The *Dorstenia* species (*Moraceae*) of north-western tropical America

by C.C. Berg and R.W.J. van Leuwen

*Institute for Systematic Botany, State University of Utrecht, Heidelbergraan 2, Utrecht, the Netherlands*

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**ABSTRACT**

Four new species of *Dorstenia* are described: *D. panamensis* C.C. Berg, *D. boliviana* C.C. Berg, *D. peruviana* C.C. Berg, and *D. belizensis* C.C. Berg. A list of and a key to the 21 *Dorstenia* species distinguished in north-western tropical America are presented, together with synonyms and distributions.

**INTRODUCTION**

The Neotropical representatives of *Dorstenia* occur in two well-defined areas. One group of species is found within the limits of the area of *D. brasiliensis* (sensu lato, incl. *D. tubicina* and *D. sabanensis*), mainly in Brazil. This group of species has been studied by Carauta and collaborators. The results of their studies have been compiled by Carauta (1978). The other group of species is found almost within the limits of the area of *D. contrajerva*. In order to arrive at a revision of the genus for the Neotropics this second group is here revised (for the Greater Antilles in collaboration of the present authors). Some of the results of this study (four new species, the species recognized, with their synonyms and distribution, and a key to them) are presented as a precursor to a part of the revision for Flora Neotropica, which will be prepared in cooperation with Dr. Carauta.

It should be noted that the continental species treated are clear-cut. However, the small-leaved species of the Greater Antilles (including the continental *D. belizensis*) constitute a rather complex group of closely related species. Delimitation on morphological characters proved to be far from easy. These
species are more narrowly circumscribed than the continental ones. Some of the
taxonomic decisions made for this group are somewhat questionable, partly due
to lack of sufficient material.

KEY TO THE DORSTENIA SPECIES OF THE ANDES REGION, CENTRAL AMERICA,
MEXICO, AND THE GREATER ANTILLES

1 Internodes elongate, to 1 cm long or longer.
2 Lamina peltate ......................................................... 16. D. belizensis
2 Lamina basally attached.
3 Petiole 3–20 cm long; lamina broadly ovate to cordiform ........ 10. D. contrajerva
3 Petiole at most 5 cm long; lamina elliptic to lanceolate, to subobovate or to
subovate.
4 Lamina at the base attenuate to decurrent with narrow wings along the
upper part of the petiole; Central America .......................... 7. D. choconiana
4 Lamina not attenuate to decurrent at the base.
5 Lamina scabrous above with long bristle-like hairs, apex almost
rounded to broadly (sub)acute .................. 8. D. lindeniana
5 Lamina smooth above, or, if scabrous, then with minute conical
hairs, apex acuminate to acute.
6 Stipules broadly triangular to ovate, often patent to deflexed.
7 Petiole ca. 1 cm long; lamina oblong, less than 5 cm broad;
Panamá ................................................................. 2. D. panamensis
7 Petiole 1–2.5 cm long; lamina elliptic to oblong, more than
5 cm broad; Columbia ............................. 3. D. colombiana
6 Stipules narrowly triangular to subulate, appressed.
8 Petiole 0.5–1.5 cm long; base of the lamina subobtuse to
subacute; receptacle, outside sparsely puberulous with re-
trorse hairs; Peru .............................................. 6. D. umbricola
8 Petiole 1–5 cm long; base of the lamina cordate to truncate,
if narrow and tending to subobtuse, then the receptacle out-
side (rather) densely hirtellous to puberulous.
9 Tertiary venation of the lamina prominent and conspic-
uous beneath; receptacle lobed; Venezuela 11. D. aristeguietae
9 Tertiary venation of the lamina almost plane (and
rather inconspicuous) beneath; receptacle subentire.
10 Receptacle sparsely puberulous with retrorse
hairs; Peru .............................................. 5. D. peruviana
10 10 Receptacle (rather) densely hirtellous; Bolivia
 ............................................................... 4. D. boliviana
1 Internodes, or at least some of them, short.
11 Receptacle excentrally attached, at least 0.5 cm in diameter.
12 Lamina oblong to elliptic (to ovate or suborbicular), at most 4 cm broad,
entire; Mexico ......................................................... 11. D. excentrica
12 Lamina cordiform to subsagittiform to elliptic or to broadly ovate, occa-
sionally less than 4 cm broad, mostly lobed to parted.
13 Receptacle elliptic to obovate or suborbicular; Mexico–Costa Rica
 ............................................................... 9. D. drakena
13 Receptacle quadrangular to irregularly lobed; Mexico to Peru and
Venezuela, West Indies ................................. 10. D. contrajerva
11 Receptacle (almost) centrally attached, or if excentrally, then the receptacle deeply
cup-shaped and less than 0.5 cm in diameter; Greater Antilles.
14 Lamina peltate.
15 Receptacle discoid, bracts (almost) in a single (sub)marginal row, all or most of them radiating and/or on short appendages.

16 Lamina with short hairs above; Jamaica ................... 14. D. jamaicensis
16 Lamina also with long hairs above; Cuba .............. 13. D. petraea
15 Receptacle cup-shaped to discoid, bracts in (2-)3-4 rows, appressed.

17 Stem (partly creeping) with many long internodes; lamina usually distinctly longer than broad; Haiti ........... 15. D. flagellifera
17 Stem with most internodes short; lamina mostly not distinctly longer than broad.

18 Receptacle deeply cup-shaped, bracts on and below the margin, not on the fringe*; Cuba .................. 24. D. roigii
18 Receptacle shallowly cup-shaped to discoid, bracts also on the fringe*.

19 Larger marginal bracts setulose; stigmas of equal length, 0.4-0.5 mm long; Cuba, Hispaniola ...................... 20. D. erythrandra
19 Larger marginal bracts not setulose; stigmas of unequal length, 0.1-0.2 mm long.

20 Receptacle cup-shaped to turbinate; lamina above with short, rather soft hairs; Cuba, Dominican Republic. 19. D. peltata
20 Receptacle discoid; lamina above with stiff hairs.

21 Stem 3-5 mm thick; lamina 0.5-5 cm long, above with rather long, stiff hairs; perianth (almost) glabrous; Cuba. 18. D. nummularia
21 Stem 4-8 mm thick; lamina (3-)5-10 cm long, above with short, stiff hairs; perianth with dense, minute, (sub)globose hairs; Cuba ................... 17. D. roigii

14 Lamina basally attached.

22 Receptacle discoid, bracts (almost) in a single (sub)marginal row, all or most of them radiating and/or on short appendages (or sometimes also minute appressed bracts on the fringe).

23 Lamina ovate to (sub)cordiform, to 7 cm long, mostly sub- acuminate to obtuse; endocarp body distinctly tuberculate; Jamaica, Haiti ......................... 12. D. fawcettii
23 Lamina cordiform to subreniform, to 2.2 cm long, apex mostly rounded; endocarp body (almost) smooth; Cuba .... .............................. 23. D. tuberosa

22 Receptacle cup-shaped to discoid, bracts in (2-)3-4 rows, appressed.

24 Receptacle deeply cup-shaped, bracts on and below the margin, not on the fringe; Cuba ..................... 24. D. roigana
24 Receptacle shallowly cup-shaped to discoid, bracts also on the fringe.

25 Plant on all parts only with minute hairs; Haiti ....

.................. 21. D. caimitensis

* The peripheral, non-flower bearing part of the flowering face.
25 Plant on several parts, at least on the lamina above
and/or the marginal bracts with long hairs.

26 Receptacle with entire margin, marginal bracts
distinct, the larger ones setulose; Cuba, His-
paniola .......................... 20. D. erythandra

26 Receptacle with crenulate margin, marginal
bracts obscure and not setulose; Cuba ........

........................................ 22. D. crenulata

(1954).
Distribution: Venezuela (Aragua, Distrito Federal).

2. Dorstenia panamensis C.C. Berg spec. nov. (Fig. 1).
Herba ad 25 cm alta; caulis internodiis longis. Lamina oblonga, 5.5–11 cm
longa, 2.5–4.5 cm alta, apcie acuminata vel subacuta, basi rotundata vel
cordata, facie superiore glabra, inferiore scabridula; venae laterales pro latere
10–15; petiolus circ. 1 cm longus; stipulae late triangulares vel ovatae, ad
0.7 cm longae, deinde patentes vel deflexae. Inflorescentia viridis, pedunculo
0.5–3.5 cm longo, receptaculo centraliter affixo, discoideo vel late turbinato,
plus minusve irregulariter lobato vel suborbiculari, diam. 0.5–1.5 cm; bracteae
plus minusve biseriatae; flores staminati inter pistillatos dispersi; tepala
staminaque dua.

Fig. 1. Dorstenia panamensis. From Berg, Maas & Dressler 415.
Herb up to ca. 25 cm tall; stem 3–4 mm thick, densely hirtellous to hirsute, with uncinate and curved hairs; internodes 0.5–2 cm long. Leaves in spirals; lamina oblong, 5.5–11 cm long, 2.5–4.5 cm broad, chartaceous, apex acuminate to subacute, base (narrowly) rounded to cordate, margin repand to more or less distinctly crenate; upper surface smooth and glabrous, lower surface scabridulous, on the veins puberulous to hirtellous; lateral veins 10–15 pairs, loop-connected, midvein slightly impressed above, venation prominent beneath; petiole ca. 1 cm long, hirtellous to hirsute; stipules broadly triangular to ovate, up to 0.7 cm long, faintly plurinervate, acute to subacuminate, sparsely puberulous, on older parts of the stem mostly patent to deflexed. Inflorescences green; peduncle 0.5–3.5 cm long, puberulous with retrorse uncinate hairs; receptacle centrally attached, discoid to broadly turbinate, more or less irregularly lobed to suborbicular, 0.5–1.5 cm in diameter, outside puberulous with retrorse uncinate hairs; bracts in ca. 2 rows on and below the margin, or also on the fringe, broadly ovate to semi-circular, up to 2 mm long, appressed, almost glabrous; staminate flowers among the pistillate ones, tepals 2, stamens 2, filament shorter than the perianth; stigmas equal or unequal in length, 0.2–0.3 mm long, white; endocarp body tuberculate.

Typus: *Berg, Maas & Dressler* 415, Panamá, Colón, Río Boquerón (holo-U; iso- K, MO, NY. PMA, RB).

Additional collection: *Dressler* 4698, Panamá, Colón, Río Boquerón, 6–8 km upstream from Peluca (PMA).

This new species appears to be related to *C. colombiana*.


Distribution: Colombia (El Valle).

4. **Dorstenia boliviana** C.C. Berg spec. nov. (Fig. 2).

Herba, ut videtur, ad 50 cm alta; caulis internodiis longis. Lamina oblonga vel subobovata vel lanceolata, 13–18 cm longa, 4–5.5 cm lata, acuminata vel subacuta, basi (anguste) cordata vel subcordata, facie superiore scabridula vel laevi, inferiore scabridula; venae laterales pro latere 13–18; petiolum 2.5–5 cm longum; stipulae fere subulatae, ad 0.8 cm longae. Inflorescentia pedunculo 5–7 cm longo, receptaculo excentrice affixo, subdiscoideo, elliptico, circ. 3.5–4 cm longo.

Herb probably up to 50 cm tall; stem 3–4.5 mm thick, hirsute to hirtellous with uncinate and straight hairs; internodes 1–2 cm long. Leaves in spirals; lamina oblong to subobovate or to lanceolate, 13–18 cm long, 4–5.5 cm broad, chartaceous, apex acuminate to subacute, base (narrowly) cordate to subcordate, margin subentire to faintly crenate; upper surface smooth and almost glabrous, lower surface scabridulous, puberulous on the (main) veins; lateral veins 13–18 pairs, loop-connected; petiole 2.3–5 cm long, puberulous to

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hirtellous with more or less retrorse, uncinate and straight hairs; stipules almost subulate, up to 0.8 cm long, uninervate, puberulous. Inflorescences on minute short-shoots with reduced stipules; peduncle 5–7 cm long, rather densely puberulous to hirtellous, mainly with uncinate hairs; receptacle excentrally attached, almost discoid, elliptic, ca. 3.5–4 cm long, outside (rather) densely puberulous to hirtellous, mainly with uncinate hairs, margin subentire(?). (The condition of the material did not allow further examination of the inflorescence).

Typus: Buchtien 1948, Bolivia, La Paz, Charopampa, near Mapiri (US).

This new species shows points of resemblance to D. aristeguietae from Venezuela.

Fig. 2. Dorstenia boliviana. From Buchtien 1948.
5. *Dorstenia peruviana* C.C. Berg spec. nov. (Fig. 3).

Herba ad 80 cm alta; caulis internodiis longis. Lamina oblonga vel subobovata, 6–20 cm longa, 2–7 cm lata, subacuta ad acuminata, basi cordata (vel obtusa), utraque facie scabridula; venae laterales pro latere 10–12; petiolus 3–5 cm longus; stipulae anguste triangulares vel subulatae, ad 0.5 cm longae. Inflorescentia viridis; pedunculus 1.5–4 cm longus; receptaculum centraliter affixum, late turbinatum vel discoideum, (sub)orbiculare, diam. 1.5–2 cm; bracteae circ. 3-seriatae; flores staminati inter pistillatos dispersi; tepala staminaque dua.

Herb up to 80 cm tall; stem 3–4 mm thick, sparsely, minutely and more or less retrorsely puberulous; internodes 1–2.5 cm long. Leaves in spirals; lamina oblong to subobovate, 6–20 cm long, 2–7 cm broad, chartaceous, apex subacute to acuminate, base subcordate to cordate, sometimes almost obtuse,

![Fig. 3. Dorstenia peruviana. From Mecia 8303.](image-url)
often more or less inequilateral, margin subentire to repand or (coarsely) crenate; upper surface scabridulous, lower surface scabriculous, on the veins sparsely and minutely puberulous with straight and uncinate hairs; lateral veins 10–12 pairs, loop-connected; petiole 3–5 cm long, minutely and retrorsely puberulous; stipules (narrowly) triangular to subulate, up to 0.5 cm long, uninervate, minutely puberulous. Inflorescences yellowish-green, on minute short-shoots with reduced stipules; peduncle 1.5–4 cm long, sparsely and minutely puberulous; receptacle (almost) centrally attached, broadly turbinate to almost discoid (passing more or less abruptly into the peduncle), (sub)orbicular, 1.5–2 cm in diameter, outside minutely appressed-puberulous, margin lobed to subentire; fringe ca. 0.5 mm broad; bracts in ca. 3 rows, on and below the margin and on the fringe, ovate to triangular or to semi-circular, up to 0.7 mm long, appressed or sometimes more or less radiating, sparsely puberulous; staminate flowers mainly peripheral, a few among the pistillate flowers, tepals 2, stamens 2, filament longer than the perianth; stigmas almost equal in length, 0.4–0.5 mm long; endocarp body tuberculat.


This species shows many similarities to D. choconiana from Costa Rica, Honduras, and Guatemala.


Distribution: Haiti, Jamaica.

Distribution: Cuba (Oriente).

Distribution: Jamaica (Manchester).

Synonym: *D. hotteana* Urban & Ekman  
Distribution: Haiti.

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**Fig. 4. Dorstenia belizensis. From Proctor 35982.**
16. **Dorstenia belizensis** C.C. Berg spec. nov. (Fig. 4).

Herba plus minusve procumbens; caulis internodiis longis. Lamina peltata, elliptica vel oblonga vel (sub)obovata vel suborbicularis, 1.5–6 cm longa, 0.8–2.3 cm lata, apice basique rotundata, facie superiore puberula, inferiore hirtella vel subtomentosa, nervatura pinnata, venis lateralis pro latere 4–6; petiolus 1.5–7 cm longus; stipulae triangulares vel subulatae, ad 0.2 cm longae. Inflorescentiae virides, facie florifera deorsum spectante; pedunculus 1–2.5 cm longus; receptaculum subcentraliter affixum, subdiscoideum, suborbiculare, diam. 0.5–0.8 cm; bracteae biseriatae; flores staminati inter pistillatos dispersi; tepala staminisque dua; corpus endocarpii tuberculatum.

Herb, more or less procumbent; stem ca. 2 mm thick, puberulous to hirtellous with straight hairs; internodes 0.5–1 cm long. Leaves in spirals; lamina peltate, elliptic to oblong or to (sub)obovate or sometimes suborbicular, 1.5–6 cm long, 0.8–3.3 cm broad, firmly chartaceous, often variegated, apex rounded, sometimes mucronulate, base rounded (to emarginate), margin subentire to irregularly crenate to denticulate; upper surface puberulous, scabridulous, lower surface hirtellous to subtomentose; lateral veins 4–6, more or less distinctly loop-connected, venation rather prominent beneath; petiole 1.5–7 cm long, hirtellous to puberulous; stipules narrowly triangular to almost subulate, 1.5–2 mm long, uninnervate, puberulous. Inflorescences greenish, with the flowering face facing downwards; peduncle 1–2.5 cm long, puberulous; receptacle almost centrally attached, discoid to broadly turbinate, suborbicular, 0.5–0.8 cm in diameter, outside (sparsely) puberulous; fringe to ca. 0.3 mm broad; bracts in ca. 3 rows, on the margin and on the fringe, ovate to triangular, up to 0.5 mm long, appressed, puberulous; staminate flowers among the pistillate ones, tepals 2, stamens, 2, filament shorter than the perianth; stigmas unequal in length, 0.1–0.2 mm long; endocarp body distinctly tuberculat.

Typus: *Proctor 35982*, Belize, Toledo, near Sapote Camp, ca. 10 km W. of Medina bank (holo- IJ; iso- U).

*D. belizensis* is a distinct species within a group of otherwise Antillean species with peltate leaves comprising *D. roigii*, *D. nummularia*, *D. flagellifera*, and *D. peltata*.

Distribution: Cuba (Pinar del Rio).

Synonym: *D. ekmanii* Urban
Distribution: Cuba (Las Villas).

19. **Dorstenia peltata** Sprengel, Neue Entdeck. 3: 22 (1822).
Synonym: *D. crassipes* Grisebach
Distribution: Cuba (Oriente), Dominican Republic.

20 *Dorstenia erythrandra* Grisebach, Cat. Pl. Cuben. 58 (1866).
Distribution: Cuba (Oriente), Dominican Republic, Haiti.

Synonym: *D. asperifolia* Rossberg
Distribution: Haiti.

Distribution: Cuba (Oriente).

Distribution: Cuba (Oriente).

Synonym: *D. tricolor* Urban & Ekman
Distribution: Cuba (Oriente).

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REFERENCE