Tamá, 7 km. above Villapáez, alt. 2,500 m., *Steyermark* 57240 (F, US).

135. *Passiflora sanguinolenta* Mast.

In the monograph I followed Masters in placing this Ecuadoran species in the subgenus *Psilanthus*, but I observed that it appeared more closely related to *P. rubra*, of the small section *Xerogona* of the subgenus *Plectostemma*, than to the three known species of *Psilanthus*.

Later, there were submitted to me, through the courtesy of Harold N. Moldenke, then of the New York Botanical Garden, a fine series of specimens of *P. sanguinolenta* and *P. rubra* collected by Reinaldo Espinosa in the Province of Loja. One of *P. sanguinolenta*, No. 806, is in fruit, apparently the first time that fruit of this species has been collected. The transverse ridges of the seeds are rugose, not smooth as in *Xerogona*, and I believe that the species is best left in *Psilanthus*, even though in vegetative parts (especially in the absence of any bracts) and shape of the fruit it very closely resembles *P. rubra*.

To the collections cited in the monograph there may now be added the following, all from the Province of Loja and deposited in the U.S. National Herbarium:

ECUADOR: Catacocha, alt. 2,050 m., *Espinosa* 617. Pucala, north of Loja, alt. 2,300 m., *Espinosa* 621. Between San Pedro and Chinchas, about 55 km. west of Loja, alt. 1,200 m., *Espinosa* 1314. Aguahedionda, north of Loja, alt. 2,150 m., *Espinosa* 806. Desert country between Vilcabamba and Cachiyaecu, alt. 1,600-2,100 m., *Steyermark* 54397.

137. *Passiflora bracteosa* Planch. & Linden

Tacsonia infundibularis Mast.

Both these species were based upon *Funck and Schlim's* 1381. The type locality of *P. bracteosa* was correctly given as La Baja, Colombia; that of *Tacsonia infundibularis* was incorrectly recorded as "Venezuela." However, this species has recently been collected by Steyermark (No. 57277, at F) in the State of Táchira, Venezuela, at the base of the Páramo de Tamá, at an altitude of 2,285-2,430 m.

147. *Passiflora adulterina* L.f.

Although this species is fairly common in the vicinity of Bogotá, fruiting material was not found, apparently, until 1939. *Cuatrecasas* 5136, collected between El Delirio and Guadalupe (eastern slope of the Cordillera Oriental, between 2,900 and 3,220 m. altitude), bears mature fruit, which may be described as follows:

Fruit broadly ovoid, 7.5 cm. long, about 4.5 cm. in diameter, apparently reddish brown, mottled with greenish yellow; seeds obovate, about 9 mm. long, and 4.5 mm. wide, reticulate, dark brown, lustrous.

148a. *Passiflora cuatrecasatii* Killip, sp. nov.

PLATE 2

Suffrutex elata scandens, caule primum lanato denique glabrato; stipulae subulatae; folia coriacea ovato-lanceolata vel oblongo-lanceolata plus minusve serrata basi rotundata vel subcordata apice acuta vel subobtusa subtus lanata, petiolo sub apice 2-3 glandulis; bracteae liberae ovato-oblongae vel anguste oblongae acutae serrulatae; calycis tubus cylindricus glaber, sepalis tubo valde brevioribus oblongis obtusis, petalis sepala subaequalibus; corona annularis undulata; operculum deflexum denticulatum leviter recurvatum; ovarium tomentosum.

Vine; stem subangular, lanate when young, the indument at length evanescent; stipules subulate, up to 1.1 cm. long, glabrous, purplish black below middle, the upper part spongiose-thickened, light yellowish brown, coriaceous, acuminate; petioles up to 2 cm. long, bearing 2 or 3 glands near apex; leaves unlobed, ovate-lanceolate or oblongo-lanceolate, 6-11 cm. long, 3-6.5 cm. wide, acute or subobtuse, rounded or cordulate at base, serrate or serrulate, penninerved (principal lateral nerves about 9 to a side), coriaceous, dark green, lustrous, and glabrous above, densely lanate beneath, except sometimes on the nerves and veins; peduncles 7-10 cm. long, slender, evanescently lanate, articulate about 1 cm. below the apex; bracts distinct to the base, ovate-oblong to narrowly oblong, 3-4 cm. long, 0.8-3 cm. wide, acute, sessile, finely serrulate; calyx tube cylindric, 8-10 cm. long, 1-1.5 cm. wide, greenish at base, red or purplish above, glabrous; sepals oblong, 3.5-4.5 cm. long, 1-1.5 cm. wide, obtuse, dorsally awned just below the apex (awn about 1.5 mm. long), pinkish purple; petals subequal to the sepals; corona a single indulate ridge at the apex of the tube; operculum borne near the base of the tube, 4-7 mm. long, dependent, the margin slightly recurved and minutely denticulate; ovary ovoid, densely tomentose.

Type in the U.S. National Herbarium, No. 1796435, collected on the eastern slope of the Páramo de Guasca, Cordillera Oriental, Department of Cundinamarca, Colombia, at an altitude of 3,200-3,300 m. on June 2, 1940, by J. Cuatrecasas (No. 9479). Also represented by *J. Cuatrecasas* 13538 from the same locality, and by *Uribe* 1061, from La Rusia, northwest of Duitama, Department of Boyacá, at an altitude of 2,700 m.

The proposed species probably should be placed nearest *P. lanata* in the arrangement adopted in my monograph, though it also has affinities with *P. rugosa* and *P. leptomischa*. From *P. lanata* it differs in having a scantier indument on the vegetative parts, a pubescent ovary, and generally longer peduncles. In *P. rugosa* the bracts are coalesced partway and the calyx tube is much shorter. *P. leptomischa* is a species with dimorphic foliage and very long (15-25 cm.) peduncles.

148b. *Passiflora rigidifolia* Killip sp. nov.

PLATE 3

Caulis scandens angulatus sursum albopilosus basin versus glabratus; stipulae anguste lineares glanduloso-serrulatae subrevolutae; folia coriacea lanceolata integra basi rotundata apice acuta praeter costam supra pilosulam glabra, petiolo albo-piloso 2-3 glandulis parte media; bracteae liberae lanceolatae integrae; calycis tubus cylindricus glaber sepalis tubo brevioribus oblongis obtusis, petalis sepalis similibus; corona annularis dentata; operculum deflexum recurvatum minuteque denticulatum; ovarium tomentosum.

Stem subangular, white-pilose toward the apex, becoming glabrous below; stipules narrowly linear about 1 cm. long and 1 mm. wide, acuminate, glandular-serrulate, subrevolute, coriaceous; petioles up to 7 mm. long, 2- or 3-glandular near the middle, white-pilose; leaves lanceolate, 4-6.5 cm. long, 1-1.8 cm. wide, acute at apex, rounded at base, entire, revolute (?), penninerved (midnerve impressed above, the lateral nerves and veins somewhat elevated on both surfaces), pilosulous on the midnerve above, otherwise glabrous, coriaceous, glaucescent beneath; peduncles solitary in the axils, 2-2.5 cm. long, glabrous or sparingly pilose; bracts borne about 5 mm. below the apex of the peduncle, free to base, lanceolate, about 2 cm. long and 8 mm. wide, acuminate, sessile, entire, pilose; flowers pale rose; calyx tube cylindric, 6.5-7 cm. long, 8-9 mm. in diameter, slightly enlarged at base, glabrous; sepals oblong, about 2.5 cm. long, and 1 cm. wide, obtuse, dorsally aristate just below apex, the awn 2 mm. long; petals similar and subequal to the sepals, about 8 mm. wide; corona a dark ring at the throat of the tube, tuberculate; operculum borne close to base of tube, 4 mm. long, dependent, the margin recurved and minutely denticulate; ovary ovoid, densely tomentulose.

Type in the Herbarium of the Royal Botanic Gardens, Kew, collected in Colombia at an altitude of about 3,900 m., 1894-1896, by D. Burke (No. 184).

This species is nearest to *P. cuatrecasasi* but differs in its much narrower leaves, shorter peduncles, and slenderer calyx tube.

Unfortunately, the locality at which the type was collected is uncertain. The label reads "Flora of Colombia. Locality: Conig, altitude 13,000 ft., Comm. Messrs. J. Veitch, 1897." The word "Conig" is not a Spanish one, and I have been unable to find in any gazeteer a Colombian name at all similar to it. Conejo, in Antioquia, on the railroad from Puerto Berrío to Medellín, suggests itself, but there is no altitude of 13,000 ft. attainable from there. In Peru there is a "Coñec," but it is not known that Burke collected in that country.

Accompanying this specimen is a letter dated April 4, 1902, from James Veitch & Sons to Hemsley, in response to a request for information about Burke's collections. Nos. 146, 154, and 167 are listed

without localities, but the Veitch letter observes that the preceding numbers were collected in Antioquia. Nos. 184 and 185 follow both from "Conig," number 185 being given as "*Berberis* sp (*Goudoti* ?), 11,000 ft." *Berberis goudoti* is known only from the eastern Cordillera of Colombia.

149. *Passiflora truxillensis* Planch. & Linden.

This rare species hitherto known only from two collections from the State of Trujillo, Venezuela, was recently collected in the neighboring State of Mérida by Steyermark, from whose notes the following more complete description of the flowers may be presented:

Bracts pale green with pale rose line down the center; calyx tube pale green at very base, dull rose without, a greenish part in the middle; sepals deep rose at margin, lavender in the middle; petals rose-colored throughout; stamen-filaments rose-orchid; ovary green; styles rose-lavender above, whitish below.

The complete collection data are:

VENEZUELA: Mérida: Rich forest between Mesa del Trapiche and El Molino, alt. 2,530–2,590 m., Steyermark 56503 (F, US).

154a. *Passiflora boyacana* Killip sp. nov.

PLATE 4

Herba scandens, caule lanato denique glabrescenti; stipulae lineari-subulatae; folia coriacea profunde trilobata basi subtruncata vel subcordata lobis lineari-lanceolatis subacutis mucronulatis integris, subtus dense rufo-lanata, petiolo eglanduloso lanato; bracteae liberae integrae extus lanatae; calycis tubus cylindricus glaber, sepalis petalisque tubo dimidio brevioribus elliptico-oblongis obtusis mucronulatis; corona brevem annulum minute tuberculatum reducta; operculum deflexum recurvatum denticulatum; ovarium glabrum.

Herbaceous vine; stem stout, subterete, about 3.5 mm. in diameter, lanate, becoming glabrous; stipules linear-subulate, about 1.2 cm. long; petioles 1–1.5 cm. long, glandless, lanate in lines; leaf-blades lobed about three-quarters their length, 4–8 cm. along midnerve, 3.5–6.5 cm. along lateral nerves, 3–9 cm. between apices of lateral lobes, (lobes 1–1.5 cm. wide, narrowly lanceolate or the middle one sometimes elliptic-lanceolate, subacute, mucronulate), subtruncate or cordulate at the base, entire, coriaceous, essentially glabrous above with the nerves slightly impressed, densely rufo-lanate beneath; peduncles solitary, about 4 cm. long, pubescent like the petioles; bracts borne at base of flower, 2–2.3 cm. long, 8–10 mm. wide, free to the base, sessile, entire, deciduous-lanate without, glabrous within; flowers young; calyx tube cylindric, 4 cm. long, glabrous; sepals and petals equal, about 2 cm. long, obtuse, the sepals 7 mm. wide, mucronulate, the petals 1 cm. wide; corona reduced to a low, minutely tuber-

culate ridge; operculum borne at base of tube, dependent, about 4 mm. long, the margin recurved, denticulate; ovary ellipsoidal, glabrous.

Type in the U.S. National Herbarium, No. 1796049, collected in páramo thickets, above Puente de Boyacá, Department of Boyacá, Colombia, at an altitude of 2,800 m. on Feb. 24, 1940, by E. Pérez-Arbeláez & J. Cuatrecasas (No. 8083).

This species, belonging to the subgenus *Tacsonia*, keys out to species 154-157 of my monograph of the American Passifloraceae. The narrow, entire leaf lobes are quite unlike those of *P. ampullacea*. In depth of lobation the leaves are rather suggestive of *P. trianae* and *P. purdiei*, which are essentially glabrous plants.

155a. *Passiflora raimondii* Killip, sp. nov.

PLATE 5

Herba scandens, ubique glabra; stipulae setaceae; folia membranacea trilobata, lobis oblongis vel ovato-oblongis, obtusis, denticulatis, petiolis eglandulosis; bracteae liberae, lanceolatae, acutae; calycis tubus cylindricus, sepalis tubo brevioribus, lineari-oblongis, petalis anguste linearibus; corona annuliformis, crenulata; operculum deflexum.

Herbaceous vine, glabrous throughout; stem quadrangular, longitudinally ridged, the tendrils very slender; stipules setaceous, about 4 mm. long; petioles slender, 1-3 cm. long, glandless; leaves 3-5 cm. long, 4.5-8 cm. wide, 3-lobed to below the middle (lobes oblong or ovate-oblong, up to 3 cm. wide, rounded and sometimes slightly emarginate at apex, denticulate), cordate at base, membranous, biglandular at base; peduncles solitary, slender, about 5 cm. long; bracts lanceolate, 1-1.2 cm. long, 4-5 mm. wide at base, acute at apex, rounded at base, sessile, minutely denticulate, distinct to base, borne at base of flower; calyx tube cylindric, 3-3.5 cm. long, 7-8 mm. in diameter, narrowed at base; sepals linear-oblong, 2 cm. long, 3-3.5 mm. wide, obtuse, slightly carinate, the keel terminating in a filiform awn 1 mm. long; petals narrowly linear, 1.5 cm. long, 1.5 mm. wide, subacute; corona a low ridge, crenulate; operculum borne about 5 mm. above base of tube, dependent, 4 mm. long, minutely denticulate; gynophore very slender, about 5 cm. long; ovary fusiform.

Type in the Herbarium of the Universidad Nacional Mayor de San Marcos, Lima, collected at Chorrillos, Department of Cajamarca, Peru, at an altitude of 2,200 m. on June 8, 1875, by A. Raimondi (No. 7807). Represented also by *A. Raimondi* 8241, collected at Cascas, Province of Contumazá, in the same Department.

This species is most nearly related to *P. gracilens*, which is rather common in Peru and extends from Huánuco southward. The new species differs in its larger leaves with much broader lobes, its longer peduncles and larger flowers, and its lanceolate, not ovate, bracts.

The Raimondi specimens were submitted to Harms, who suggested that they probably belonged to our undescribed species.

159a. *Passiflora zamorana* Killip sp. nov.

PLATE 6

Herba scandens folia supra et flores excepti dense griseo-vel brunneo-tomentosa; stipulae late ovato-reniformes semiamplexicaules plus minusve dentatae vel incisae; folia membranacea usque medium 3-lobata basi subcordata lobis oblongo-lanceolatis argute acuminatis serratis supra pilosula deinde glabrata, petiolo 3-4 glandulis inconspicuis praedito; bractea liberae ovato-lanceolatae serrulatae; calycis tubus cylindricus glaber, sepalis petalisque ovato-oblongis obtusis tubo paulo brevioribus; corona circulum minorum tuberculorum reducta; operculum deflexum recurvatum; ovarium brunneosericeum.

Herbaceous vine, densely brownish or grayish tomentose throughout except the upper side of the leaves and the flowers; stem terete; stipules broadly ovate-reniform, about 1 cm. long and 1 cm. wide at the base, scarcely oblique, closely semiamplexicaul, irregularly dentate or lacinate at the apex, the divisions aristate; petioles 2-2.5 cm. long, bearing 3 or 4 obscure glands; leaves 6-9 cm. long, 8-9 cm. wide, 3-lobed about to the middle (lobes oblong-lanceolate, 2.5-3.5 cm. wide, sharply acuminate, the lateral somewhat ascending), conspicuously serrate, subcordate, membranous, the upper surface sparingly pilosulous glabrate; peduncles 12-15 cm. long, rather stout; bracts free to base, ovate-lanceolate, about 3 cm. long, and 1.7 cm. wide, acuminate, serrulate, sessile, borne at the apex of the peduncle; calyx tube cylindric, 7-7.5 cm. long, 1-1.3 cm. wide when pressed flat, slightly enlarged at base, otherwise of uniform diameter, glabrous; sepals ovate-oblong, 6-6.5 cm. long, about 2.5 cm. wide, obtuse, dorsally awned just below the apex (awn very slender, about 5 mm. long), deep salmon-rose, paler within, the midnerve with a pale green center; petals similar and subequal to the sepals; corona a single series of minute tubercles; operculum borne near the base of the tube, about 3 mm. long, dependent, the margin recurved; ovary ovoid, densely light-brown-sericeous.

Type in the Herbarium of the Chicago Natural History Museum, No. 1204733, collected in the vicinity of Achupallas, Province of Santiago-Zamora, Ecuador, at an altitude of 2,500 m. in a forest along a stream on October 8, 1943, by Julian A. Steyermark (No. 54493). Duplicate at US.

In the monograph the new species keys out to *P. jamesonii* because of the large stipules; however, these are far more deeply fringed in *P. jamesonii*. Moreover, *P. jamesonii* is glabrous throughout and has shorter peduncles and deeply fringed bracts. In leaf shape, indument, and length of the peduncles, the new species suggests *P. ampullacea*.

162. *Passiflora matthewsii* (Mast.) Killip

Masters placed this species among the tacsonias with united bracts, lobed leaves, and narrowly linear stipules, though in the description of the species, which was given at some length in the key, he did not specifically mention the stipules. A specimen recently collected at the type locality, Chachapoyas, Peru, by Metcalf (Goodspeed Expedition No. 30784) has foliaceous, semiovate stipules which are deeply pinnatisect into filiform segments, the body of the stipules sometimes being reduced to a mere band surrounded by the filiform segments. Otherwise the specimen agrees perfectly with a photograph that I took of the type at the Kew Herbarium and with the amplified description given in my monograph. I believe that both Masters and I mistook either the filiform segments or abortive tendrils for stipules, that the stipules of *P. matthewsii* had mostly fallen off the type material at Kew and the British Museum, and that therefore *P. matthewsii* should be placed next to *P. roseorum* (species 164).

A. H. G. Alston has kindly examined for me the Matthews specimen at the British Museum, and writes: "The stipules appear to have fallen off our specimen, but there are sometimes young tendrils which could easily have been taken for stipules. . . . On the young parts there are, however, some filiform hairy segments, which could easily be the segments of a laciniate stipule."

166a. *Passiflora loxensis* Killip & Cuatr., sp. nov.

PLATE 7

Suffrutex scandens, caule angulato glabro; stipulae coriaceae ovatae fimbriato-dentatae; folia coriacea glabra trilobata lobis triangulari-ovatis acutis serratis, subtus reticulo venorum valde elevato congesteque incrassato; bracteae ad medium connatae; calycis tubus cylindricus glaber, sepalis petalisque oblongis tubum subaequilongis; corona tuberculata; operculum deflexum paulo laciniatum recurvatum; ovarium glabrum.

Vine; stem acute-angular, glabrous, lustrous; stipules coriaceous, glabrous, ovate or lance-ovate, acuminate, oblique and cordate at base, amplexicaul, fimbriate-dentate, 10-20 mm. long, 4-8 mm. broad; petioles 1-2 cm. long, bearing 3-4 sessile or short-stipitate glands about 1 mm. thick; leaf-blades 4-6 cm. long, 5.5-9 cm. broad, deeply 3-lobed (lobes triangular-ovate, acute, 2-3.5 cm. long, 1.5-2.8 cm. wide, the lateral ones subascending), truncate or subrounded at base, callous-serrate, coriaceous, glabrous, above green, rugulose, the nerves impressed, the minute reticulate veins prominulous, beneath paler, the 3 primary nerves thick and prominent, the secondary nerves prominent, the veins thick forming an incrassate reticulum separating very narrow, deep, irregular alveolae; peduncles 2.5-4.5 cm. long, subangular, stout; bracts subcoriaceous, 5-6 cm. long, connate to

about the middle (the free part oblong, abruptly acuminate, entire, 1.4-2 cm. wide), outside glabrous, slightly nervate and reticulate, inside more or less lanuginous or pilose and conspicuously venose; flowers lilac-blue; calyx tube cylindrical, 7-8 cm. long, about 1 cm. broad when pressed, of uniform diameter, glabrous; sepals oblong, obtuse, aristulate below the apex, 6.5-8 cm. long, 1.8-2.6 cm. wide; petals subequal to the sepals; corona tuberculate; operculum dependent, about 7 mm. long, the margin recurved, more or less fimbriate; gynophore finely spreading-pubescent; ovary fusiform, glabrous; immature fruit obovoid-oblong, about 6.5 cm. long, 2 cm. broad; seeds oblong-ovate, 7-8×4-5 mm., alveolate.

Type in the U.S. National Herbarium, No. 1909202, collected at Horta-Naque, Province of Loja, Ecuador, at an altitude of 3,200 m., on Nov. 8, 1946, by Reinaldo Espinosa (No. E965). Supplementary sheet, US No. 1909586.

P. loxensis belongs to the subgenus *Tacsonia* and is closely related to *P. cumbalensis* (Karst.) Harms. It differs in the lacinate-dentate, coriaceous stipules, in the more coriaceous leaves and bracts, and especially in the structure of the lower surface of the leaves. The thick veins on the lower surface form a very close reticulum that leaves very thin but deep and irregular pits between the turgid network.

170. *Passiflora psilantha* (Sodirol) Killip

This Ecuadorean species has been found in cultivation near Sonsón, Antioquia, Colombia, by Gutiérrez & Barkley (No. 18C294). The specimen is deposited in the Herbarium of the Facultad de Agronomía, Medellín, Colombia.

173. *Passiflora mixta* L.f.

On page 297 of my monograph, variations of pubescence in this wide-spreading species are noted thus:

(1) Leaves, calyx tube, and ovary glabrous.

(2) Leaves glabrous, calyx tube and ovary pubescent.

(3) Under surface of leaves, calyx tube, and ovary pubescent.

No formal varietal names were assigned to these variants though a fourth, *P. mixta* var. *eriantha*, was treated as a variety.

Two specimens received subsequent to the publication of my monograph exhibit other combinations in the occurrence of indument, and are worth noting:

(4) Under surface of leaves pubescent, calyx tube glabrous, ovary pubescent: Ecuador: Cañar: Tipococha, altitude 3,200 m., *Penland & Summers* 1006 (US).

(5) Leaves and calyx tube glabrous, ovary pubescent: Bolivia: La Paz: Charazani, Province of Muñecas, altitude 2,700 m., *Cárdenas* 3886 (US).

177. *Passiflora antioquiensis* Karst.

In the description given of this species in my monograph, notes on the peduncle were unfortunately omitted. It is worthwhile also to amend the description in certain details in view of recent collections thus:

Leaves unlobed, up to 18 cm. long and 8.5 cm. wide, asymmetrically 2-lobed or 3-lobed to within 2 cm. of the base; peduncles very slender, almost filiform, 17-60 cm. long, pendulous; flowers up to 14 cm. wide when expanded.

Additional specimens examined are:

COLOMBIA: Antioquia: Yarumal, *Daniel* 1916 (US). Cauca: El Tambo, alt. 2,500 m., *von Sneidern* 1442 (S,US).

180a. *Passiflora macropoda* Killip sp. nov.

PLATE 8

Caulis scandens robustus rufo-subvelutinus; stipulae cordato-ovatae acutae inciso-fimbriatae glabrae; folia subcoriacea pilosula ad medium trilobata basi subcordata lobis ovatis acutis serratis; bractee liberae ovato-lanceolatae subcordatae inciso-fimbriatae; calycis tubus tubuloso-campanulatus, sepalis anguste lanceolatis pilosulis apice longe mucronatis quam tubo duplo longioribus, petalis leviter brevioribus; corona 3 seriebus filamentis filiformibus et interiore brevi membrana horizontali subcrenata; operculum deflexum recurvum; gynophorum tener; ovarium velutinum.

Vine; stem terete, stout, about 5 mm. in diameter, rufo-velutinous; stipules cordate-ovate, 2-3 cm. long, 1.5-2 cm. wide, acute, strongly oblique at the base, laciniate-fimbriate, membranous, glabrous; petioles stout, 1.5-3 cm. long, bearing 2 or 3 short stipitate glands at the apex and 1 or 2 just below the apex, these partially concealed in a dense tomentum; leaf-blades 3-lobed about to middle, 10-12 cm. along the midnerve and the lateral nerves, 16-18 cm. between the apices of the lateral lobes (lobes about 5 cm. wide, aristate), cordulate at base, serrulate, subcoriaceous, minutely pilosulous on the nerves above and on the principal nerves beneath cano-puberulent or rufo-puberulent on the secondary nerves and the veins beneath; peduncles solitary, stout, 12-14 cm. long, densely rufo-velutinous; bracts free to base, ovate-lanceolate, 4-5 cm. long, about 2 cm. wide, cordulate, laciniate-fimbriate, the teeth toward the base the largest; calyx tube slenderly campanulate, about 2 cm. long, and 1.3 cm. in diameter; sepals narrowly lanceolate, 4 cm. long, 1 cm. wide, white within, dorsally keeled toward the apex, the keel terminating in a filiform awn about 8 mm. long; petals narrowly lanceolate, 3.5-4 cm. long, white; corona in 4 series, the outer 3 ranks irregular, filamentose, the filaments filiform, about 1.5 cm. long, close to these ranks a short, thick, horizontal, subcrenulate membrane; operculum dependent,

about 8 mm. long, the margin recurved, short filamentose; gynophore slender, about 3.5 cm. long; ovary ovoid, white-velutinous.

Type in the U.S. National Herbarium, No. 1803911, collected near Unduavi, Department of La Paz, Province of Nor Yungas, Bolivia, at an altitude of 3,000 m., in forest along roadside, on Apr. 15, 1939, by W. J. Eyerdam (Goodspeed Expedition No. 25379). Duplicates at University of California and Chicago Natural History Museum.

This species belongs to the subgenus *Granadillastrum* and because of its laciniate-fimbriate bracts and general flower structure is evidently nearest *P. weberbaueri* and *P. trisecta*. Both of these have trifoliate leaves. The indument and general shape of the foliage are suggestive of *P. peduncularis*.

189. *Passiflora racemosa* Brot.

In describing the bracts of this species I said in the monograph: "bracts setaceous (?), soon deciduous." This statement is in error. In *Chase* 10125, which was cited, bracts are present, and Masters' plate in the *Flora Brasiliensis* shows a bract. They are ovate, about 1 cm. long and 8 mm. wide, tapering slightly at the base, thin-membranous, and pink, and are borne close to the base of the flower.

P. G. Greenway has recently sent me for study a superb lot of passionflowers from the Herbarium of the East African Agricultural Research Station, Amani, Tanganyika, nearly all of which are from plants grown at the Station and are of New World origin. Among these, No. 5942, collected by Greenway, is *P. racemosa*. The flowers are borne singly in the axils of fully developed leaves and are not in a raceme or on long branches with much reduced leaves. This plant may be of hybrid origin, or perhaps in a natural state the flowers may sometimes be solitary.

200. *Passiflora seemannii* Griseb.

This species has a rather unusual range of distribution. At the time that my monograph was prepared, the species was known in its native state by several collections from Panama and from scattered localities in Colombia. The following additional collections have subsequently been received at the U.S. National Herbarium:

COLOMBIA: Cundinamarca: San Francisco, alt. 1,550–1,580 m., *Garcla-Barriga* 11051. El Meta: Villavicencio, alt. about 500 m., *Killip* 34445, 35692; *Cuatrecasas* 4673.

VENEZUELA: Amazonas: Yavita, *L. Williams* 14000.

209. *Passiflora capparidifolia* Killip

Material from British Guiana and the Rio Branco of Brazil was cited as this species in my monograph. The species is now represented in the U.S. National Herbarium by the following Venezuelan collections:

Bolívar: Between Río Torono and Salto de Auraima, edge of forest along Río Paragua, alt. 275 m., Killip 37539. Selvas de galería del Río Uari, Gran Sabana, Tamayo 3154.

The first of these collections was in fine flower and the second one bore young fruit. The description in the monograph may be amplified thus:

Bracts distinct to the base, broadly ovate, up to 5 cm. long and 3 cm. wide; sepals greenish white without, red-brown within; petals deep pinkish red; outermost corona filaments about 1.2 cm. long, banded with blue and white in upper part, red and white in lower part, the second series three times longer, blue and white in the upper two-thirds, red and white in the lower third; young fruit ovoid, about twice as long as wide, finely pilose, obovate, about 5 mm. long and 3.5 mm. wide, reticulate.

210. *Passiflora popenovii* Killip

At the time that my monograph was prepared the only specimens of this species available to me were from Ecuador. The species was also collected in 1938 at El Tambo, Department of Cauca, Colombia, alt. 1,700 m. by K. von Sneidern (No. 1444), and was deposited in the Riksmuseet, Stockholm, and in the U.S. National Herbarium.

211a. *Passiflora brevifila* Killip, sp. nov.

PLATE 9

Frutex scandens omnino glaber, caule subquinqueangulato; stipulae anguste lineares subfalcatae; folia subcoriacea integra lanceolata vel oblongo-lanceolata acuminata basi rotundata; bracteae liberae lanceolatae minute cuspidatae integrae basi subtruncatae, petiolo prope apicem 4-6 glanduloso; calycis tubus campanulatus, sepalis petalisque similibus oblongis obtusis; corona filamentis uniseriatis liguliformibus ad apicem leviter dilatatis; operculum fimbriatum filamentis rigidulis ad basim paulo incrassatis.

Woody vine, glabrous throughout; stem subquincangular; stipules narrowly linear, 5-6 mm. long, about 0.8 mm. wide, subfalcate, coriaceous; petioles 1-2 cm. long, bearing 4-6 minute glands near the apex, the glands short-stipitate or nearly sessile; leaves lanceolate or oblong-lanceolate, 12-14 cm. long, 5-5.5 cm. wide, acuminate, rounded at base, entire, penninerved (principal lateral nerves 6 or 7 to a side, arcuate-ascending), conspicuously reticulate beneath, subcoriaceous, concolorous, lustrous beneath; peduncles solitary, 2.5-3 cm. long, bracts free to base, lanceolate, 5-7 cm. long, 2-3 cm. wide, acuminate, minutely cuspidate, subtruncate at base, entire, similar in texture to the leaves; flowers about 6.5 cm. wide; calyx tube campanulate; sepals and petals similar, oblong, about 2.5 cm. long and 9 mm. wide, obtuse, apparently white; corona filaments in a single series, narrowly liguliform, slightly thickened at apex, 1 cm. long; operculum

a fringe of rather stiff filaments about 3 mm. long, slightly thickened at base; limen a thick ridge close to the operculum; floor of calyx tube smooth; ovary ovoid, green; fruit globose, about 6 cm. in diameter, the exocarp brittle, orange; seeds obovate, strongly flattened, 9–10 mm. long, 5 mm. wide, coarsely reticulate, tridentate at the apex, the middle tooth the more prominent.

Type in the U.S. National Herbarium, No. 1643741, collected at Vara Blanca de Sarapiquí, north slope of Central Cordillera, between Poás and Barba Volcanoes, Costa Rica, at an altitude of 1,890 m., in February 1938, by A. F. Skutch (No. 3591).

This species belongs to the subgenus *Granadilla* series *Laurifoliae*, where it is the only one with a single-ranked corona. The other representative of the series in Central America, *P. ambigua*, not only has a 5-ranked corona but the ovary is densely brown-tomentose. Doubtless the closest relative is *P. nigradenia*, of Bolivia, in which the corona is 2-ranked and the ovary finely sericeous.

213a. *Passiflora killipiana* Cuatr., sp. nov.

PLATE 10

Planta breviter hirtella vel pubescens, pilis patulis rufescentibus; stipulae lineari-subulatae; folia tenuiter subcoriacea ovato-oblonga vel elliptico-oblonga basi subrotundata apice acute acuminata margine remote minuteque crenulata, penninervia, nervis utrinque ferrugineo-hirtellis vel tomentulosis, venulis reticulatis utrinque prominulis, petiolo brevi subapicem biglanduloso; bracteae liberae obovato-oblongae apice rotundatae sursum profunde dentatae; calycis tubus campanulatus, sepalis oblongis subapicem corniculatis, petalis brevioribus; corona filamentis 6–7 seriatis exterioribus liguliformibus valde longis, interioribus mediocribus, intermediis brevibus; operculum membranaceum profunde fimbriatum; ovarium velutino-tomentosum.

Plant hirtellous or pubescent nearly throughout, the hairs reddish, short, spreading; stem terete, slightly striate; stipules linear-subulate, 10–13 mm. long, 1 mm. wide, ferruginous-hirtellous, soon deciduous; petioles 7–11 mm. long, stout, ferrugineo-tomentellous, biglandular below the apex; blades 9–16 cm. long, 4.5–7.5 cm. broad, thin-subcoriaceous, ovate-oblong or elliptic-oblong, rounded or obtuse at base, acutely acuminate at apex, the margin subentire, minutely and distantly crenulate, hirtellous on the nerves above, more densely ferruginous-hirtellous on the nerves and the surface puberulous beneath, the midrib very prominent beneath, the secondary nerves 8–9 pairs, prominent, ascending, the smaller veins reticulate-prominulous on both sides; flowers 8–9 cm. wide, solitary, axillary; peduncles 3–4 cm. long, ferruginous-tomentellous, moderately thick; bracts thick obovate-oblong subrounded at apex, cuneate at base, coarsely and deeply toothed on the upper half, densely ferruginous-pubescent, 4.5–5.5 cm. long, 2–3 cm. broad; calyx tube cylindric-campanulate,

7–8 mm. high; sepals membranaceous, pubescent, 3.5–4 cm. long, 1–1.2 cm. wide, oblong, narrowed toward the obtuse apex, dorsally corniculate, the horn about 5 mm. long; petals smaller, thinner, oblong, about 3 cm. long, 0.5 cm. wide; corona filaments transversely colored-banded, in 6–7 series, the outermost narrowly ligulate, about 3 cm. long, 0.8 mm. wide, the innermost ligulate, about 6 mm. long, those of the intermediate series slender, 1.5–2.5 mm. long; operculum membranaceous, horizontal, the margin broadly recurved and deeply lacinate; limen cupular close to the gynophore; ovary ovoid-oblong, densely velutino-tomentose; gynophore about 1.5 cm. long.

Type in the U.S. National Herbarium No. 1952839, collected in the vicinity of La Pedrera near Río Caquetá, Comisaría del Caquetá, Colombia, in April 1944, by Richard Evans Schultes (No. 5875).

P. killipiana is closely related to *P. laurifolia* L., but differs from it and from the other known species of the section *Laurifolia* by the rufous or ferruginous, spreading pubescence or tomentum which covers several parts of the plant; *P. killipiana* differs also in the minute crenature of the leaves and in the thick, toothed bracts. The size of the different parts of the flowers and bracts and the relative length of the filaments of the several rows of the corona also distinguish this species from *P. laurifolia* and other related species.

The type of this species was examined by Killip in 1951 and classified as a new species in the section *Laurifolia*, but neither description nor name were given. The describer takes this opportunity to honor the man who did the largest and best work in *Passiflora* by naming the new species after him.

216. *Passiflora riparia* Mast.

Only material from Peru and Brazil was cited in my monograph. The following specimens from other countries are now in the U.S. National Herbarium:

BRITISH GUIANA: Western extremity of Kanuku Mountains, in drainage of Takutu River, alt. 500 m., *A. C. Smith* 3157.

COLOMBIA: Vaupes: Vicinity of Mitú, *Allen* 3340. Near Miraflores, alt. 300 m., *Gutiérrez & Schultes* 754 (Med). Putumayo: Mocoa, *Schultes & E. Smith* 2000.

Some specimens recently seen by me have the flowers borne singly in the leaf axils and not clustered on short, axillary branches as is typical of the species.

221a. *Passiflora pachyantha* Killip, *Lloydia* 2:198. 1939.

This species was based upon a specimen collected by A. C. Smith (No. 3620) on Mount Iramaikpang, in the northwestern portion of the Kanuku Mountains, British Guiana. The species belongs to a new section of the subgenus *Granadilla*, which comes between series 5, *Laurifoliae*, and series 6, *Serratifoliae*.

232. *Passiflora incarnata* L.

In the monograph I gave as the distribution of this species: "Virginia to Missouri, south to Florida and Texas; also in Bermuda. Introduced farther north in the United States" I also listed representative specimens of each state from which I had seen specimens.

Charles C. Deam wrote me that he found *P. incarnata* in 1899 on a hill near Wyandotte Cave, Crawford County, Indiana, and collected it on a bluff of the Ohio River, a half mile above Tell City, Perry County, Indiana. In his most useful *Flora of Indiana* (1940), he recorded it from two additional counties—all these localities being in the southern part of the State.

F. C. Gates likewise advised me that there are two specimens in the Kansas State College Herbarium from Labette County and Cherokee County, Kansas, collected in 1892 by A. S. Hitchcock.

No specimens were listed from these two States in my monograph. The distribution of this species should therefore be given as Virginia to southern Illinois and southeast Kansas, south to Florida and Texas.

245a. *Passiflora danielii* Killip sp. nov.

PLATE 11

Herba scandens, caule teneri glabro; folia subcoriacea ovato-lanceolata subabrupte acuminata integra basi leviter cordata subtus breviter adpresseque pilosa, petiolo glabro 2 paribus glandulis praedito; calycis tubus late campanulatus, sepalis lineari-lanceolatis, petalis sepalis similibus obtusis; corona filamentis circa 5-seriatis in duobus exterioribus seriebus subcapillaribus ceteris filiformibus minuteque capitellatis; operculum membranaceum erectum ad medium fimbriatum; ovarium glabrum.

Herbaceous vine; stem terete, slender, striate, glabrous; stipules semicordate, 1.5–2 cm. long, 6–9 cm. wide, abruptly cuspidate-acuminate, attached laterally slightly above the rounded base, the costa strongly eccentric; petioles 2.5–4 cm. long, glabrous, bearing slightly above the middle a pair of sessile, laterally compressed, concave glands about 1.5 mm. long and wide and another pair at the apex, the latter pair sometimes being borne instead at the margin of the blade close to the petiole; leaf-blades ovate-lanceolate, 10–12 cm. long, 6–6.5 cm. wide, subabruptly acuminate, slightly cordulate at the base, entire, 7-nerved, closely reticulate, subcoriaceous, concolorous, sublustrous and glabrous above, short-pilose on the nerves and veins beneath, the hairs divaricate, closely appressed to the surface of the blade; peduncles solitary, terete, 8–9 cm. long, slender, glabrous, articulate about 5 mm. below the apex; bracts unknown; calyx tube broadly campanulate, about 6 mm. long, 8–9 mm. in diameter at the throat, introrse at the base; sepals linear-lanceolate, 2–2.2 cm. long, about 8 mm. wide at the base, horned dorsally just below the apex,

the horn 1.2–1.3 cm. long; petals similar to the sepals about 1.3 cm. long and 5 mm. wide, obtuse; corona filaments apparently in about 5 series, the 2 outer filiform, almost capillary, 1.5–2 cm. long, those of the succeeding series filiform, about 3 mm. long, minutely capitate; operculum membranous, erect, about 5 mm. long, filamentose to the middle; nectar ring a low ridge; limen tubular, 4 mm. high, closely surrounding the base of the gynophore; ovary ovoid, glabrous.

Type in the U.S. National Herbarium, No. 1742750, collected at Cocorná, Department of Antioquia, Colombia, in August 1938, by Brother Daniel (No. 1536).

This species belongs to the series *Simplicifoliae* of the subgenus *Granadilla* (species 245–258 of my monograph). The unusual petiolar glands, which are more like the auricular appendages in *P. auriculata*, at once distinguish it from the other species of this series, nearly all of which have filiform glands. The slender peduncles, which are much slenderer than the stem, separate it from the four species of the first group within this series, and the long peduncles distinguish it from the other *Simplicifoliae*. The large, conspicuous horns are duplicated among species of this series only in *P. praeacuta*.

266. *Passiflora picturata* Ker

This rare species, whose distribution was recorded as "Surinam to Pará, Brazil" in my monograph, was also collected by the eminent Colombian botanist, Lorenzo Uribe Uribe, in eastern Colombia. The specimen in the U.S. National Herbarium bears the following data:

COLOMBIA: Meta: Acacías, near the Río Acacías, alt. 450 m., July 29, 1946, *Uribe Uribe* 1334. Flowers purple.

287. *Passiflora menispermifolia* H.B.K.

An extreme variant of this species has been collected in Bolivia by W. J. Eyerdam (Goodspeed Expedition 24718). It was found on the new road to Todos Santos, 130 km. northeast of Cochabamba, north side of Río San Mateo, near Chimore, Province of Chaparé, Department of Cochabamba, at an altitude of 700 m., hanging from bushes in a damp thicket. The flowers are noted as cerulean blue. Here also belongs *Buchtien* 4652, collected from Antahuacana, Department of Espíritu Santo, at an altitude of 750 m., which, in the monograph of Passifloraceae, I referred with some doubt to *P. rojasii* Hassl.

In this Bolivian variant, the leaves are scarcely lobed, are more acute, and are of a thinner texture.

309. *Passiflora pittieri* Mast.

This species has been known only from the type material collected at Santo Domingo, Golfo Dulce, Costa Rica. Additional collections in the U.S. National Herbarium may now be listed as follows:

PANAMA: Isla de Coiba, March 1938, *Méndez* 140. Forests around Pinogana, Darién, *Pittier* 6964.

COLOMBIA: Antioquia: Forest at Guapá, 53 km. south of Turbo, April 25, 1945, *Haught* 4600. Forest near Chigorodo, 40 km. south of Turbo, *Haught* 4695.

This record is one of several of species of the Costa Rican lowlands occurring in the Darién region of Panama and extending into northwestern Colombia.

Pittier 6964 consists of a few flowers only, and I did not discuss the collection in my monograph.

The leaves of the Méndez and Haught specimens are oblong or oblong-lanceolate, rather than prevailingly obovate as in the type, and are proportionately narrower. The largest one is 19 cm. long and 6.5 cm. wide.

309a. *Passiflora cardonae* Killip, *Brittonia* 3:172. 1939.

An additional collection was made at:

VENEZUELA: Bolívar: Cerro de Auyantepui, December 1937, *Cardona* 284 (VEN).

348. *Passiflora longiracemosa* Ducke

Known heretofore only from British Guiana and northern Brazil, this species has been collected in the forest at Salto de Pará, middle Caura River, State of Bolívar, Venezuela, by Llewelyn Williams (No. 11369). Though the leaves of this species are variable, I have seen none heretofore of the shape of those recently collected. They are broadly ovate-lanceolate, tapering gradually to a blunt tip, and are about 15 cm. long by 9 cm. wide.

349. *Passiflora securiclata* Mast.

The intensive exploration that has taken place in the Orinoco Basin in the last 10 years has led to the collection of much additional material of this species. I cited in my monograph only six specimens from Venezuela and none from Colombia. The numerous specimens now available show a greater variation in the shape and texture of the leaves. The description of the apex of the leaves as given in my monograph reads, "obtuse, usually emarginate, rarely bluntly short-acuminate." Masters, in the original account of the species, used the term "acute," though some of the leaves on the type specimen are rounded or almost truncate at the apex. Several recent specimens have leaves which are oblong-lanceolate or even lanceolate, tapering

to an acute apex. In many of them there is a dark band about the margin of the leaves. The texture varies from thick-coriaceous to almost membranous. No differences are discernible in the flowers, and it does not seem desirable to propose any segregates.

The additional material now in the U.S. National Herbarium consists of the following collections:

VENEZUELA: Anzoátegui: Río Chive, *Pittier* 15023. Bolívar: Medio Río Caura, *Williams* 11618, 11716. Río Paragua, *Cardona* 746; *Killip* 37534. Amazonas: Puerto Ayacucho, *Williams* 13125. San Antonio, Río Orinoco, *Williams* 15069. Tamatama, *Williams* 15245. Esmeralda, *Williams* 15310, 15515.

COLOMBIA: Arauca: Matabubosa, Río Meta, *Cuatrecasas* 4237. Boyacá: Río Guachiria, *Haught* 2663. Vichada: Curazao, Río Meta, *Cuatrecasas* 4134.

Two of these specimens, *Pittier* 15023 and *Williams* 15069, bear mature fruit, which, apparently not hitherto known, may be described thus:

Fruit ovoid, about 4.5 cm. long, and 3 cm. wide; the pericarp glabrous, brittle, yellowish; seeds obovate, 5–6 mm. long, 4–4.5 mm. wide, flattened, reticulate.

“Parcha” is given as the local name for several of the specimens.

352. *Passiflora pyrrhantha* Harms

Recent collections made are:

COLOMBIA: Meta: Monte de Machadero, Ocóa, near Villavicencio, *Hermann* 11120. Sierra de la Macarena, *Philipson, Idrobo, & Jaramillo* 2225.

PERU: Loreto: Gamitanacocha, Río Mazán, *J. M. Schuncke* 358.

353. *Passiflora spinosa* (Poepp. & Endl.) Mast.

Fruiting material of this species has been collected for apparently the first time by Cuatrecasas (No. 6846) at Mitú, Vaupés, Colombia. The fruit may be described thus:

Fruit ovoid, about 5 cm. long, and 2.5 cm. in diameter, subhexagonal, very minutely pilose, ochre; seeds broadly obovate, 7 mm. long, 5 mm. wide, strongly compressed, coarsely reticulate. The specimen is in the Herbario Nacional Colombiano.

3. *Mitostemma brevifilis* Gontsch.

An additional collection was made at Estacas, Campo Grande, Mato Grosso, Brazil, on Sept. 10, 1936, by Archer & Gehrt (No. 170). This species is known otherwise only from the type material collected on the Rio Pardo, Rio Grande do Sul (*Riedel* 535).

4. *Dilkea acuminata* Mast.

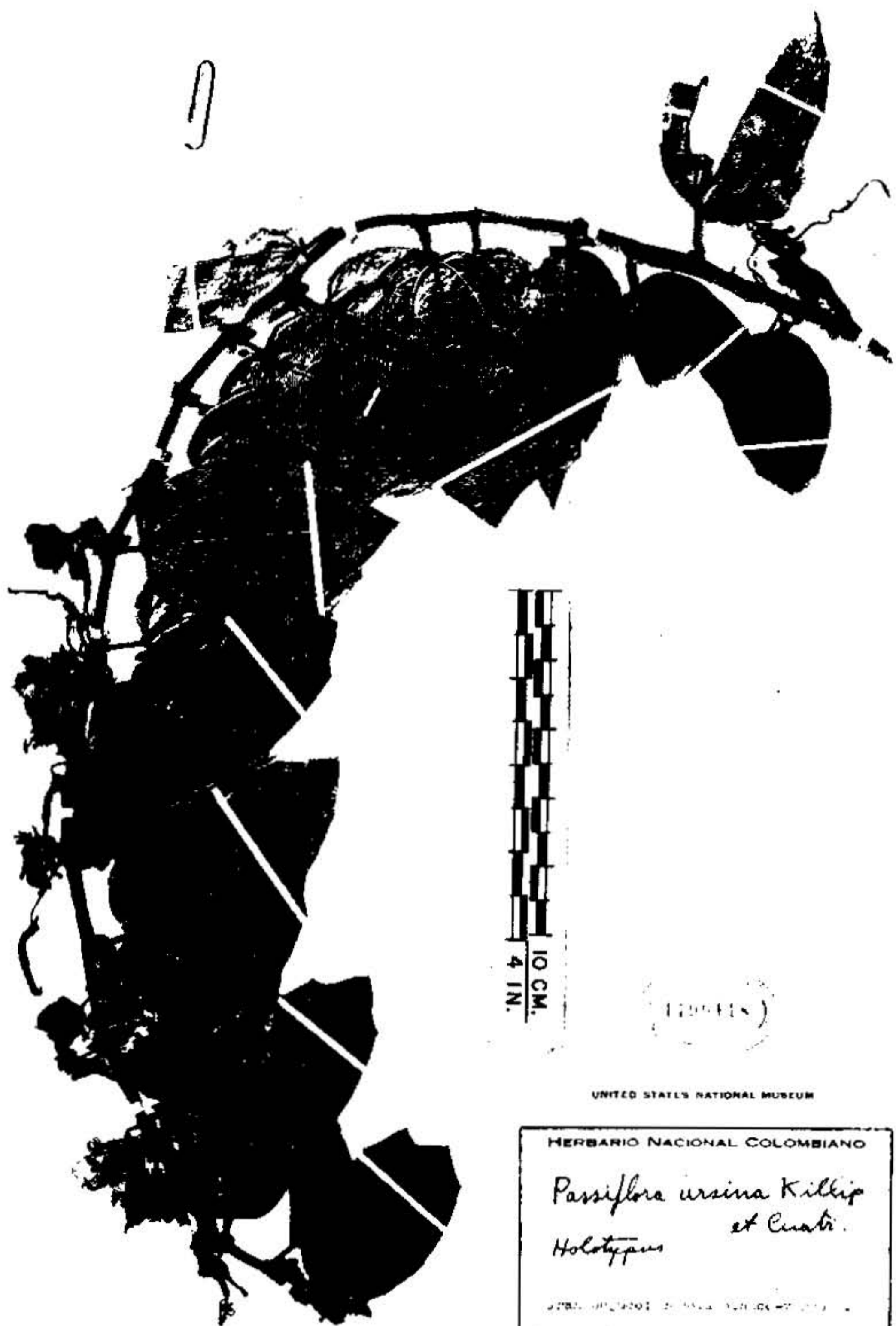
An additional collection was made by Philipson and Idrobo (No. 1820) at Central Mountains, Sierra de la Macarena, Meta, Colombia, at an altitude of 8,000 m., on Dec. 20, 1949 (BM). “Climber; fruit

yellow" are the notations given. This species is otherwise known only from the type specimen collected at Manáos, State of Amazonas, Brazil.

List of Exsiccatae

The numbers in parentheses refer to the species number in the text.

- | | |
|---|--|
| Allen 3340 (216). | Méndez 108 (309). |
| André 3478 (69a). | Metcalf (Goodspeed) 30784 (162). |
| Archer & Gehrt 170 (Mitostemma brevifilis). | Mexía 7645 (69). |
| Balls 7360 (69a). | Mille s.n. in 1918 (69). |
| Buchtien 4652 (287). | Mille 222 (69). |
| Burke, David, 184 (148b). | Ochoa 1565 (69). |
| Cárdenas 3886 (173). | Penland & Summers 1006 (173). |
| Cardona 284 (309a); 746 (349). | Pérez-Arbeláez 669 (100). |
| Chase 10125 (189). | Pérez-Arbeláez & Cuatrecasas 8083 (154a). |
| Cuatrecasas 4134 (349); 4237 (349); 4673 (200); 5136 (147); 6846 (353); 9479 (148a); 10776 (100); 11886 (14a); 13538 (148a); 20935 (69). | Philipson & Idrobo 1820 (Dilkea acuminata). |
| Daniel 1536 (245a); 1916 (177). | Philipson, Idrobo, & Jaramillo 2225 (352). |
| Davidson, M. E., 336 (61). | Pittier 6964 (309); 15023 (349). |
| Ducke 34968 (330a). | Raimondi 7807 (155a); 8241 (155a). |
| Espinosa 617 (135); 621 (135); 806 (135); E965 (166A); 1314 (135). | Riedel 535 (Mitostemma brevifilis). |
| Ewan 15899 (69a). | Schultes 5875 (213a). |
| Eyerdam (Goodspeed) 24718 (287); 25379 (180a). | Schultes & E. Smith 2000 (216). |
| Firmín 310 (69). | Schultes & Villarreal 7417 (69a). |
| Funck & Schlim 1381 (137). | Schuncke 358 (352). |
| García-Barriga 7757A (69a); 7785A (69); 11051 (200). | Skutch 3591 (211a). |
| Greenway 5942 (189). | Smith, A. C., 3157 (216); 3620 (221a). |
| Gutiérrez & Barkley 18C294 (170). | Sneidern, von, 1442 (177); 1444 (210). |
| Gutiérrez & Schultes 754 (216). | Stevens 258 (69). |
| Haught 2663 (349); 4600 (309); 4695 (309). | Steyermark 31281 (46a); 31519 (46a); 32884 (26); 32985 (46a); 46761 (26); 52879 (10); 52932 (4); 54397 (138); 54493 (159a); 56503 (149); 57240 (111); 57277 (137). |
| Hermann 11120 (352). | Tamayo 3025 (10); 3154 (209). |
| Humboldt & Bonpland (69). | Uribe Uribe 1061 (148a); 1334 (266). |
| Killip 34445 (200); 35692 (200); 37534 (349); 37539 (209). | Wedel, H. von, 2120 (61); 2421 (4). |
| Killip & García 33482 (63). | Williams, L., 11369 (348); 11618 (349); 11716 (349); 13125 (349); 14000 (200); 15069 (349); 15245 (349); 15310 (349); 15515 (349). |
| Lehmann 675 (69); 8020 (69). | |
| Matuda 1892 (26). | |



UNITED STATES NATIONAL MUSEUM

HERBARIO NACIONAL COLOMBIANO

Passiflora ursina Killip
et Cuatrecasas

Holotypus

1931. 1932. 1933. 1934. 1935. 1936. 1937. 1938. 1939. 1940. 1941. 1942. 1943. 1944. 1945. 1946. 1947. 1948. 1949. 1950. 1951. 1952. 1953. 1954. 1955. 1956. 1957. 1958. 1959. 1960. 1961. 1962. 1963. 1964. 1965. 1966. 1967. 1968. 1969. 1970. 1971. 1972. 1973. 1974. 1975. 1976. 1977. 1978. 1979. 1980. 1981. 1982. 1983. 1984. 1985. 1986. 1987. 1988. 1989. 1990. 1991. 1992. 1993. 1994. 1995. 1996. 1997. 1998. 1999. 2000. 2001. 2002. 2003. 2004. 2005. 2006. 2007. 2008. 2009. 2010. 2011. 2012. 2013. 2014. 2015. 2016. 2017. 2018. 2019. 2020. 2021. 2022. 2023. 2024. 2025.

PASSIFLORA URSINA KILLIP & CUATRECASAS



PASSIFLORA CUATRECASASII KILLIP



FLORA OF Colombia 104
 Passiflora rigidifolia Killip
 Killip
 1911
 Herbarium of the University of California
 Berkeley, Calif.

PASSIFLORA RIGIDIFOLIA KILLIP



PASSIFLORA BOYACANA KILLIP

Museo de Historia Natural de la Universidad de Lima

Fundado en 1918

No.

Director Fundador: Dr. Carlos Rospigliosi Vigil

Herbario Raymondi



A. Raimondi, Herbarium Peruianum

Procedencia

Chorrillos-Cajamarca

Familia

Passifloraceae

Nom. Vulg.

Género y Especie *Passiflora* Killip

PASSIFLORA RAIMONDII KILLIP



CHICAGO
 NAT. HIST. MUSEUM
 54493 PLANTS OF ECUADOR
 Passiflora
 "gularis"
 Petals deep salmon-red, the midrib
 with pale green center

PASSIFLORA ZAMORANA KILLIP



Passiflora loxensis Killip & Cuatr.
 Holotypus
 HERBARIUM UNIVERSITATIS LOXENSIS

N. E. 988

Passifloraceae
Passiflora

Flor grande (17 cm. diam.) color lila azulado.
 Colombia, Departamento de Boyacá, municipio de
El Valle de la Pasadita, finca de

Herb. No. 3100 M. G. E.

Dr. R. Inalfo Espinoza

PASSIFLORA LOXENSIS KILLIP & CUATRECASAS



UNITED STATES NATIONAL MUSEUM

UNIVERSITY OF CALIFORNIA
 General Botanical Garden, Department of Botany, University of California, Berkeley, California

Passiflora macropoda Killip
 1936

PASSIFLORA MACROPODA KILLIP

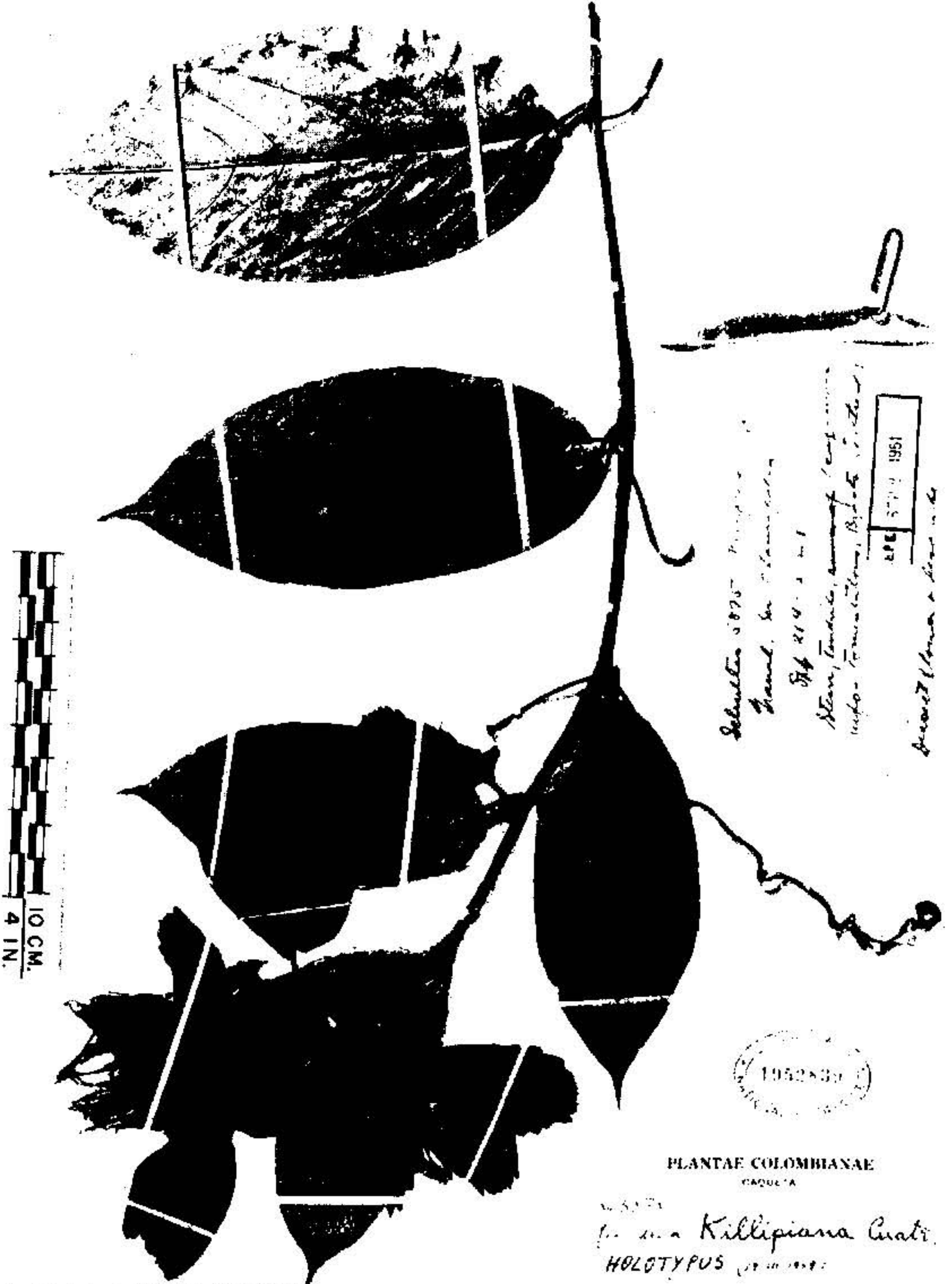


UNITED STATES NATIONAL MUSEUM

PLANTS OF COSTA RICA

Passiflora brevifila Killip
1961

PASSIFLORA BREVIFILA KILLIP



Schubert 5075
 Canal, San Ramon, Bol.
 Sep 21 1951
 Stem, Tendrils, young leaves
 under Tomcat, Bol.
 1951
 APE 5714 1951
 Fruit (leaves & stem)

10 CM.
 4 IN.

PLANTAE COLOMBIANAE
 CADUCA

1052837
Passiflora Killipiana Cuatrecasas
 HOLOTYPE (21.9.1951)

UNITED STATES NATIONAL MUSEUM

Richard Francis Lyman

PASSIFLORA KILLIPIANA CUATRECASAS



Passiflora Daniellii Killip
holotype



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PLANTS OF COLOMBIA

Passiflora

Cocorandé
1936

VIII-1938

PASSIFLORA DANIELII KILLIP