

## NOTES ON THE GENUS INGA

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While working towards a revision of the genus Inga (Leguminosae), I found seven species and one variety as yet undescribed. An additional taxon has been elevated to specific rank while a tenth taxon has been elevated from forma to variety.

Inga is a large genus (ca. 400 species) restricted to the New World tropics. George Bentham (1845) divided the genus into five sections, the sections being based mainly on the indument of the flowers and the shape of the legume. All the new taxa and combinations belong to Section Inga Series Inga which is characterized by pubescent flowers and a terete, multisulcate legume. A revision of Section Inga Series Inga is forthcoming.

INGA EGLANDULOSA Elias, sp. nov.

Arbor parva, ramuli subteretes, dense brevi-pilosi. Foliola 3-5 juga, 8-18 cm longa, 4-8 cm lata, elliptica, rotunda ad basim, acuta ad brevi-acuminata, mucronata, parce pilosa supra praeter dense pilosa subter, opaca subter, subcoriacea, venae laterales 18-28 jugae, conspicuae; petiolulus 1.0-1.5 mm longus, dense pilosus; petiolus 2-3 cm longus, dense pilosus, exalatus; rhachis 7-14 cm longa, dense ferrugineo-pilosa, parte alata, ala 16-18 mm lata, obovata, parce pilosa supra, dense pilosa, conspicue venosa subter; stipulae caducae, 3-5 cm longae, late ovatae; glandulae rhachidis absentiae vel inconspicuae.

Inflorescentia spicata, 2-5 cm longa, singulatin ad aliquot, terminalis vel in superioribus axillis disposita, 18-40 floribus; bracteae caducae, 3-5 mm longae, acutae, dense villosae; gemmae ellipsoideae, acutae, dense villosae; pedunculi 1.5-2.5 cm longi, dense pilosi; calyx 10-12 mm longus, tubulosus ad subcampanulatus, dense villosus, sessilis, lobis 2-3 mm longis, acutis, dense villosis; corolla 18-20 mm longa, tubulosa, parce dilata ad apicem, dense sericea, lobis 4-6 mm longis, acutis, dense sericeis; tubus staminum exsertus 2-6 mm, filamenta alba, 2-6 mm longa, antherae dorsifixae, 0.25-0.50 mm longae; pistillum 3.5-4.5 cm longum, ovarium 2-3 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.

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Legumen subterete, 60-80 cm longum, 1.5-2.0 cm in diametro, sulcatum, dense brevi-pilosum.

This species bears a superficial resemblance to *I. codonantha* but can be distinguished from the latter species by the non-pedicellate flowers, partially winged rachis, and shorter corolla.

The type specimen was collected in Colombia at 950 m where it flowers in March. This species is known only from the type collection.

Type: Uribe 944, from Colombia.

Specimens cited: Colombia: Valle de Cauca: Ginebra, Uribe 944 (COL).

INGA ALATOCARPA Elias, sp. nov.

Arbor 5-10 m alta; rami teretes, glabri, parce lenticellati, ramuli subteres vel angulati, parce ferrugineo-villosi, parce lenticellati. Foliola 3-4 juga, 8-22 cm longa, 4-11 cm lata, late elliptica vel obovata, rotunda ad basim, brevi-acuminata ad acuta, glabrescentia ad parce hirtella supra et subter, subnitentia supra, opaca subter, subchartacea, laterales venae 18-36 jugae, parce conspicuae subter; petiolulus 3-4 mm longus, dense ferrugineo-villosus, nigrescens maturitate; petiolus 4-6 cm longus, parce villosus, exalatus, parce tumidus ad basim; rhachis 12-16 cm longa, parce ferrugineo-villosa, ex parte alata, ala 11-16 mm lata, oblonga ad elliptica, parce ferrugineo-villosa supra et subter; stipulae subpersistentes, 8-12 mm longae, cordatae, profunde striatae; glandulae rhachidis 2 mm in diametro, saepe contortae, sessiles, crassis marginibus.

Inflorescentia spicata, 3-5 cm longa, 2-4 per fasciculum, in superioribus axillis disposita, 24-40 floribus; bractee persistentes, 6-10 mm longae, lanceolatae vel anguste ovatae, parce villosae, striatae; gemmae usque ad 14 mm longae, oblongoideae, obtusae ad acutae, parce villosae; pedunculi 2-6 cm longi, villosi; calyx 13-16 mm longus, tubulosus, parce villosus, sessilis, striatus, lobis 1-2 mm longis, anguste ovatis, parce villosis; corolla 26-30 mm longa, tubulosa, parce dilata ad apicem, longo-sericea, lobis 5-7 mm longis, lanceolatis ad anguste ovatis dense longo-sericeis; tubus staminum inclusus; filamenta alba 5-6 cm longa; antherae non visae; pistillum 6-7 cm longum; ovarium 3 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.

Legumen tetragonum, 45-70 cm longum, 1.2-1.3 cm latum, sessile, sulcatum marginibus dilatatis, valvis conspicuis, 6-10 mm latis, dense villosum.

This species is known only from the type location. The length of the flowers and the cordate stipules distinguish this



new species from other members of Section Inga. Inga alatocarpa was placed in Series Inga because of the sulcate margins of the legumes. This species is possibly an intermediate between Series Inga and Series Tetragonae.

The specific epithet was chosen because of the distinctly winged margins of the legume.

Type: Little 6278, from Ecuador.

Specimens cited: Ecuador: Esmeraldas: San Lorenzo near Rio Nadadero, Little 6278 (F holotype, US isotype).

INGA VALLENSIS Elias, sp. nov.

Arbor; ramuli subteres vel angulati, dense ferrugineo-villosi. Foliola 4-6 juga, 6-16 cm longa, 2-7 cm lata, oblongo-elliptica vel elliptico-obovata, rotunda ad basim, obtusa vel acuta, mucronulata, pilosa supra praeter dense pilosa in venis, pilosa subter praeter dense pilosas venas, subnitentia supra, opaca subter, subcoriacea, laterales venae 10-16 jugae, conspicuae subter; petiolulus 1.5-2.0 mm longus, dense villosus; petiolus 2-3 cm longus, dense villosus, exalatus; rhachis 6-15 cm longa, dense villosa, alata, ala 5-8 mm lata, elliptica vel obovata, pilosa supra et subter, venae conspicuae subter; stipulae caducae, 4-5 mm longae, ovatae; glandulae rhachidis usque ad 1 mm in diametro, orbiculatae, sessiles cum marginibus angustis.

Inflorescentiae racemosae, 1.0-2.5 cm longae, productis singulatim vel geminatis, terminales vel in superioribus axillis dispositae, 10-18 floribus; bracteae caducae, 1-2 mm longae, ovato-lanceolatae; gemmae 4-8 mm longae, globoideae, rotundae, dense villosae; pedunculi 3-4 cm longi, dense villosi; calyx (excludus pedicellus) 8-10 mm longus, late campanulatus, dense villosus, pedicellatus, pedicellus 8-10 mm longus, lobis imparibus, 1.5-3.0 mm longis, acutis, dense villosis; corolla 22-25 mm longa, late tubulosa, dilata ad apicem, sericea, lobis 3-5 mm longis, acutis, sericeis; tubus staminum inclusus; filamenta viridi-alba, 5-7 cm longa, antherae dorsifixae, usque ad 0.75 mm longae; pistillum 4.5-5.5 cm longum, ovarium 2.5-4.0 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.

Legumen immaturum, terete, sulcatum, dense ferrugineo-villosum.

The type specimen was originally determined I. spuria forma racemaria by E. P. Killip. A comparison with the type of I. spuria forma racemaria showed the two to be distinct taxa.

Inga vallensis is easily distinguished from I. ingoides by its longer flowers.



Inga vallensis has been collected at altitudes of 1050-1100 m.

Type: Cuatrecasas 23072, from Colombia.

Specimens cited: Colombia: Valle de Cauca: Ansermanuevo, Cuatrecasas 23072 (F holotype, US isotype).

INGA EXALATA Elias, sp. nov.

Arbor 8-12 m alta; rami teretes, glabri; ramuli teretes vel angulati, dense ferrugineo-villosi, inconspicue lenticellati. Foliola 3-4 juga, 6-16 cm longa, 3-6 cm lata, elliptica vel elliptico-obovata, rotunda ad basim, acuta vel brevi-acuminata, mucronulata, pilosa supra praeter dense pilosa in venis, dense pilosa subter, subnitentia supra, obscura subter, subcoriacea, laterales venae 12-16 jugae, conspicuae subter; petiolulus 2-3 mm longus, dense ferrugineo-villosus; petiolus 1.5-3.5 cm longus, exalatus; rhachis 2-6 cm longa, dense ferrugineo-villosa, exalata; stipulae caducae, non visae; glandulae rhachidis praesentes vel absentes, 0.25-0.50 mm in diametro, orbiculatae, stipitatae, stipe usque ad 1.5 mm longo.

Inflorescentiae spicatae, 1.5-3.0 cm longae, in axillis superioribus dispositae, 14-26 floribus; bracteae caducae, 1-3 mm longae, ovatae, dense ferrugineo-villosae; gemmae rotundae, plerumque obtusae, dense villosae; pedunculi 2-4 cm longi, dense ferrugineo-villosi; calyx 10-14 mm longus, late tubulosus, sessilis, dense villosus; corolla 18-22 mm longa, dilata ad apicem, dense sericea; tubus staminum inclusus; filamenta 4-5 cm longa, antherae non visae; pistillum 4.5-5.5 cm longum, ovarium 2-3 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.

Legumen ignotum.

The presence of the tiny, stipitate, leaf-rachis glands could be easily overlooked. The glands along with the unwinged rachis distinguish this species.

This species is known only from the type collection.

Type: Brenes 3634, from Costa Rica.

Specimens cited: Costa Rica: Cartago: Jesus de San Ramon, Brenes 3634 (F).

INGA BOREALIS Elias, sp. nov.

Arbor 10 m alta; ramuli subteretes, dense ferrugineo-villosi, lenticellati. Foliola 3 juga, 6-14 cm longa, 2.5-7.5 cm lata, rotunda ad basim, acuta, mucronata, parce puberulenta supra praeter dense puberulentas venas, parce puberulenta vel



tomentosa subter, opaca supra et subter, laterales venae 12-16 jugae, conspicuae subter, petiolulus 2-3 mm longus, dense villosus; petiolus 2-3 cm longus, dense villosus, exalatus vel parte alatus, ala 4-6 mm lata, unpar; rhachis 4-6 cm longa, dense villosa, alata, ala 6-12 mm lata, obovata, parce puberula supra, tomentosa subter; stipulae caducae 2-3 mm longae, ovatae; glandulae rhachidis 2.0-2.5 mm in diametro, orbiculatae, sessiles, marginibus conspicuis.

Inflorescentiae spicatae, 2-4 cm longae, productis singulatim vel 2-4 per fasciculum, in superioribus axillis dispositae vel terminales, 14-28 floribus; bracteae oblanceolatae vel elliptico-oblanceolatae, 12-16 mm longae, persistentes, dense villosae; gemmae 4-12 mm longae, oblanceoideae, rotundae ad apicem, dense villosae; pedunculi 1-4 cm longi, dense villosi; calyx 8-11 mm longus, tubulosus, substriatus, dense villosus, sessilis, lobis 2-3 mm longis, anguste ovatis, dense villosis; corolla 18-22 mm longa, anguste tubulosa, dilata ad apicem, sericea, lobis 2-3 mm longis, anguste ovatis, sericeis; tubus staminum inclusus; filamenta alba, antherae usque ad 0.2 mm longae, dorsifixae; pistillum 5-6 cm longum, ovarium 2-3 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.

Legumen ignotum.

This species is known only from the type collection. Inga borealis resembles I. xalapensis in that the bracts are persistent. The oblanceolate bracts and longer corolla distinguish I. borealis from I. xalapensis.

The specific epithet was chosen because this taxon is on the northern-most range of the genus.

Type: King 4275, from Mexico.

Specimens cited: Mexico: San Luis Potosi: 2 miles W of Xilitia, King 4275 (NY holotype, US isotype).

INGA BREVITUBA Elias, sp. nov.

Arbor; ramuli valde angulati, ferrugineo-villosi, lenticellati. Foliola 3-4 juga, 8-18 cm longa, 4-8 cm lata, rotunda vel sub-obliqua ad basim, acuta, mucronata, ferrugineo-villosa supra, pilosa subter, venae dense ferrugineo-pilosae supra et subter, lamina subnitens supra, opaca subter, subcoriacea, laterales venae 12-18 jugae, conspicuae subter; petiolulus 2-3 mm longus, dense ferrugineo-villosus, exalatus; rhachis 6-12 cm longa, dense ferrugineo-villosa, alata, ala 7-15 mm lata, elliptica vel obovata, pilosa supra et subter; stipulae non visae; glandulae rhachidis 2-3 mm in diametro, orbiculatae, saepe contortae, sessiles, angustis marginibus.



Inflorescentiae spicatae, 2-4 cm longae, productis singulatim vel geminatis, in superioribus axillis dispositae, 40-70 floribus; bracteae caducae, 1-2 mm longae, ovatae, dense villosae; gemmae 3-6 mm longae, obovoideae, rotundae ad apicem, parce villosae; pedunculi 3.5-6.0 cm longi, dense ferrugineo-villosi; calyx 2.0-2.5 mm longus, campanulatus, parce villosus, sessilis, lobis 0.5 mm longis, ovatis, parce villosis; corolla 6-8 mm longa, tubulosa, dilata ad apicem, parce sericea; tubus staminum includus; filamenta 2.0-2.5 cm longa, antherae dorsifixae, 0.2 mm longae; pistillum 2.5-3.0 cm longum, plurisulcatum, glabrum, sessile, stylus filiformis, stigma capitatum.

Legumen ignotum.

The tiny, sparsely pubescent flowers readily distinguish this species from other species of this series.

Type: Buchtein 3778, from Bolivia.

Specimens cited: Bolivia: Nord Yungas: near Coroico, Buchtein 3778 (US holotype, GH isotype).

INGA CHOCOENSIS Killip ex Elias, sp. nov.

Arbor, cortex cinereus; rami glabri; ramuli teretes, dense ferrugineo-hirsuti. Foliola 2 (-3) juga, 12-30 cm longa, 6-15 cm lata, late elliptica vel late ovata, rotunda vel subcuneata ad basim, brevi-acuminata vel acuta, mucronata, parce pilosa supra, costa dense pilosa, lamina folioli supra basalem glandulam parvam ferens, pilosa subter, nitens supra, opaca subter, subcoriacea, laterales venae 14-20 jugae, conspicue subter; petiolulus 3-4 mm longus, dense ferrugineo-villosus; petiolus 3-4 cm longus, dense pilosus, ex parte alata vel alata, ala 4-8 (-12) mm lata, anguste oblonga vel subovata; rhachis 4-6 cm longa, dense pilosa, alata, ala 4-16 mm lata, obovata, parce pilosa supra et subter, venae conspicuae subter; stipulae caducae, 4-6 mm longae, ovatae, acutae vel brevi-acuminatae; glandulae rhachidis 1-2 mm in diametro, orbiculatae, subsessiles, marginibus conspicuis.

Inflorescentiae spicatae, 12-16 mm longae, productis singulatim vel geminatis, terminales vel in superioribus axillis dispositae, 14-20 floribus; bracteae caducae, 3.5-6.0 mm longae, lanceolatae vel anguste ovatae, sericeae; gemmae 3-7 mm longae, oblongae vel obovatae, obtusae vel acutae, parce pilosae; pedunculi 1-2 cm longi, dense pilosi; calyx 6-8 mm longus, subcampanulatus, dilatus parce ad apicem, parce pilosus, sessilis, lobis 2-4 mm longis, acutis, pilosis; corolla 14-17 mm longa, tubulosa vel dilata ad apicem, sericea, lobis 2-3 mm longis, acutis, sericeis; tubus staminum includus; filamenta alba, 4-5 cm longa, antherae dorsifixae, 0.2-0.5 mm longae; pistillum 4-5 cm longum, ovarium 2.5-3.0 mm longum, bisulcatum, glabrum, stylus filiformis, stigma capitatum.



Legumen subteres, 8-14 cm longum, 1.5-2.0 cm in diametro, sessile, valvis conspicuis, 8-14 mm latis, marginibus sulcatis, dense pilosis.

This species is easily distinguished from all other species of Series Inga by the branchlet and calyx pubescence.

Inga chocoensis has been collected at altitudes of 1-50 m where it occurs infrequently along river banks.

Type: Cuatrecasas 16372, from Colombia.

Specimens cited: Colombia: Choco: Rio San Juan, Palestina, Cuatrecasas 16913 (US). Valle del Cauca: Rio Calima, La Trojita, Cuatrecasas 16372 (COL holotype, F isotype); Rio Calima, between Aquaciaría and La Brea, Cuatrecasas 21169 (US); Rio Cajambre, Cuatrecasas 17643 (US); Rio Yurumanqui, Isla de Golondro and La Amarqura, Cuatrecasas 16035 (US); Rio Naya, Cuatrecasas 14319 (F, US); between El Aquacate and Quebrada de la Yuca, Cuatrecasas 16098 (F).

INGA COCLEENSIS Pittier var. MEGANTHA Elias, var. nov.

Differt ab var. cocleensis calyx 7-10 mm longus, corolla 15-20 mm longa.

This variety is different only in the larger flower size. The calyx in var. megantha is 7-10 mm long, while the corolla measures 15-20 mm long. This variety can be distinguished from I. multijuga by the sulcate legumes.

This variety extends the range of the species into Colombia. Previously I. cocleensis was limited to Guatemala, Nicaragua, and Panama. Both collections of the variety were made at altitudes of 1700-2100 m.

Type: Arbelaez & Cuatrecasas 6458, from Colombia.

Specimens cited: Colombia: El Valle: between Sevilla and Caicedonia, Arbelaez & Cuatrecasas 6458 (US holotype); north of Alban, Dugand & Jaramillo 3021 (US).

INGA MINUTULA (Schery) Elias, stat. nov.

Inga edulis var. minutula Schery, Ann. Mo. Bot. Gard. 37:209. 1950.

This species may be partially or completely winged. Other variations can be found in the shape of the calyx.

Several Colombian and Ecuadorian specimens have had the binomial I. megadenia applied to them by Killip; however, this name was never validly published. The small flower, large leaf-rachis glands, and partially to completely winged rachis place this taxon with the I. oerstediana complex rather than with



I. edulis. Inga cuatrecasasi, another herbarium name of Killip's but never validly published, is synonymous with I. minutula.

Type: Allen 968, from Panama.

Specimens cited:

Guatemala: Escuintla: near Barranco Hondo, Standley 63873 (A).  
El Salvador: La Libertad: near Comasagua, Carlson 206 (US).  
Honduras: Atlantida: vicinity of Tela, Standley 56617 (US).  
Costa Rica: Cartago: Tucurrique, Tonduz 12745 (US); Tres Rios, Leon 1235 (US).

Panama: Bocas Del Toro: Changuinola valley, Dunlap 582 (US, F). Darien: vicinity of El Real, Allen 968 (MO holotype, F, US isotypes). Panama: around Gorgona, Pittier 2696 (NY, F, GH). Canal Zone: Barro Colorado Island, Bangham 395 (US, A), vicinity of Gamboa, Allen 1972 (MO, GH).

Grenada: Annandale, Broadway 3353 (NY); Saint George, Broadway s. n. (GH).

Tobago: without exact locality, Broadway 4659 (MO).

Colombia: Antioquia: Cocorna, Daniel 1188 (US), 2276 (US); Fredonia, Uribe 725 (SIU); San Antonio de Pereira, Daniel 3880 (COL, F). Choco: Palestina, Cuatrecasas 16919 (US); bank of Rio San Juan, near Andagoya, Killip 35394 (US). Cundinamarca: Caparrapi, Garcia-Barriga 7699 (US), Haught 4268 (US). Norte de Santander: El Indio, Cuatrecasas 13131 (US). Valle de Cauca: El Prado, Cuatrecasas 14860 (US, F).

Venezuela: Federal District: around Caracas, Pittier 10425 (US); Macarao, Delgado 317 (US). Tovar: Morida, Alston 7048 (NY, US).

Ecuador: Guayas: Milagro, Hitchcock 20284 (US, GH). Manabi: Santa Domingo to Rio Quinde, Little 6198 (F, US).

Brazil: Ceara: Guarimiranga, Cutler 8156 (MO, NY, US).

INGA SPURIA var. RACEMARIA (Uribe) Elias, stat. nov.

Inga racemaria Uribe, *Caldasia* 3:355. 1945.

Inga spuria forma racemaria Uribe, *Caldasia* 5:82. 1948.

This variety differs from var. spuria in the long-pedicellate flowers and the tiny or obscure leaf-rachis glands. This variety is known only from Cali, Colombia.

Type: Uribe 964, from Colombia.

Specimens cited: Colombia: Valle de Cauca: Cali, Uribe 964 (COL holotype, US isotype).

#### Literature Cited

Bentham, George. 1845. Notes on Mimoseae. Hooker's Jour. Bot. 4:577-622.