

Passiflora tinifolia Juss.
(*Passiflora* subgenus *Passiflora*):
resurrection and synonymies

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Adansonia est une revue en flux continu publiée par les Publications scientifiques du Muséum, Paris
Adansonia is a fast track journal published by the Museum Science Press, Paris

Les Publications scientifiques du Muséum publient aussi / *The Museum Science Press also publish: Geodiversitas, Zoosystema, Anthropolozologica, European Journal of Taxonomy, Naturae, Cryptogamie* sous-sections *Algologie, Bryologie, Mycologie, Comptes Rendus Palevol*

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Tél.: 33 (0)1 40 79 48 05 / Fax: 33 (0)1 40 79 38 40
diff.pub@mnhn.fr / <http://sciencepress.mnhn.fr>

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ISSN (imprimé / *print*): 1280-8571/ ISSN (électronique / *electronic*): 1639-4798

Passiflora tinifolia Juss. (*Passiflora* subgenus *Passiflora*): resurrection and synonymies

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Submitted on 23 November 2022 | accepted on 25 January 2023 | published on 23 October 2023

Rome M. & Coppens d'Eeckenbrugge G. 2023. — *Passiflora tinifolia* Juss. (*Passiflora* subgenus *Passiflora*): resurrection and synonymies. *Adansonia*, sér. 3, 45 (24): 373-383. <https://doi.org/10.5252/adansonia2023v45a24>. <http://adansonia.com/45/24>

ABSTRACT

Within the series *Laurifoliae* of subgenus *Passiflora*, the binomial *Passiflora laurifolia* L. historically has four synonyms: *Granadilla laurifolia*; *P. oblongifolia* Pulle, described from Suriname and known only from the type; *P. tinifolia* Juss. described from the Island of Cayenne (French Guiana), and *P. laurifolia* var. *tinifolia*, considered to be a small fruited variety of *P. laurifolia*. The more recently described *P. gabrielleana* Vanderpl. and *P. favardensis* Kuethe, both from French Guiana, also share many traits with these taxa. Four expeditions to French Guiana, from 2008 to 2017, have shown that *P. laurifolia*, as described in the last revision of this species, is only represented there by a few cultivated individuals introduced from the West Indies. In contrast, *P. gabrielleana* is commonly found along rivers and coasts, and in wet ditches, especially on the Island of Cayenne where *P. tinifolia* was considered to be common by Antoine de Jussieu. Likewise, herbarium and field data show us that *P. gabrielleana* is also present in neighboring regions of Brazil and Suriname. The very common presence of *P. gabrielleana* on the *locus classicus* of *P. tinifolia*, the absence of spontaneous forms of *P. laurifolia* in French Guiana, and the many similarities between these species, lead us to resuscitate the name of *P. tinifolia* and to place *P. gabrielleana*, *P. favardensis*, *P. oblongifolia* and *P. laurifolia* var. *tinifolia* as synonyms for this species. Thence, only *Granadilla laurifolia* is maintained as a synonym of *P. laurifolia*.

KEY WORDS

Flora of the Guianas,
nomenclature,
série Laurifoliae,
lectotypification,
new synonyms.

RÉSUMÉ

Passiflora tinifolia Juss. (*Passiflora* sous-genre *Passiflora*): *résurrection et synonymies*.

Dans la série *Laurifoliae* du sous-genre *Passiflora*, le nom *Passiflora laurifolia* L. possède quatre synonymes: *P. oblongifolia* Pulle, décrite du Suriname et connue seulement du type, *P. tinifolia* Juss. décrite de l'île de Cayenne, *P. laurifolia* var. *tinifolia*, considérée comme variété à petits fruits de *P. laurifolia* ou *Granadilla laurifolia*. Plus récemment, *P. gabrielleana* Vanderpl. et *P. favardensis* Kuethe ont été décrites de Guyane Française et partagent de nombreux traits avec ces taxons. Quatre expéditions en Guyane Française, de 2008 à 2017, ont montré que *P. laurifolia*, comme décrite dans la dernière révision de l'espèce, n'y est représentée que par quelques individus cultivés, introduits des Antilles. A l'inverse, *P. gabrielleana* est régulièrement trouvée le long des fleuves et des côtes, et dans des fossés humides, en particulier sur l'île de Cayenne où *P. tinifolia* était considérée comme commune par Antoine de Jussieu. Les données de terrain et d'herbiers nous montrent que *P. gabrielleana* est également présente dans les régions voisines du Brésil et du Suriname. La grande fréquence de *P. gabrielleana* sur le *locus classicus* de *P. tinifolia*, l'absence de formes spontanées de *P. laurifolia*, et les nombreuses similarités entre ces taxons nous poussent à ressusciter le nom de *P. tinifolia* et à placer *P. gabrielleana*, *P. favardensis*, *P. oblongifolia* et *P. laurifolia* var. *tinifolia* en synonymie. En corollaire, seul le nom de *Granadilla laurifolia* est maintenu comme synonyme de *P. laurifolia*.

MOTS CLÉS

Flore de la Guyane,
nomenclature,
série des Laurifoliae,
lectotypification,
synonymes nouveaux.



Fig. 1. — Iconography of *P. tinifolia* Juss. from the original description by Jussieu (1805).

INTRODUCTION

In 1787, shortly after the description of *Passiflora laurifolia* L., Medicus retained the genus *Granadilla* Mill., including *G. laurifolia* (L.) Medic. This name was used until 1822, when De Candolle downgraded *Granadilla* to a subgenus of *Passiflora* L.. Within this subgenus, the series *Laurifoliae* Killip ex Cervi, is considered a very difficult group (Killip 1938). Its 18 species (Rome *et al.* 2022) of glabrous to pubescent plants present stems that are terete to angular, sometimes corky on old parts; leaves are entire, oblong-lanceolate, not peltate, with entire to glandular-serrulate margins and biglandular petioles; stipules are setaceous or linear, early deciduous; their three bracts, free at base, with

entire or serrulate-glandular margins, are more than 1 cm long; their flowers are pendent, usually large and showy, often fragrant with a short hypanthium and two campanulate series of long external filaments, and a variable number of series of reduced internal filaments (Rome & Coppens d'Eeckenbrugge 2017).

Passiflora tinifolia Juss. was described in 1805 by Antoine Laurent de Jussieu (Fig. 1) from three herbarium specimens collected by Pierre Louis Richard in Cayenne Island (French Guiana). Jussieu mentioned that the species was locally called "maritambour" and sold in markets for its edible fruit the size of an apricot. He added that *P. tinifolia* should not be confused with *P. laurifolia*, which differs from it by its less elongated leaves with a cordate base, by



FIG. 2. — Iconography of *P. tinifolia* Juss. from Guyana, according to Hooker *et al.* (1857).

its stipules whose tip is truncated obliquely, by the two nectary glands of the petiole closer to the lamina, by the involucre of broad, oval, more crenated bracts, equal in length to the calyx, which does not extend beyond the outer corona. Based on herbarium specimens, the description indicated no colors and was accompanied by a botanical drawing. According to Killip (1938), these specimens were absent from the Muséum national d'Histoire naturelle in Paris. In fact, they were maintained in this institution under *Passiflora laurifolia*, and we could examine them for the present analysis.

In 1857, William Jackson Hooker *et al.* described and illustrated what they believed to be *P. tinifolia* from cultivated living specimens originally collected in Demerara (Guyana) in 1856. The description specified the size and color of the organs. Although they took up Jussieu's arguments, the associated botanical drawing contradicted them on the stipules and the position of the glands on the petiole, so justifying only partly the separation from *P. laurifolia*. Indeed, the drawing (Fig. 2) shows obliquely truncated stipules and nectary glands at the apex of the petiole, in contact with the lamina, as in *P. laurifolia*, whereas it represents an involucre of bracts clearly shorter than the calyx, more characteristic of *P. tinifolia*.

In 1906, August Adriaan Pulle described *Passiflora oblongifolia* Pulle. The type had been collected by the Dutch botanist Gerard Martinus Versteeg, from Drietabbetje, a Surinamese village located along the Tapanahoni River, a tributary of the Maroni River that separates Suriname from French Guiana. This description gives precise measurements of the different organs of the plant without detailing their colors. However, the brownish parchment appearance of the type bracts suggests that they had a reddish coloration.

In 1928, Désiré Bois downgraded *P. tinifolia* to a variety of *P. laurifolia* on the basis of fruit size. According to him, in the *tinifolia* variety, the fruit is "smaller, with superior pulp, described as exquisite by R. P. Duss". He ended his description by explaining that in the French West Indies, this variety was known under the name of "Marietambour", implying that *P. tinifolia* was also present in the Caribbean.

In his monograph, Killip (1938) placed the names of *P. oblongifolia*, *P. tinifolia* and *P. laurifolia* var. *tinifolia* as synonyms of *P. laurifolia*. Even though he discussed the approximations to the drawing of the original description of *P. tinifolia*, he gave no arguments for his position. Thus, following this publication, *P. laurifolia* distribution encompassed the Caribbean and tropical South America, from the Guiana shield via Trinidad and Venezuela to the Peruvian Amazon and western Brazil.

In 2006, John Vanderplank and Cor Laurens described *P. gabrielleana* Vanderpl. from plants collected on the Island of Cayenne. They distinguished it from *P. laurifolia*, *P. caparidifolia* Killip, *P. nitida* Kunth, and *P. crenata* Feuillet & Cremers by its much narrower leaves, with a V-shaped cross-section. They also explained that the position and shape of the petiolar glands, the size, color and shape of the

flowers and the fruit are distinct without giving details and mentioned that the bracts are purple to mauve and deeply concave, the petals and sepals reflex at anthesis, and the fruit small and orange. Finally, they noted the frequent presence of an "extended membrane from the nectar ring towards the androgynophore, closely resembling the operculum," as a unique trait of the species.

In 2011, Yero Kuethe described *Passiflora favardensis* Kuethe (nom. invalid.) from the Kaw mountain, near the Favard Mountain. According to the author, *P. favardensis* leaves are rounded at apex while they are acuminate in *P. gabrielleana*.

Our present revision of the taxa presented above has been mostly based on materials and data collected in four botanical expeditions, conducted from 2008 to 2017 and specially focused on the species of series *Laurifoliae* and their distribution in French Guiana. Here, we shall compare the descriptions of *P. tinifolia* by Jussieu (1805) and by Hooker *et al.* (1857), *P. oblongifolia* by Pulle (1906), *P. gabrielleana* by Vanderplank & Laurens (2006), *P. favardensis* by Kuethe (2011), and *P. laurifolia* by Rome & Coppens d'Eeckenbrugge (2018). Furthermore, we compared our field measurements of living specimens of *P. gabrielleana* with our analyses of the herbarium specimens cited in the descriptions of *P. oblongifolia* by Pulle (1906), *P. tinifolia* by Jussieu (1805) and *P. gabrielleana* by Vanderplank & Laurens (2006).

MATERIAL AND METHODS

During the four botanical expeditions to French Guiana (March to June 2008, November to December 2009, January to February 2013 and February to March 2017), we sighted and georeferenced 83 plants that we identified as *P. gabrielleana* in French Guiana and on the Brazilian bank of the Oyapock River. Each plant was measured according to the protocol developed in Ocampo Pérez & Coppens d'Eeckenbrugge (2017) and adapted to species of series *Laurifoliae* by Rome (2021). Only 46 plants were collected and placed in herbaria (specimens listed below). We also analyzed herbarium materials at the Missouri Botanical Garden (MO), the Museum of Natural History in Paris (P), the Naturalis Center at Leiden (U), the Royal Botanical Garden of Kew (K), the Cayenne Herbarium (CAY), as well as the online specimens of the United States National herbarium (US).

SPECIMENS EXAMINED

Passiflora gabrielleana Vanderpl.
(observations on wild living specimens).

MATERIAL EXAMINED. — **French Guiana.** Kaw Mountain, Camp Patawa, cultivated, IV.2008, *Rome 9* (LYJB). — Régina, along the road to Auberge de l'Approuague, XI.2009, *Rome 208*, *Rome 209*, *Rome 210*,

Rome 212, Rome 213 (LYJB). — Pont des Cascades, I.2013, Rome 404 (LYJB). — Cayenne, Leblond crossroad, XI.2009, Rome 240, Rome 241, Rome 242 (LYJB); I.2013, Rome 401, Rome 402 (LYJB). — Road to Régina, bridge on Comté River, XI.2009, Rome 204, Rome 205, Rome 206 (LYJB). — Kourou, road to Guatemala village, XI.2009, Rome 229, Rome 230 (LYJB). — Road to Awala-Yalimapo (les Hattes), XI.2008, Rome 232, Rome 233 (LYJB). — Cayenne, sentier de Montabo, IV.2007, Rome 108, Rome 109, Rome 110, Rome 111, Rome 113 (LYJB). — Saint Georges de l'Oyapock, island on Oiapock River, near Saut Maripa, II.2013, Rome 414 (LYJB). — Régina, IV.2007, Rome 123 (LYJB); II.2013, Rome 416, Rome 417, Rome 418, Rome 419 (LYJB). — Road to Saint Elie, XI.2009, Rome 231 (LYJB). — St Georges de l'Oyapock, Saut Maripa, II.2013, Rome 413 (LYJB). — Kourou bridge, 25.II.2017, Rome 561 (P[P00861249]). — Road to Saint Elie, 25.II.2017, Rome 564 (P[P00861258]). — Macouria, 26.II.2017, Rome 566 (P[P00861261]). — Road to Montsinéry, before Risquetout road, 3.III.2017, Rome 568 (P[P00861262]). — Road to Montsinéry, 3.III.2017, Rome 570 (P). — Road to Rémière, 4.III.2017, Rome 571 (P[P00861265]). — Road to Yiyi swamps, 13.III.2017, Rome 577 (P[P00861271]). — Trou Poisson, 13.III.2017, Rome 578 (P[P00861270]), Rome 579 (P[P00861272]), Rome 580 (P[P00861273]). — Saint Jean, 14.III.2017, Rome 582 (P[P00861274]).

Brazil, Amapá. Oiapoque, banks of Rio Oiapoque, II.2013, Rome 414 (LYJB).

Passiflora gabrielleana

(observations on herbarium specimens)

MATERIAL EXAMINED. — **French Guiana.** Kaw River, 22.II.2002, de Granville 14731 (CAY[CAY022806]). — Emerillons Path, near Saut Verdun, 23.VII.1973, de Granville 1895 (CAY[CAY218245, CAY218246], P[P04882033]). — Mana, near Saut Sabat, 16.VII.1981, de Granville 7172 (CAY[CAY076280]; P[P04882031]). — Cayenne, Zéphir beach, 16.II.1986, Feuillet 2990 (CAY[CAY199759, CAY199760, CAY199761, CAY199762]; P[P04882024]). — Garden of IRD center, Cayenne, 15.I.2002, Bourdy 2874 (CAY[CAY057239]); 19.VI.1997, Prévost 3318 (CAY[CAY199766]); 14.II.1999, Prévost 3637 (CAY[CAY000193]); 7.III.1999, Prévost 3644 (CAY[CAY000208], P[P04882001]). — Oyapock River, Yacaescin Island, 10.XII.1965, Oldeman 1722 (P). — Saint Elie Path, 9.I.1995, Prévost 3089 (CAY[CAY007711, CAY007712]). — Sinnamary, near Philippon Creek, Puig 12010 (CAY[CAY199765]). — Guatemala, 16.I.2003, Rignon 2 (CAY[CAY058943], P[P00782165]). — RN2 Cayenne-Régina, bridge on Comté River, 20.I.2003, Rignon 5 (CAY[CAY065546]); 21.II.1985, fl., fr., Sabatier 819 (CAY[CAY218181]); plantule, Sabatier 819a (CAY[CAY218566, CAY218567, CAY218568]). — Montsinéry, 20.I.2003, Rignon 6 (CAY[CAY065545]). — Dégrad Saramaka, Maripa, 24.I.2003, Rignon 7 (CAY[CAY065544, CAY175834]; P[P00782163]). — Comté River, 27.I.2003, Rignon 8 (CAY[CAY065543], P[P00782164]). — Cayenne, Larivot, 13.II.2004, Rignon 10 (CAY[CAY065542]). — Kwata Mountain, Bagot Creek, 18.VI.2005, Rignon 11 (CAY[CAY064941]). — Acarouany, IV.1855, Sagot 281 (P[P04881497, P04881498]). — Tonnegrande River, Vanderplank 1434 (Nat. Coll. *Passiflora*) (type, CAY[CAY080675, CAY080676]). — Kaw Mountain, Placer Trésor, 14.III.2009, Vanderplank 1600 (CAY[CAY098547]). — Maroni River, Saipan Creek, near Portal Island, 10.III.2006, Andel 5008 (K). — 29.XII.1913, Benoist 474 (P); I.1877, Mélinon 419 (P[P04882010, P04882012, P04882014]). — Mirat Creek, III.1967, Oldeman 975 (CAY[CAY088104, CAY088105, CAY088106]). — Approuague, Saut Mapaou, 21.I.1970, Oldeman 2612 (P[P04882000]). — Sinnamary River, between Plomb Creek and Saut Tigre, 15.VII.1984, Prévost 1556 (CAY[CAY218396], P[P04882004]). — Salut Island, VI.1854, Sagot s.n. (P).

Suriname. X.1851, Splitgerber 2 (P).

Passiflora oblongifolia Pulle

(observations on herbarium specimen)

MATERIAL EXAMINED. — **Suriname.** Tapanahoni River, VII.1904, Versteeg 652 (type of *P. oblongifolia*, U).

Passiflora tinifolia Juss.

(observations on herbarium specimens)

MATERIAL EXAMINED. — **French Guiana.** Cayenne, Richard s.n. (P[P04881994, P04881999, P04882008]).

REMARK

The field data obtained on living specimens of *P. gabrielleana* were compared with the descriptions of *P. laurifolia* by Rome & Coppens d'Eeckenbrugge (2018), *P. tinifolia* by Jussieu (1805) and Hooker et al. (1857), *P. oblongifolia* by Pulle, *P. gabrielleana* by Vanderplank & Laurens (2006), and *P. favardensis* by Kuethe (2011).

RESULTS

In general, the different descriptions show modest variations. The organ dimensions fall within the range of variation observed in *P. laurifolia*. The oldest descriptions (*P. tinifolia* and *P. oblongifolia*) are the least precise and lack information on the pubescence and color of the organs, confirming that Jussieu and Pulle made their descriptions from herbarium specimens (Table 1).

The three herbarium specimens of *P. tinifolia* collected by Richard complete the description by Jussieu. They are fertile, with more or less open flowers, but no fruits. Leaves, tendrils and stems, are clearly visible, while stipules are visible only on one specimen. The nectar glands are located at or just below the apex of the petiole, adding some variation in comparison to Jussieu's description; leaf apices of specimens fluctuate from acuminate to rounded. Ovaries, hypanthiums and bracts are clearly pubescent and the brownish dried bracts indicate a deep red color at the time of collection.

The examination of the *P. oblongifolia* type complements and even corrects its description by Pulle (1906). As for *P. tinifolia*, its flowers present pubescent ovaries (vs glabrous in the description), bracts and hypanthiums, and brown bracts. Their peduncle is less than 4.8 cm long, which is not different from the values measured in the other taxa under study.

As *P. tinifolia* and *P. oblongifolia*, *P. gabrielleana* differs from *P. laurifolia* only by its purplish bracts (vs. green in *P. laurifolia*). Indeed, the pubescence of several floral parts (bracts, hypanthium and ovary), as well as the position of the nectary glands on the petiole seem underestimated in the description of *P. gabrielleana*, as compared to the specimens collected in the field, as well as the herbarium specimen Vanderplank 1434. Thus, their bracts, hypanthium and ovary are pubescent as in *P. laurifolia*. The folded aspect of the leaf, described by Vanderplank as a unique character to this species, appears very variable on the specimens observed, with leaves that are flat to folded.

TABLE 1. — Comparison between the descriptions of *P. laurifolia* L. (Rome & Coppens d'Eeckenbrugge 2018), *P. tinifolia* Juss. (Jussieu 1805; Hooker *et al.* 1857), *P. oblongifolia* Pulle (Pulle 1906), and *P. gabrielleana* Vanderpl. (Vanderplank & Laurens 2006) and *P. favardensis* Kuethe (Kuethe 2011), with additional information from the iconographies of the original descriptions (*) and authors' field observations on 83 wild specimens from French Guiana. The traits diverging from the description of *P. laurifolia* by Rome & Coppens d'Eeckenbrugge (2018) are highlighted in **bold**.

		<i>P. laurifolia</i> (Rome & Coppens 2018)	<i>P. tinifolia</i> (Jussieu 1805)	<i>P. tinifolia</i> (Hooker <i>et al.</i> 1857)	<i>P. oblongifolia</i> (Pulle 1906)	<i>P. gabrielleana</i> (Vanderplank & Laurens 2006)	<i>P. gabrielleana</i> (on living specimens)	<i>P. favardensis</i> (Kuethe 2011)
Stem	shape	terete	terete	terete	terete to striate	terete	terete to subangular	terete
	pubescence	glabrous	glabrous	glabrous	glabrous	glabrous	glabrous	glabrous
Stipules	shape	linear falcate	setaceous (or falcate*)	linear subulate	linear	linear falcate	linear falcate	linear
	pubescence size (L × l, mm)	glabrous 5.5-13.2 × 0.4-1	–	–	–	glabrous 2-10 × 0.5-0.75	glabrous 3.8-11.7 × 0.4-1.7	– 2 (10*) mm long
Petiole	length (cm)	1.1-2.9	–	1.27	1	0.8-2	0.7-2.3	2.5
	glands position	apex	below apex*	below apex	apex	below apex	below apex/apex	below apex
Leaves	base shape	rounded to cordate	rounded*	obtuse	rounded	rounded to cunate*	cunate to cordate	obtuse
	apex shape	acute, acuminate, mucronate	acuminate*	briefly acuminate	acuminate	acute, acuminate*	rounded to acuminate, mucronate	rounded (to acuminate*)
	margin pubescence size (L × l, cm)	entire to glandular glabrous 7.3-14.2 × 4.4-7.5	entire – about 10.6 cm long	entire – 10.16 cm long	slightly serrate – 11-13 × 6-7	entire* glabrous 7-20 × 3-8.5	entire to glandular glabrous 9.2-18.2 × 3.6-8.5	entire glabrous 13-15 × 8-9
Peduncle Bracts	length (cm)	1.5-7.5	about 7.5	about 2.5	4-5	2.5-7	1.6-6.3	3-4
	color	green	–	green	–	dark purple	pink to dark purple	reddish pink
	size (L × l, cm)	2.8-5.5 × 2.2-4.9	shorter than the calyx	about half of the flower length	4 × 2.5	2.5-4 × 1.5-2.5	2.7-5 × 1.2-3.4	3-3.5 × 2-2.5
	pubescence	slightly pubescent	–	–	–	glabrous	pubescent	–
Hypanthium (including nectary chamber)	pubescence	slightly pubescent	–	–	–	glabrous	glabrous to pubescent	–
	length (cm)	2.6-5.9	–	–	–	–	–	–
Sepals	size (L × l, cm)	2.9-5.1 × 1-1.7	about 3 cm long (deduced from the description)	–	4.5 × 1.5-2	2.5-5 × 1.2-1.8	3.5-7 × 1.3-2.2	5-5.5 × 1.5-2
	pubescence	glabrous	–	–	–	glabrous	glabrous to pubescent	–
	adaxial color	white with red dots	–	red	–	pale pinkish red or mauve red dotted with dark red	white with pink to dark red dots	reddish brown
Petals	size (L × l, cm)	2.8-4.9 × 0.7-1.2	about 3 cm long (deduced from the description)	–	about 1 cm wide	2.4-4.9 × 0.7-1.4	3.2-5.3 × 1-2	5-6 × 1.5-2
	color	white more or less dotted with red	–	pinkish red*	–	pale pink or pinkish mauve dotted with red	white with pink to dark red dots	reddish brown to red
Series of filaments	number	5-7	–	3	4	4	3-7	4

Table 1. — Continuation.

		<i>P. laurifolia</i> (Rome & Coppens 2018)	<i>P. tinifolia</i> (Jussieu 1805)	<i>P. tinifolia</i> (Hooker <i>et al.</i> 1857)	<i>P. oblongifolia</i> (Pulle 1906)	<i>P. gabrielleana</i> (Vanderplank & Laurens 2006)	<i>P. gabrielleana</i> (on living specimens)	<i>P. favardensis</i> (Kuethe 2011)
Two outer series (first one/ second one)	color	striped white and red – to dark purple	–	striped white and red – to dark purple	–	striped white and red to dark purple	striped white and red to dark purple	striped white and red to dark purple
	length (mm)	12-30/24-43	–	unequal	25/50	12-21/25-42	9-29/31-49	about 30/60 (25/45*)
Inner series	number	3-5	–	1 composed of several rows*	2 (each composed of several rows)	2 (each composed of several rows)	1-5	2
	length (mm)	c. 1	–	–	c. 1*	0.5. les plus internes 0.2-1.5	c. 1	c. 1*
Androgynophore	length (mm)	10-16	–	–	20	–	14-21	about 40 (30*)
ovary	pubescence	pubescent	–	–	glabrous	glabrous	pubescent	pubescent
fruit	shape	ovoid	ovoid	–	–	subglobulous to ovoid	rounded to oblong	–
	size (L × l, cm)	4.7-8.4 × 3.8-6.3	size of an apricot	–	–	3.5-7.5 × 2.5-5.2	2.5-8.4 × 2.5-6.5	–
	immature color/ mature color	green dotted with white with 6 longitudinal lines/ yellowish orange dotted with orange	yellow	–	–	green/orange or yellowish orange with 6 longitudinal lines	green dotted with white with 6 longitudinal lines/ yellowish orange dotted with orange	–

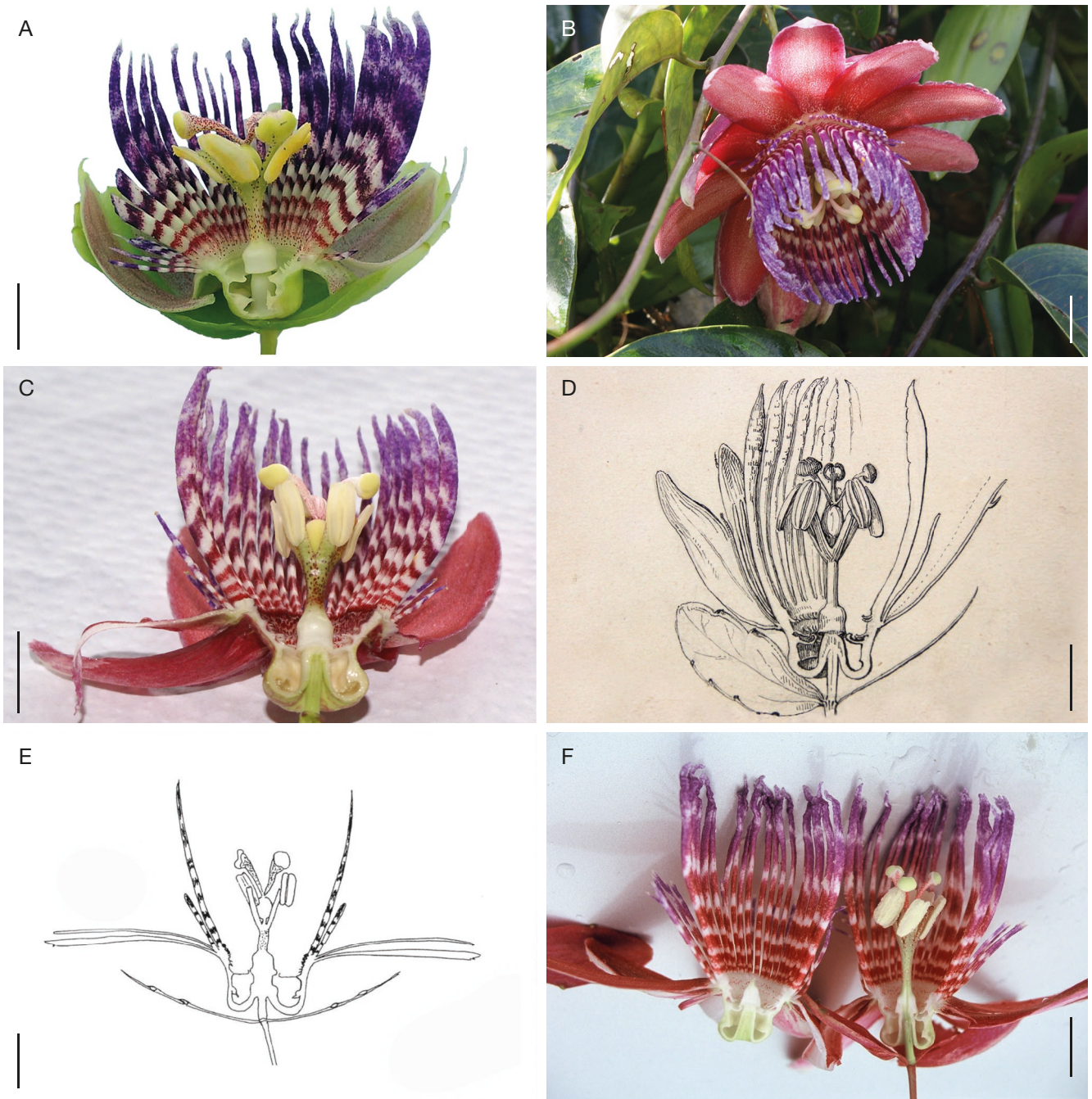


FIG. 3. — Pictures and drawings of *P. laurifolia* L., *P. oblongifolia* Pulle, *P. gabrielleana* Vanderpl. and *P. favardensis* Kuethe: **A**, *P. laurifolia* from Guadeloupe (photograph F. Booms); **B**, **C**, *P. gabrielleana* from Montsinery, near its *locus classicus* in French Guiana (photograph M. Rome); **D**, drawing of *P. oblongifolia* from the holotype *Versteeg* 652 (from Pulle 1906); **E**, drawing of *P. gabrielleana* by J. Vanderplank in Vanderplank & Laurens (2006); **F**, picture of *P. favardensis* by Christian Houel in Kuethe (2011). Scale bars: 1 cm.

Figure 3 allows us to understand the internal floral structure of the different taxa. In all of them, we observe two outer series of filaments of different lengths, then several internal series of reduced or aborted filaments. The nectary chamber is closed by a more or less horizontal operculum; the nectary ring is well marked and curved backward. This last trait, presented as unique in

the description of *P. gabrielleana*, is in reality identical in the other taxa (Fig. 3).

The description of *P. favardensis* does not differ from that of *P. tinifolia* or from field data on *P. gabrielleana*. The “rounded at the apex” character of the leaves, mentioned by Kuethe as discriminating with respect to *P. gabrielleana* and shared with *P. laurifolia*, appears to be variable and



FIG. 4. — *Passiflora tinifolia* Juss., French Guiana (photos: Maxime Rome): **A**, young leaf with glands at the apex of the petiole and linear stipules; **B**, mature leaf with peduncles gathered in a pseudoraceme; **C**, flower bud with bracts; **D**, flower; **E**, longitudinal section of flower; **F**, immature and mature fruit.

is also found in *P. gabrielleana*, and rarely in *P. laurifolia*. Thus, only the color of the bracts separates *P. favardensis* from *P. laurifolia*.

Finally, the description of *P. tinifolia* by Hooker *et al.* (1857) is particular in showing more similarities with the description of *P. laurifolia* than with those of the other taxa. Both descriptions share the green coloration of the bracts.

DISCUSSION

Our morphological analyses of the different taxa have shown no appreciable differences between four of the compared taxa that have been collected and/or characterized in the wild in French Guiana and neighboring regions: *P. gabrielleana*, *P. oblongifolia*, *P. tinifolia* and *P. favardensis*. Presenting the same morphology and distribution, they must be considered one

and the same species. According to Article 11.4 of the code of nomenclature, the oldest name, *P. tinifolia*, must be retained. Thus, *Passiflora tinifolia* Juss. has four synonymous names: *P. gabrielleana* Vanderpl., *P. favardensis* Kuethe, *P. oblongifolia* Pulle and *P. laurifolia* var. *tinifolia* Bois. However, the publication of *P. favardensis* cannot be considered effective before 01/01/2012 by the Code (Turland *et al.* 2018: Art. 29.1), as it is only electronic and it lacks a Latin diagnosis. Therefore, this name is invalid. The name of *Granadilla laurifolia* remains a synonym of *P. laurifolia*. At this stage, the distinguishing characters between *P. laurifolia* and *P. tinifolia* appear limited to the color of the bracts.

In his description of *P. tinifolia*, Jussieu mentioned that Richard observed this species around Cayenne, but he did not mention the specimens at the Museum of Natural History in Paris. Thus, we propose to lectotypify these specimens: P04882008 as lectotype, with P04881994 and P04881999 as isolectotypes.

The description of *P. tinifolia* by Hooker *et al.* (1857) corresponds to *P. laurifolia* with bracts clearly shorter than the calyx, suggesting that bract color is the only qualitative trait differentiating *P. tinifolia* from *P. laurifolia*, in the absence of a more complete morphological comparison with *P. laurifolia*. Given the high variation observed for bract size and shape in other widespread species of series *Laurifoliae*, as *P. riparia* and *P. acuminata* (Rome & Coppens d'Eeckenbrugge 2019; Rome *et al.* 2022), this distinction remains tenuous. Fruit size could be another distinctive trait, but it should be studied on wild populations under similar conditions for both species. A much finer study of morphological variation, involving quantitative descriptors and living materials, has been undertaken. Its first results lead us to maintain these two taxa as distinct species.

TAXONOMIC TREATMENT

Family PASSIFLORACEAE Juss. ex Roussel
Genus *Passiflora* L.

Passiflora tinifolia Juss.
(Fig. 4)

Annales du Muséum d'Histoire naturelle 6: 113, pl. 41, f. 1 (Jussieu 1805).

Passiflora laurifolia var. *tinifolia* (Juss.) Bois, *Passiflora laurifolia*. *Les plantes alimentaires chez tous les peuples et à travers les âges : histoire, utilisation, culture* 2: 357 (Bois 1928), **syn. nov.**

Passiflora oblongifolia Pulle, *An Enumeration of the Vascular Plants Known from Surinam* 321, t. 14, f. 3 (Pulle 1906), **syn. nov.** — Type specimen: Suriname, bank of Tapanahoni River, near Drie Tabbetje, VII.1904, *Versteeg* 652 (holo-, U!; iso-, U!).

Passiflora gabrielleana Vanderpl., *Curtis's Botanical Magazine, new ed.* 23 (3): 239, pl. 564 (Vanderplank & Laurens 2006), as '*gabrieliana*', **syn. nov.** — Type specimen: French Guiana. Near the Tonnegrande River, *Vanderplank & Laurens (Nat. Coll. Passiflora)* 1434 (holo-, K!; iso-, CAY!, MO!).

Passiflora favardensis Kuethe, *Passiflora Online Journal* 1 (1): 20-25 (Kuethe 2011) [invalid name], **syn. nov.** — Type

specimen: French Guiana. Favard Mountain, along the Kaw road, 2003, *Moerman s.n.* (holo-, U).

TYPE. — French Guiana. Cayenne, *L. C. M. Richard s.n.* (lecto-, P[P04881994]!, designated here; isolecto-, P[P04881999, P04882008]!, designated here).

HABITAT AND DISTRIBUTION. — The species, mainly riparian, is found along rivers, wet ditches and flooded areas in French Guiana (frequent), Suriname and Brazil (Amapá). A few specimens were also found on white sand near the seaside of Awala Yalimapo village.

DESCRIPTION

Robust liana. Stem round, glabrous and green. Tendrils glabrous. Stipules linear, falcate, green to green-brown, entire to glandular (0-2 glands), glabrous, 4-12 × 0.5-2 mm, deciduous. Petiole 7-23 mm long, green to dark green, slightly canaliculated above, glabrous, with two oval sessile glands at the petiole apex (6-18 mm from its base). Leaves simple, 9.2-18.2 × 3.6-8.5 cm, entirely glabrous, green to dark green, lustrous on adaxial surface, cuneate to subcordate base, apex acute, slightly acuminate and mucronate; margin entire to glandular (0-31 marginal nectaries). Peduncles 15-63 mm long, round in section, green, glabrous, stout (diameter 1-3 mm); pedicel 7-19 mm long. Bracts deciduous, pubescent, pink to violet, papery, concave, 27-50 mm long, 10-34 mm wide, with 2-10 sessile, marginal nectaries. Axillary flowers, solitary or in pseudoracemes, pendulous, 13 to 40 mm long (from the nectariferous chamber to the apex of the ovary). Hypanthium pubescent, greenish with more or less anthocyanins outside and white inside, 7-17 mm (including the nectariferous chamber), with a diameter of 10-22 mm at the base of the sepals. Nectar chamber pubescent, greenish, sometimes with anthocyanins on the outside and white inside, 3-9 mm long, with a diameter of 11-18 mm. Sepals pubescent, oblong, 35-70 mm long, 13-22 mm wide, white strongly dotted with red, slightly concave with a subapical awn (0.5-7 mm long). Petals glabrous, oblong, 32-53 mm long and 10-20 mm wide, white to pinkish-white. Corona composed of 3-7 series of filaments, striped white and red to dark purple to violet (purple to violet on the distal half and striped with red to purple on the proximal half); two main series, the outermost 9-29 mm long, the second 31-49 mm long; the other series about 1-2 mm long. Ovary pubescent, yellowish-white, 5.8-12.1 mm long; styles white punctuated with purple, 9-14 mm long; stigmas light yellow. Stamens 7-10 mm long. Androgynophore glabrous, white more or less punctuated with purple, 14-21 mm long with a slightly enlarged base. Operculum membranous, 2-4 mm long, more or less erect, briefly fimbriated. Fruit ovoid, pubescent, 3.5-4.8 cm long, 3.1-4.2 cm in diameter, round in cross section, epicarp 5-7 mm thick; immature fruits green with white dots and with six longitudinal veins (three of them conspicuous); yellowish-orange ripe fruits with many tiny light orange dots. Translucent and soft pulp. Seeds obcordate, black.

Acknowledgements

We are very grateful to the late Jean-Jacques de Granville (ex-curator of the Cayenne herbarium), Christian Houel (French National Collection of Passionflowers), and Chloé Pérez, for their help during travels in French Guiana. We would also like to thank Guillaume Léotard for his valuable advice on the nomenclature of these species. Thierry Deroin and an anonymous referee are also thanked for reading a previous version of the manuscript.

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Submitted on 23 November 2022;
accepted on 25 January 2023;
published on 23 October 2023.