

A new species of *Inga* Mill. (Fabaceae, Mimosoideae) from the Guianas

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ABSTRACT

Some specimens belonging to the genus *Inga* Mill., collected as part of tree inventories carried on by the forest departments of former British Guiana (Guyana) and French Guiana in the 1950's, remained unidentified. The more recent discovery of flowering materials brought evidence for them to represent an undescribed species, closely related to *Inga paraensis* Ducke. It differs from the latter by its smaller flowers and by its larger pod exhibiting ligneous, thickened sutures, undulating around seeds. Following the description, the morphological variation shown by a set of specimens listed separately is discussed.

KEY WORDS

Fabaceae,
Mimosoideae,
Inga,
the Guianas,
new species.

RÉSUMÉ

Une nouvelle espèce d'Inga Mill. (Fabaceae, Mimosoideae) des Guyanes.

Plusieurs spécimens fructifiés d'arbres du genre *Inga* Mill., récoltés lors d'inventaires réalisés par les services forestiers de Guyane britannique (aujourd'hui Guyana) et de Guyane française dans les années 1950, étaient restés indéterminés. La découverte plus récente de matériel en fleurs a confirmé qu'il s'agit d'une espèce inédite, affine d'*Inga paraensis* Ducke. Elle s'en distingue par des fleurs plus petites et par une gousse beaucoup plus volumineuse, remarquable par ses sutures lignifiées, épaissies, ondulées autour des graines. La description est suivie d'une discussion sur la variation morphologique présentée par certains spécimens non inclus dans la série type.

MOTS CLÉS

Fabaceae,
Mimosoideae,
Inga,
Guyanes,
nouvelle espèce.

INTRODUCTION

Inga Mill. is a large neotropical genus including a number of about 300 species (Pennington 1997). A former study of the genus in French Guiana (Poncy 1985) recorded 36 species in this area. Since the 1990's the botanists of IRD (Institut de Recherche pour le Développement, formerly ORSTOM) have carried out intensive tree diversity inventories on a plotted area at Piste de St-Elie (French Guiana). They collected lots of sterile or "poorly fertile" specimens of an unidentified *Inga* species that they nicknamed "inga vernissé" (= "glossy inga"). Attempts to compare them with mature fruit collections made in two distinct areas in the Guianas (Guyana, western French Guiana) were not satisfying. The first collecting (1991) of mature flowers in the "glossy inga" area brought even more confusion in species identification, because of the morphological leaf variation, and because there was no mature fruit available to help and evidence the whole set to belong to a single species. As part of the taxonomic revision of the genus for *Flora of the Guianas*, a more complete set of specimens was recently re-examined, and the decision made about the taxonomical and geographical delimitation of a new species, attributed to the section *Leptingia* Benth. and close to *Inga paraensis* Ducke. The description given below is followed by a discussion about the morphological variation shown by a set of specimens listed apart from the typical ones.

SYSTEMATICS

Inga loubryana Poncy, sp. nov.
(Figs 1; 2)

Arbor grandis, ad sectionem Leptingam pertinens, Inga paraensis Ducke *affinis sed praecipue differt minoribus floribus, cum campanulato calyce et infundibuliformi corolla, atque fructu amplo, sinuatis crassis prominentibusque suturis munito.*

TYPUS. — French Guiana. Sinnamary, Piste de St-Elie, PK 19, 11.V.1991, fl., *Loubry 1135* (holo-, P; iso-, CAY, US).

PARATYPES. — French Guiana. Montagne de la Mirande, IV.1951, fl., *SF 3766* (P). — Mont Grand Matoury,

4°52'N, 52°21'W, 12.X.1995, fr., *Poncy 993* (P). — "Cayenne", 31.XII.1955, fr., *Béna, SF (BAFOG) 1105* (P, U). — Paracou, 5°3'N, 52°80'W, 30.VI.2000, fl., *Pétronelli 221* (CAY, P). — Sinnamary, Piste de St-Elie, 13.V.1991, fl., *Sabatier 3570* (CAY, NY, P). — St-Laurent-du-Maroni, Route de l'Acarouany, km 1,1, 14.I.1957, fr., *SF 7650* (NY, P, U). — St-Laurent-du-Maroni, Route de Mana, 9.I.1945, fr., *SF 7145* (CAY, NY, P, U). — *Ibid.*, 4.IV.1956, fr., *SF 7437* (CAY, NY, P, U). **Guyana.** Bartica, Moraballi Creek, 1.X.1939, fr., *Fanshawe 259* (= *FD 2995*) (FDG, K, U). — Mazaruni, Puruni Riv., Takutu Creek, 4.XII.1944, fr., *Fanshawe 2136* (= *FD 4872*) (BRG, K, NY). — Potaro Riv., Mahdia Riv., 16.I.1943, fr., *Fanshawe 1038* (= *FD 3774*) (FDG, K).

OTHER MATERIAL EXAMINED. — **French Guiana.** Gourdonville, 18.VIII.1914, old infl., *Benoist 1551* (P, NY, U). — St-Laurent-du-Maroni, 14.IV.1961, fl., *Aubréville 253* (P). — *Ibid.*, Route de Mana, 7.I.1946, fr. immat., *SF 7139* (P, U). — *Ibid.*, 10.I.1956, fr. (carp. coll. not seen), *SF 7148* (P). — *Ibid.*, Route de Cayenne, trace de l'abbatis Bonnol, 22.VIII.1956, fl., *SF 7539* (CAY, NY, P). — *Ibid.*, 14.XI.1956, fr. (carp. coll. not seen), *SF 7598* (P, U). — *Ibid.*, Route de Charvein à l'Acarouany, 15.VII.1953, old fl., *SF 16M* (P, U). — *Ibid.*, Route de Cayenne, chantier FOSMA, scierie Margot, fr. immat., 1.XII.1953, *SF 116 M* (P, U). — Sinnamary, Piste de St-Elie, 5°20'N, 53°W, 27.VII.1991, fl., *Sabatier & Prévost 3652* (CAY, NY, P, U, US). — *Ibid.*, immat. inflorescence, *Sabatier & Prévost 3654* (CAY, NY, P, U, US). — *Ibid.*, same tree as the former, immature pod, *Sabatier & Prévost 3948* (CAY, P). — *Ibid.*, km 15.7, 5°17'N, 53°3'W, 21.VIII.2002, fl., *Prévost & Sabatier 4554* (CAY, K, NY, P).

DESCRIPTION

Middle-sized to large trees, up to 35 m high and 70 cm in diameter. Trunk irregular, without buttresses. Outer bark lenticellate, reddish brown. Branchlets lenticellate, even the youngest ones, the latter glabrous or brownish pubescent. Lenticels whitish, thin, longitudinally elongated.

Leaves paripinnately compound with 2 or 3 pairs of leaflets. Stipules linear, 2–3 mm long, caducous. Petiole and rachis not winged, cylindrical or flattened and slightly canaliculate, lignified and lenticellate on old leaves, glabrous or with sparse light hairs. Petiole 1–2(+) cm long, rachis segments approximately twice as long (2–4 cm). Foliar nectaries generally conspicuous, orbicular, the border thick, sessile or shortly stipitate (occasionally markedly stipitate), the distal one sometimes lacking. Petiolule reduced

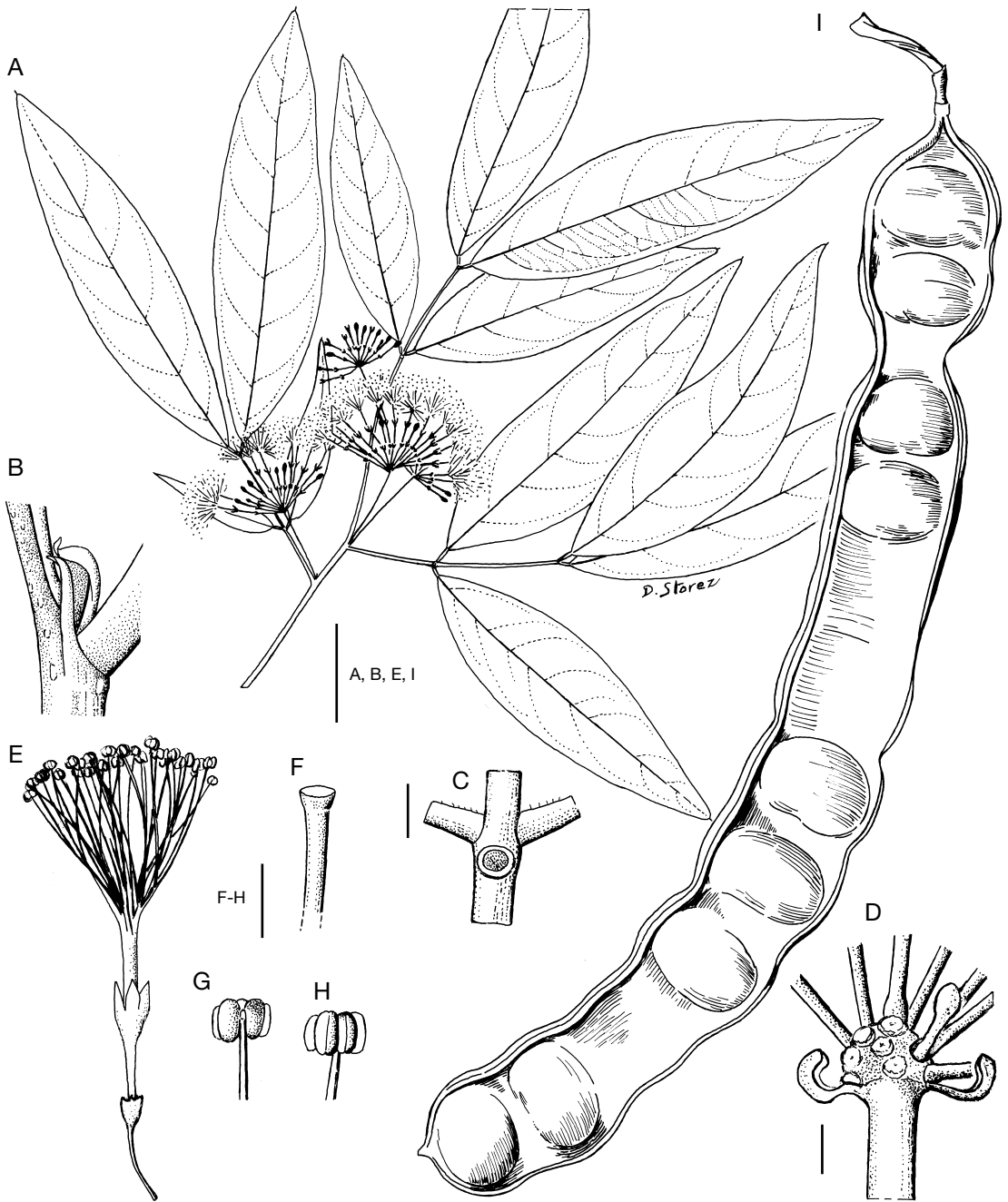


FIG. 1. — *Inga loubryana* Poncy: **A**, habit; **B**, stipules; **C**, foliar nectary; **D**, base of umbel; **E**, flower; **F**, stigma; **G**, **H**, stamens; **I**, pod. Scale bars: **A**, 2 cm; **B**, **C**, 2 mm; **D**, 1 mm; **E**, 4 mm; **F-H**, 0.5 mm; **I**, 3 cm. **A-H**, *Loubry 1135*; **I**, *Béna 1105*.

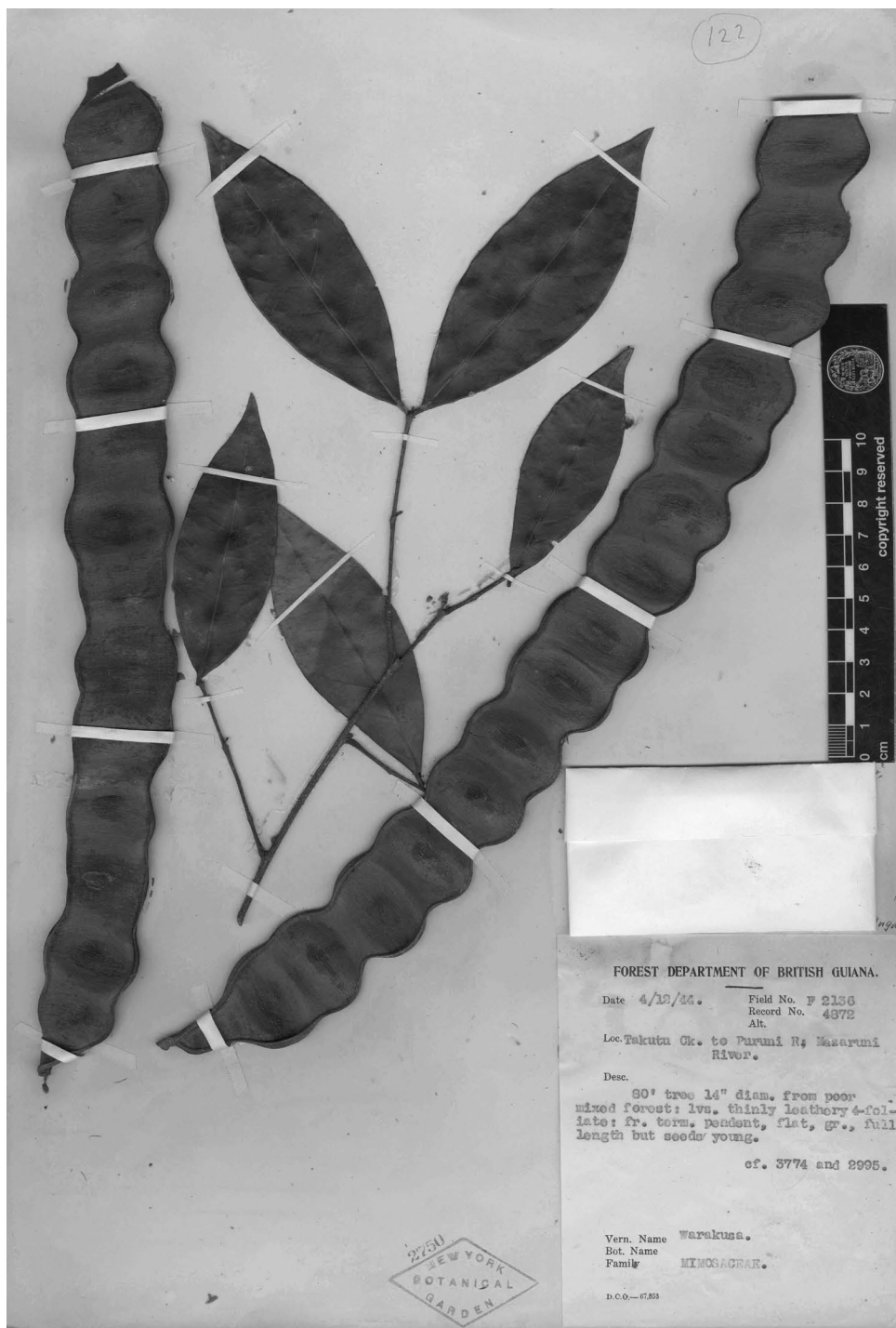


FIG. 2. — *Inga loubryana* Poncy, herbarium specimen Fanshawe 2136 (= FD 4872) (Guyana).

to pulvinus, black, 2-3 mm long. Leaflets elliptic, the proximal ones 5.5-8.5 × 2-3.5 cm, the distal ones (7.5-)9-13 × (2.5-)3-5(-6) cm, base cuneate to attenuate, apex acute, sometimes with a short and wide acumen (c. 6 × 5 mm), mucronate. Venation camptodromous. Blades variable in aspect, typically chartaceous, often discoloured, dark green above, paler and greyish below, the primary vein prominent on both faces. In some samples ("glossy inga"), inferior surface very smooth, glossy, looking densely and tiny dotted, the secondary veins not prominent.

Inflorescences umbellate, 1-3 axillary to adult leaves or young leaves of new growth units. Peduncle (1-)2-4(-5) cm long, glabrous or puberulous. Rachis globose or shortly clavate, c. 2 mm diam., 15-20-flowered, on some specimens with a linear bract 2-3 mm long near or at base of the umbel. Floral bracts scaly, curved, navicular or spatuliform, 1.5-2 mm long, puberulent, persistent. Pedicel slender, 3-6 mm long. Calyx narrowly campanulate, 1-1.5 mm long, the teeth inconspicuous, often irregular, puberulent. Corolla 5-6(-7) mm long, glabrous, funnellform. Staminal tube exerted up

to 3 mm from the corolla. Ovary glabrous, ovules 15-20, stigma narrowly cup-shaped.

Fruit a large and robust pod, up to 40 × 4 cm, 10-20-seeded, the valves shallowly transversally wrinkled, the sutures subligneous and thickened up to 5 mm at maturity, undulating around seeds. Seeds not contiguous, prominent at maturity, up to 2.5 × 1.5 cm.

ETYMOLOGY

The species is named in honour of Denis Loubry, who first collected excellent flowering materials at Piste de St-Elie.

DISTRIBUTION RANGE AND HABITAT

Dense evergreen rainforest in northern French Guiana and Guyana, on white sand or laterite. Not recorded from Suriname.

NOTE ABOUT THE MORPHOLOGICAL VARIATION WITHIN THE SPECIES

The present delimitation of *Inga loubryana* is mainly based on flower and fruit characters, that distinguish it from the close species *I. paraensis*, after the following key:

- Calyx < 2 mm, corolla ≤ 7 mm; staminal tube exerted; mature pod up to 40 × 4 cm, margins subligneous and thickened, undulating around seeds, those not contiguous *Inga loubryana*
- Calyx > 2 mm, corolla > 8 mm; staminal tube not exerted; mature pod up to 28 × 2.5 cm, straight, seeds contiguous *Inga paraensis*

The typical leaf of *I. loubryana* (mostly bijugate) differs from that of *I. paraensis* (mostly trijugate) by its less marked petiolule, its narrower leaflets, with a cuneate base, venation not prominent adaxially, the nerves prolongating marginally towards the apex.

As it is usually the case in the genus, and given the vegetative variability, sterile or poorly fertile materials (old inflorescences, or immature fruits) may be difficult to assign with certainty to a particular species. Awaiting more informative collections, we include here several specimens that show minor leaf variation against the typical series ("paratypes") and list them separately ("other material examined"). Some of them represent the form mentioned before as "inga vernissé" (= "glossy inga") after the particular texture of leaflets. This form remains poorly known,

so far the only few fertile specimens available have too young inflorescences or pods to be assigned with certainty to *I. loubryana*. However the tree proves to be locally abundant at the study site of Piste de St-Elie station, French Guiana. The difficulty to obtain fertile materials, in a plotted area where labelled trees are regularly visited, is informative about its phenology, suggesting that the species flowers very rarely. According to D. Loubry's phenological observations, the trees are deciduous.

Lastly, potentially distinct inflorescent characters are visible on the specimen *Prévost & Sabatier 4554*, but this collection has old wilted inflorescences.

The present provisional delimitation of *I. loubryana* therefore includes some morphological variation, further collections may confirm this

variability but they may lead us to recognize two distinct species.

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