New and interesting Chrysobalanaceae from Amazonia

ABSTRACT

In this paper the most interesting and recent collections made by the author in the Amazonian Brazil and by other collectors are discussed here in this addition to his monograph of the Neotropical members of the Chrysobalanaceae. Three new species are also described.

INTRODUCTION

Since the preparation of my monograph of the Neotropical members of the Chrysobalanaceae (Prance, 1972), I have made 136 further collections during a year of fieldwork in Amazonian Brazil in collaboration with the Instituto Nacional de Pesquisas da Amazônia. The most interesting of these recent collections as well as a few made by other collectors are discussed here in this first addition to the monograph, and 3 new species are described. Some of the collections cited are very large range extensions, particularly of species previously known only from around Manaus (Fig. 1). This is indicative of the need for further collections away from the population centers to fill in the many distribution gaps in our knowledge of the Amazon flora.

1. Licania Aubl.

Licania jimenezii Prance, sp. nov.

(Fig. 2)

Arbor 26 m alta, ramulis juvenilibus tomentellis mox glabris. Stipulæ caducæ (haud visæ). Folia alternata, petiolata, petiolo 15-20 mm longo, leviter canaliculato, breviter tomentello, versus basim cum glandulis duobus vel pluribus munito; laminae oblongo-ellipticae, 14-19 cm longae, 6-7.5 cm latae, apice in acuminem 10-18 mm longum contractae; basi subcuneatae, supra glabrae, subitus dense la­natae, profunde reticulatae; costa media supra impressa versus basim tomentella, subitus prominenti; costis secundariis 9-11 jugis supra planis subitus prominentibus. Flores circa 2.5 mm longi in paniculis terminalibus axillarisbusque dispositi, rachi ramisque to­mentellis. Bracteæ bracteolæque ovato-lancœlatae circa 0.6 mm longæ persistentes, pubescentes. Receptaculum campanulatum, extus tomentellum, intus tomentosum; pedicello circa 0.4 mm longo. Calycis-lobi 5, to­mentosi. Petala nulla. Stamina 7, unilateralia, inclusa, 3 grandes, 4 parviores steriles, filamen­tis glabris, liberae. Ovarium ad basim receptaculum insertum, lanato-pubescentes. Stylus e basi ovarii ortus, ad apicem lanatus. Fructus mihi ignoti.

Type: H. Jiménez-Saa 1549, Suriname, Fallawatra, Nickerie District, mesophytic forest, flowering November 1971 (holotype, NY; iso­type, LBB 14282).

Local name: Rode Kwepi (Suriname)

This species belongs to Licania subgenus Licania, section Licania. It is, however, most distinct not easily confused with any other species. The numerous axillary inflorescences, and the two types of stamens distinguish this species. The larger stamens are fertile, the smaller ones have well developed anthers but abortive pollen. L. jimenezii is probably closest to L. alba and L. robusta. It differs from L. alba in the much smaller bracteoles and flowers, the less conspicuous leaf reticulations, the longer petioles, and the stamens etc., and from L. robusta in the smaller flowers, the pubescent inflorescence, the granular petioles, the cadorous stipules, the impressed midrib etc.
Licania couepifolia Prance, Fl. Neotropica 9: 134. 1972.
Oldenburger, Norde & Schulz 1256, Suriname, Sipalwini area, 56°5' — 56° 15'W; 1°50' — 2°5' N, fruiting 1971, lowland tropical forest (NY, LBB).
This is the second collection of this most distinct species of Licania, which was first collected from Guyana in the Essequibo river basin. The Suriname material adds fruits for the first time. The young fruits are pyriform, 2.5 cm long, with a much wrinkled velutinous epicarp.

Licania kunthiana Hook. f. Mart. Fl. Bras. 14 (2): 16. 1867.
Maas et al. 12658, Brazil, Acre, Serra de Moa, flowering April 29, 1971.
This first collection of L. kunthiana from Acre, considerably extends to the southwest the known range of the widespread species.

Licania wurdackii Prance, Fl. Neotropica 9: 63. 1972
Prance et al. 15426, Brazil, Amazonas, Rio Uneixi, 2 km above mouth, flowering 15 October 1971.
This species was described from material collected in Venezuela and on the Rio Negro above Uaupés. Thus, the present collection extends the range considerably eastwards. The plant was a shrub of 3 m with numerous separate trunks, growing amongst rocks, and its habit is quite different from L. apetala to which it is most closely related.

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![Distribution map showing some range extensions from 1971 fieldwork.](image)

FIG. 1 — Distribution map showing some range extensions from 1971 fieldwork. •, • = Couepia elata Dacke; ○, ○ = Couepia longipendula Pilg.; △, △ = Hirtella rodriguesii Prance. The symbols with a line beneath represent the range extensions by 1971 collections.
FIG. 2 — *Licania jimenezii* (H. Jiménez-Saa 1349). A, habit, x 0.5; B, flower, x 13; C, flower section, x 13; D, leaf undersurface, x 2.
Licania urceolaris Hook. f., Mart. Fl. Bras. 14 (2): 15. 1867.

Prance et al. 11939, Brazil, Acre, Cruzeiro do Sul, Estrada Alemanha, fruiting April 15. 1971.

This is the first collection of this species from Acre.

2. Couepia Aubl.

Couepia elata Ducke, Archiv. Inst. Biol. Veg. Rio de Janeiro 2: 35. 1935.

Prance et al. 16943, Brazil, Acre, Cruzeiro do Sul, Estrada Alemanha, flowering April 15. 1971.

This species was previously known only by the many collections from the vicinity of Manaus. This new collection extends the known range considerably, see Fig. 1. The Acre collection has the same type of flaking bark which makes this species so easy to recognize in the field around Manaus.

Couepia glabra Prance, sp. nov. (Fig. 3)

Arbor 10 m alta, ramulis juvenilibus mox glabris. Stipulae circa 2 mm longae, lanceolatae membranaceae, caducae. Folia alternata petiolata, petiolo 8-12 mm longo, glabro, canellulato, rugoso, eglanduloso, laminae oblongae vel oblongo-lanceolatae, 11-21 cm longae, 4-7 cm latae, coriaceae, apice in acuminem 5-9 mm longum, plerumque curvatae contractae, basi subcuneatae, utrinque glabrae; costa media utrinque prominenti; costis secundariis 16-17 jugis, subtus prominentibus, supra prominulis vel planis. Flores in paniculis terminalibus axillaribusque 4. 5-9 cm longi dispositi vel raro in racemis dispositi, rachi ramisque sparse puberulis. Receptaculum cylindricoturbinate 15-20 mm longum, extus in alabastrum minute sparse puberulum mox glabrum, intus prope faucem infixa staminem pilis deflexis dense tomentosam, versus basim glabrum. Calycis-lobi 5, juvenili sparse puberuli mox glabri, marginibus ciliatis. Petala 5 glabra, caduca. Stamina circa 110, in orbem completum disposita, versus basim tomentosum, glabra. Ovarium ad faucem receptaculi insertum, pilosum. Stylus e basi ovarii ortus, versus basim sparse pilosus supra glabrus. Fructus mihi ignoti.

Type: Prance, D. Coêlho & Monteiro 14942. Brazil, Amazonas, Rio Cueiras just below mouth of Rio Brancoinho, flowering September 1971 (holotype, NY; isotypes, FHO, INPA).

Habitat: Forest on non-flooded ground.

Couepia glabra is quite unlike any of the species already described, but it is probably closest to C. williamsii from which it differs in the usually paniculate inflorescence, the larger leaves, the almost glabrous style, the glabrous underside of the leaves, as well as in a number of additional small characters.

The material available contains 4 inflorescences, and I was able to observe these closely in the field since the terminal ones are rather different from the axillary ones. The inflorescence branches are very short in both inflorescences and often bear only a single flower. In the axillary inflorescences the branches are sometimes much reduced giving a racemose appearance.

The leaves are also polymorphic since the apical ones are smaller and more oblong than the larger oblong-lanceolate leaves of the lower branches. Since I collected this species myself I was able to verify carefully this variation in the inflorescence and leaves, which is greater than in most species of Couepia.

Couepia krukovii Standl., Publ. Field Mus. Bot. 17: 250. 1937.

Prance et al. 16315, Brazil, Amazonas, Rio Purus between Redenção and Itaboca. This is the first collection since the Krukoff types. It extends the known range of this species from the basin of the Rio Madeira to that of the Rio Purus.

Couepia longipendula Pilger, Notizbl. Bot. Gart. Berlin 6: 141. 1914.

Prance et al. 16143, Brazil, Amazonas, Rio Curicuriari, foothills of Serra Curicuriari, flowering November 5, 1971: Prance et al. 16521, Brazil, Amazonas, Rio Cunhauá at Deni indian village, 6°43 S, 66°47 W, fruiting November 29, 1971.

This species was previously known only by the numerous collections from the vicinity of
FIG. 3 — *Conepia glabra* (Pronce et al. 14942). A, habit, x 0.5; B, flower, x 1; C, flower section, x 1.
Manaus. It is interesting that in fact it is obviously distributed in western Amazonia, as the collections cited above are from 2 widely separated localities well outside the previous known range of this species, see Fig. 1.

_Couepia maguirei_ Prance, Fl. Neotropica 9: 214. 1972.

(Fig. 4)

_Prance et al._ 16035, Brazil, Amazonas, Rio Negro at Camanaus, flowering November 2, 1971.

This species was described from material collected in Venezuela and higher up the Rio Negro in Brazil. The collection cited extends the known range slightly to the east down the Rio Negro, but it is mentioned mainly because I was able to observe the habitat and habit of _C. maguirei_ better. This species is confined to rocky river islands, and is underwater for much of the year. As well as the few inflorescences in the upper branches, the majority of flowers are borne on separate flower-branches coming from the main trunk between 20-100 cm above ground level. Hence, this species can only flower during the dry season at low water, and the rising water washes off and distributes the fruits.

3. **Hirtella L.**

_Hirtella excelsa_ Standl. ex Prance, Fl. Neotropica 9: 345. 1972.

_Maas et al._ PI3134, Brazil, Acre, Rio Jurua-Mirim, Aldeota between Porangaba and Papagaio, flowering May 18, 1971.

This collection matches well other collections of _H. excelsa_ except that it has a slightly branched inflorescence, and is therefore, not strictly racemose. The material with a branched inflorescence would key out to _H. tomentina_ in Prance (1972). _H. tomentina_ and _H. excelsa_ are certainly more closely related than previously indicated. These 2 species are distinct in the characters listed below:

| Leaf length | H. tomentina | H. excelsa |
|-------------|--------------|------------|
| width       | 10-15 cm     | 6-11.5 cm  |
| Petiole length | 3.5-5.5 cm | 2.3-4 cm |

Inflorescence Always branched Racemose, or rarely slightly branched

This demonstrates that the character of racemose versus paniculate inflorescence is not as reliable for the division of _Hirtella_ as indicated in some previous treatments of the genus. This was found in the preparation of Prance (1972), where several species were shown to have either racemose or paniculate inflorescences, e.g. _H. hebeclada_ Moric. ex DC., _H. paniculata_ Sw and _H. rodriguesii_ Prance.

_Hirtella rodriguesii_ Prance, Fl. Neotropica 9: 310. 1972.

_Prance et al._ 16141, Brazil, Amazonas, Rio Curicuriari, foothills of Serra Curicuriari, flowering November 5, 1971.

This species was previously collected in the vicinity of Manaus, and on the Rio Jurua. The new collection represents the first from the upper Rio Negro region of this recently described species.

_Hirtella subscandens_ Spruce ex Hook. _f_. Mart. Fl. Bras. 14 (2): 32. 1867.

_Prance et al._ 15604, Brazil, Amazonas, Rio Uneixi, Campo de Dondona, flowering October 26, 1971.

This species was previously known only from Amazonian Venezuela, where it has been collected in similar habitats to the Dondona Savanna.

4. **Acioa Aubl.**

_Acioa edulis_ Prance, sp. nov. (Fig. 5,6)

_Arbor 25 m alta, trunco cum anteridibus usque ad 0.5 m alta, ramulis juvenilibus glabris. Stipulae 5-7 mm longae, membranaceae, glabrae, caducae. Folia alternata petiolata, petiolo 1.5-2.5 cm longo, glabro, tereti, laminae oblongae, 7-17 cm longae, 4.7-12 cm latae, crasse coriaceae, basi rotundatae, apice in acuminem 2-6 mm longum contractae, utrince glabrae, subitus versus basim cum glandulis duobus munitae; costa media supra prominula subitus prominenti; costis secundariis 9-11 jugis, utrin-
FIG. 4 — Photos of Couepia maguirei (Prance et al. 16035) showing habit and habitat, on Rio Negro at Camanaus.
FIG. 5 — *Aecia edulis* (Prance et al. 14015, Krukoff 5822A). A, habit, x 0.5; B, germinating seedling showing cotyledons, x 0.5; C, fruit, x 0.5; D, transverse section of fruit, x 0.5; E, young inflorescence, x 0.5.
FIG. 6 — The seedling of *Acia edulis* (Prance et al. 14015).
que prominentibus; venis utrinque prominentibus. Flores (juveniles tantum visi) in paniculatis terminalibus subterminalibusque paucifloribus dispositi, rachi ramisque glabrecentibus. Bracteae bracteolaeque ovatae, membranaceae, extus glabrescentiae. Receptaculum campanulato-turbinatum (in alabastrum) intus glabrum cum cavo-paucum munitum. Calycis lobii 5, rotundati, glabri, extus cum glandulis duobus muniti, intus griseo-pubescenti. Petala 5, glabra. Stamina circa 2'. Drupa ellipsoidae, 6-7.5 cm longa, 4-5 cm lata, epicarpio glabro lenticellato; epicarpio tenue, 12-14 mm crasso; endocarpio tenue osseo fragilo, intus glabro embryone loculo complenti, eduli. Germinatio epigaea; foliis primis oppositis.

Type: Prance, Maas, Atchley et al. 14015, Brazil, Amazonas, Rio Ituxi, Boca do Curuquetê, fruiting July 9, 1971 (holotype, NY; isotypes, FHO, INPA, MG, US).

Additional material examined: W. Rodrigues & L. Coêlho 1408, Brazil, Amazonas, Rio Ituxi, Boca do Remanzinho, in bud, 1933 (NY).

Habitat: Forest on non-flooded ground (terra firme). It was a common tree in the forest around Boca de Curuquetê the type locality.

Local name: Castanha de cotia.

Uses: The fleshy cotyledons are edible and the fruits are gathered in large numbers by Brazilians in the Rio Ituxi region. The kernel is eaten raw or is crushed and added to their tapioca cakes (Beijú). It is also used to extract the oil which is used cooking and for making soap.

In Prance (1972), I indicated that the collection Rodrigues & Coêlho 1408, was possibly a new species, but I did not describe it from a single unicate collection with only half a fruit. During 1971 I was able to collect this species in another locality and to study it in the field as well as germinate the seedlings. The older collection, Krukoff 5882A, was studied for my monograph, and since it has only very young insect damaged flower buds it was set aside as a possible new species. With the additional new material it is now possible to describe it. This species is placed in the little collected genus Acioa with some hesitation since the mature flowers have not been examined and it could belong to Couepia. However, there is no doubt that it represents a hitherto undescribed species of Chrysobalanaceae.

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SUMÁRIO

As mais recentes e importantes coleções feitas pelo autor na Amazônia brasileira como, também, algumas realizadas por outros coletores, são comentadas neste primeiro suplemento de sua monografia sobre Chrysobalanaceae Neotropicais. Licania jimeñezii Prance, Couepia glabra Prance e Acioa edulis são aqui descritas como novas espécies.