Harpalyce Moc. & Sessé ex DC.

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This treatment is composed of the following taxa: *Harpalyce*, *Harpalyce brasiliana*, *Harpalyce correntina*, *Harpalyce hilariana*, *Harpalyce lanata*, *Harpalyce lepidota*, *Harpalyce macedoi*, *Harpalyce magnibracteata*, *Harpalyce minor*, *Harpalyce parvifolia*, *Harpalyce riparia*, *Harpalyce robusta*, *Harpalyce speciosa*, *Harpalyce tombadorensis*.

HOW TO CITE

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DESCRIPTION

Shrubs or medium-sized tree; branches and leaves covered by peltate multicellular glandular trichomes. **Stipules** caducous or persistent, linear, triangular or deltoid. **Leaves** alternate, imparipinnate; rachis with colleters at the base of the pulvinules; **leaflets** (1–)5–35(–43), opposite or subopposite, rarely alternate in the same branches of sterile individuals. **Inflorescence** a raceme, panicle or subumbelliform; bracts and bracteoles caducous or persistent; flower bud acute towards the apex. **Flowers** resupinate, papilionate, bilaterally symmetrical; calyx strongly bilabiate, divided in vexillar and carinal lips; petals orange, to red or pinkish, the standard petal orbicular to suborbicular, ovate, obovate or oblate, wing petals obovate, oblong-spatulate to oblong-obovate, keel petals oblong-falcate and contorted rightward; stamens 10, monadelphous, joined in a single tube, incurved, filaments free at the apex, anthers dimorphic, alternately long, and short dorsifixed, oblong to ovate-oblong, apex rounded; gynoecium with ovary sessile, oblong, oblong-linear or ovate, 6–20-ovulate, glabrous, stigma capitate, nectariferous disc. **Fruit** a laterally compressed and elastically dehiscent legume, oblong in outline, base attenuate, cuneate, retuse rounded to oblique, margins straight, the valves mostly coriaceous, seed chambers with septa delimiting the seeds. **Seeds** 6–16, ovate, oblong, testa brownish to red-brown.

COMMENTS

Harpalyce includes about 35 species of trees and shrubs with ecological predilection to seasonally dry tropical forests, savannas, and highland rupestrian grasslands (Arroyo 1976; Ross & Crisp 2005; São-Mateus et al. 2018). Molecular phylogenetic studies have supported the monophyly of the genus within tribe Brongniartieae, as sister to a clade comprised of the monospecific genera *Amphiodon* from Amazonian lowland rain forests and *Tabaroa* from the Caatinga seasonally dry woodlands (Queiroz et al. 2010, 2017; Cardoso et al. 2012, 2017; Meireles et al. 2014; LPWG 2017; São-Mateus et al., unpubl. data). *Harpalyce* can be readily differentiated from the remaining neotropical genera of Brongniartieae by a combination of peltate multicellular glandular trichomes that cover the leaf branches, imparipinnate leaves with opposite to subopposite leaflets, flower buds mostly falcate, flowers with strongly bilabiate calyx (vexillar and carinal lips), dimorphic anthers, internally septate and laterally compressed pods, and strophiolate seeds (Arroyo 1976; São-Mateus et al. 2018).

Life Form
Shrub, Subshrub

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Caatinga, Central Brazilian Savanna

Vegetation Types
Grassland, Highland Rocky Field, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest, Rock outcrop vegetation

Geographic Distribution
Confirmed ocurrences
North (Pará, Tocantins)
Northeast (Bahia, Ceará, Maranhão, Paraíba, Piauí, Rio Grande do Norte)
Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)
Southeast (Minas Gerais)

IDENTIFICATION KEY

1. Flowers 2–3.5 cm long ……..……..…… 2
1. Flowers less than 2 cm long ……..……. 10

2. Bracts 1.2–2.3 cm long, leaf-like, suborbicular to widely ovate, amplexicaul, the base strongly auriculate and with superimposed lobes ……..……. ***H. magnibracteata***
2. Bracts less than 0.9 cm long, linear, triangular, deltoid or oblong, not amplexicaul, the base truncate …….. 3

3. Stipules equal or larger than 4 mm long, linear to linear-lanceolate ……...…….. 4
3. Stipules # 4 mm long, triangular or deltoid ……..…. 6

4. Terminal branches usually in zig-zag branching pattern, densely wooly with cinereous hairs; leaves 19–35-foliolate, petiole 0.2–0.4 cm long; leaflets 1–1.9 × 0.2–0.3(–0.6) cm; umbel-like inflorescence up to 3 cm long; petals dark red; bracteoles exceeding one half the calyx length ……..……. ***H. lanata***
4. Terminal branches straight, tomentose to villous with golden or ferruginous hairs; leaves 5–9-foliolate, petiole 1.5–2.5 cm long; leaflets 3–5.5 × 1.3–2.3 cm; inflorescence raceme or panicle more than 4 cm long; petals red or orange; bracteoles smaller than half the calyx length ……..…… 5

5. Stipules 8–10 mm long; leaflets plane, apex acute-mucronate to rounded-mucronate, pubescent adaxially, reticulodromous; bracteoles 7–9 × 2 mm long, narrowly triangular; calyx outer surface villous; legume with valves strongly coarsely rugose-reticulate …….. ***H. robusta***
5. Stipules up to 4 mm long; leaflets revolute, apex strongly attenuate-apiculate, glabrous adaxially, brochidodromous; bracteoles 1.5–2 × 0.2 mm long, linear-triangular; calyx outer surface tomentose; legume with valves slightly reticulate ….……..…… ***H. tombadorensis***

6. Leaflets with reticulodromous venation, base cordate ……..…… 7
6. Leaflets camptodromous or eucamptodromous venation, base rounded …….……. 9

7. Leaflets less than 3 cm wide, predominantly widely oblong to oval-lanceolate in the lateral leaflets and obelliptic in the terminal leaflet; inflorescence smaller than or as large as the subtending leaf …….. ***H. correntina***
7. Leaflets 4–7.5 cm wide, usually widely ovate in the lateral and terminal leaflets; inflorescence longer than the subtending leaf ……..…… 8

8. Branches, rachis, leaflets, and inflorescence axes with ferruginous hairs; petioles up to

1.8 cm long; leaflets plane; inflorescence 10-flowered ….……. ***H. hilariana***
8. Branches, rachis, leaflets and inflorescence axes with cinereous hairs; petioles 3–4 cm long; leaflets conduplicate; inflorescence 30–100-flowered ..…… ***H. speciosa***

9. Branches, rachis and inflorescence axes tomentose to velutinous with ferruginous to yellowish hairs; leaflets chartaceous, densely tomentose, velutinous or sericeous on both surfaces; inflorescence often bearing a 1–3-foliolate leaf at the base .……. ***H. brasiliana***
9. Branches, rachis and inflorescence axes pubescent-grayish; leaflets subcoriaceous, puberulous to glabrous adaxially, densely pubescent beneath; inflorescence never with an axillary leaf …… ***H. macedoi***

10. Leaflets chartaceous; bracts up to 2 mm long, linear, caducous …… 11
10. Leaflets subcoriaceous or coriaceous; bracts mostly persistent, larger than 6 mm long, ovate-oblong to oblong ……..…… 12

11. Leaflets sericeous abaxially, with ferruginous hairs; calyx carinal lip ovate; petals dark orange ……..……. ***H. minor***
11. Leaflets villous with golden to fulvous hairs beneath; calyx carinal lip triangular-lanceolate; petals red to atropurpureous ……..……. ***H. riparia***

12. Branches with straight pattern; leaves (3–)7–11(–13)-foliolate; leaflets narrowly elliptic to elliptic-lanceolate, apex acute to acute-mucronate; bracteoles smaller than half the calyx length; standard petal ovate ……..……. ***H. lepidota***
12. Branches with a zig-zag pattern; leaves 19–35(–43)-foliolate; leaflets oblong, oblong-elliptic or obovate, apex rounded to obtuse; bracteoles exceeding half the calyx length; standard petal suborbicular ……..……. ***H. parvifolia***

FIELD IMAGES / ILLUSTRATIONS

Figure 1: *Harpalyce* Moc. & Sessé ex DC.



Figure 2: *Harpalyce* Moc. & Sessé ex DC.



Figure 3: *Harpalyce* Moc. & Sessé ex DC.

REFERENCE

Arroyo, M.T.K. 1976. The systematics of the legume genus *Harpalyce* (Leguminosae: Lotoideae). *Memoirs of New York Botanical Garden* 26: 1–80.
Cardoso, D., Queiroz, L.P., Pennington, R.T., Lima, H.C., Fonty, E., Wojciechowski, M.F. & Lavin, M. 2012. Revisiting the phylogeny of papilionoid legumes: New insights from comprehensively sampled early-branching lineages. *American Journal of Botany* 99: 1991–2013.
Cardoso, D., Pennington, R.T., Queiroz, L.P., Boatwright, J.S., Van Wyk, B.E., Wojciechowski, M.F. & Lavin, M. 2013. Reconstructing the deep-branching relationships of the papilionoid legumes. *South African Journal of Botany* 89: 58–75.
Cardoso, D., Harris, D.J., Wieringa, J.J., São-Mateus, W.M.B., Batalha-Filho, H., Torke, B.M., Prenner, G. & Queiroz, L.P. 2017. A molecular-dated phylogeny and biogeography of the monotypic legume genus *Haplormosia*, a missing African branch of the otherwise American-Australian Brongniartieae clade. *Molecular Phylogenetics and Evolution* 107: 431–442.
LPWG [The Legume Phylogeny Working Group]. 2017. A new subfamily classification of the Leguminosae based on a taxonomically comprehensive phylogeny. *Taxon* 66: 44–77.
Meireles, J.E., Azevedo-Tozzi, A.M.G. & Lavin, M. 2014. A phylogenetic analysis of molecular and morphological data reveals a paraphyletic *Poecilanthe* (Leguminosae, Papilionoideae). *Systematic Botany* 39: 1142–1149.
Queiroz, L.P., Lewis, G.P. & Wojciechowski, M.F. 2010. *Tabaroa*, a new genus of Leguminosae tribe Brongniartieae from Brazil. *Kew Bulletin* 65: 189–203.
Queiroz, L.P., São-Mateus, W., Delgado-Salinas, A., Torke, B.M., Lewis, G.P., Dorado, O., Ardley, J.K., Wojciechowski, M.F. & Cardoso, D.. 2017. A molecular phylogeny reveals the Cuban enigmatic genus *Behaimia* as a new piece in the Brongniartieae puzzle of papilionoid legumes. *Molecular Phylogenetics and Evolution* 109: 191–202.

Ross, H. & Crisp, M.D. 2005. Brongniartieae. Pp. 253–259 in *Legumes of the World*, eds. G. Lewis, B. Schrire, B. Mackinder, and M. Lock. Richmond, UK: Royal Botanic Gardens, Kew.
São-Mateus, W.M.B., Queiroz, L.P., Jardim, J.G. & Cardoso, D.B.O.S. 2018. *Harpalyce riparia* (Leguminosae, Papilionoideae), a new species from the campos rupestres of the Chapada Diamantina in Bahia, Brazil. *Systematic Botany* 43: 206–211.

Harpalyce brasiliana Benth.

This treatment is composed of the following taxa: *Harpalyce brasiliana*, .

Has as synonym
homotype *Harpalyce brasiliana* Benth. var. *brasiliana*
heterotypic *Harpalyce brasiliana* var. *sericea* Arroyo

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** less than 13/more than 15; **leaflet size** bigger than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** panicle; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** usually more than 12.

ADDITIONAL DESCRIPTION

Shrub 1–3 m tall, branches and leaves tomentose, velutinous to velutinous-sericeous, with ferruginous to yellowish, long, erect or adpressed hairs. **Stipules** 1–3 × 1–1.5 mm, triangular, persistent. **Leaves** 5–13 cm long, (3–)9–21-foliolate; short-petiolate, the petioles measuring petiole 0.2–1 cm long, cylindrical; leaflets 1.8–6 × 0.8–2.3 cm, chartaceous, plane, oblong to ovate-oblong, base rounded, apex retuse to obtuse, secondary veins 6–10 pairs, conspicuous, camptodromous, margins plane. **Inflorescence** 5–15 cm long, 10–15-flowered, axillary racemes or panicles, mostly longer than the subtending leaf, with a subtending 1–3-foliolate leaf at the base; bracts ca. 3 × 0.5 mm, linear, base truncate, ferruginous-tomentose, early caducous; bracteoles 4–6 × 0.5 mm, smaller than half the length of the calyx, linear, attached at the base of the calyx, caducous. **Flower** 2.8–3.5 cm long; petals light red, salmon to light orange. **Legume** 6–8 × 1.3–1.5 cm, base attenuate, black when mature, slightly reticulated. **Seeds** 12–16, 5–8 × 3–4 mm, oblong.

COMMENTS

Harpalyce brasiliana is the most widespread among Brazilian species of *Harpalyce*. It occurs in lowland to highland savannas, mainly in the Central Brazilian plateau but also along the Espinhaço range. it can be recognized by the combination of branches covered by tomentose or velutinous to sericeous, ferruginous to yellowish indumentum, leaf petioles less than 1 cm long, chartaceous leaflets, inflorescence always with a subtending 1–3-foliolate leaf at the base, flowers larger than 2.8 cm long, and pods with many seeds (12–16 seeds vs. 6–12 seeds in all other species).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Not endemic to Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
North (Pará, Tocantins)
Northeast (Bahia, Ceará, Maranhão, Paraíba, Piauí, Rio Grande do Norte)

Central-west (Distrito Federal, Goiás, Mato Grosso do Sul, Mato Grosso)
Southeast (Minas Gerais)

HERBARIUM MATERIAL

D.B.O.S. Cardoso, 2510, MO (MO2484023), Goiás
J.A. Ratter, 2124, K, (K000892974), Mato Grosso
H.S. Irwin, 31434, MO (MO1624419), Bahia

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce brasiliana* Benth.



Figure 2: *Harpalyce brasiliana* Benth.



Figure 3: *Harpalyce brasiliana* Benth.



Figure 4: *Harpalyce brasiliana* Benth.



Figure 5: *Harpalyce brasiliana* Benth.



Figure 6: *Harpalyce brasiliana* Benth.



Figure 7: *Harpalyce brasiliana* Benth.

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus *Harpalyce* (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce correntina São-Mateus et al.

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** reticulodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme/panicle; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrubs up to 2 m tall, branches ferruginous-tomentose to glabrescent. **Stipules** ca. 1 × 1 mm, persistent, deltoid. **Leaves** 6–18.5 cm long, 5–9(11)-foliolate; subsessile, the petiole very short, measuring petiole 0.3–1 cm long, angular and slightly sulcate; leaflets 3–6 × 2–3 cm, chartaceous to sub-coriaceous when mature, plane, widely oblong, ovate-lanceolate or occasionally ovate-oblong in the lateral leaflets or ovate, widely ovate or obelliptic in the apex leaflets, base cordate, apex rounded to emarginated, secondary veins conspicuous and reticulodromous, margins plane, lanulose with golden hairs. **Inflorescence** 4.5–11 cm long, 12–36-flowered racemes or panicles, in general smaller or the same size than the subtending leaf; bracts ca. 1.5 × 0.4 mm, caducous, triangular, base truncate, ferruginous-tomentose; bracteoles ca. 1 × 1 mm, smaller than half the length of the calyx, deltoid, attached at the along the pedicel, caducous. **Flowers** 2–2.5 cm long; petals orange. **Legume** ca. 5 × 1.1 cm, base attenuate, brownish, slightly reticulate. **Seeds** 12, 7 × 3 mm, oblong.

COMMENTS

Harpalyce correntina has been found only in open savannas of the western region of the Brazilian state of Bahia .
It is most morphologically similar to *H. speciosa* mainly by having usually 7-foliolate leaves, leaflets cordate at the base and with reticulodromous venation, inflorescence mostly subtended by a unifoliolate leaf, and flowers larger than 2 cm long. However, *H. correntina* is remarked by the branches, rachis, and inflorescences axis with ferruginous hairs (vs. indumentum cinereous in *H. speciosa*), deltoid stipules (vs. narrowly triangular), smaller petioles measuring 0.3–1 cm long (vs. 3–4 cm long), the carinal calyx lip narrowly oblong-lanceolate (vs. ovate-oblong to elliptic-oblong), and pods with slightly reticulate valves (vs. strongly rugose-reticulate).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
Northeast (Bahia)

HERBARIUM MATERIAL

L.P. Queiroz, 6074, ALCB (ALCB031124), Bahia, **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce correntina* São-Mateus et al.



Figure 2: *Harpalyce correntina* São-Mateus et al.



Figure 3: *Harpalyce correntina* São-Mateus et al.

Harpalyce hilariana Benth.

This treatment is composed of the following taxa: *Harpalyce hilariana*, .

Has as synonym
homotype *Harpalyce hilariana* Benth. var. *hilariana*

DESCRIPTION

Leaf: petiole size bigger than 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** reticulodromous; **peltate gland(s)** present/absent; **orientation** non navicular , the leaflet patent. **Inflorescence: type** panicle; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** purplish; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present/absent. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub 1.5 m tall, semi-erect, branches ferruginous-tomentose. **Stipules** not seen. **Leaves** 5–7.5 cm long; petiole 1–1.8 cm long, angulate; leaflets (1)3–7, 5–8 × 4.5–6 cm, coriaceous, plane, ovate-lanceolate to widely ovate-lanceolate, base cordate, apex acute, secondary veins conspicuous and reticulodroumous, margins plane, densely ferruginous-pubescent. **Inflorescence** ca. 13 cm long, 10-flowered, terminal panicles, longer than the subtending leaf; bracts ca. 1.5 × 1.5 mm, deltoid, base truncate, ferruginous-tomentose, caducous; bracteoles 3–4 × 0.5 cm, smaller than half the calyx length of the calyx, lanceolate, attached along the pedicel, caducous. **Flower** 2–2.5 cm long; petals atropurpureous. **Legume** ca. 5 × 1.4 cm, base attenuate, rugose, brownish when mature. **Seeds** ca. 10, ca. 5 × 2 mm, oblong.

COMMENTS

Harpalyce hilariana has been collected only in the state of Minas Gerais, growing on quartzite rocky outcrops (campos rupestres). It is readily distinguished from its morphologically similar *H. correntina* by the combination of early caducous stipules (vs. persistent stipules), coriaceous leaflets densely ferruginous-pubescent on the lower surface (vs. chartaceous to sub-coriaceous, lower surface lanulose and with golden hairs), inflorescence usually longer than the subtending leaf (vs. inflorescence in general smaller or the same size than the subtending leaf), and lanceolate bracteoles measuring 3–4 mm long (vs. deltoid, ca. 1 mm long bracteoles). Furthermore, their geographic distribution do not overlap, with *H. hilariana* occurring in the campos rupestres on the mountaintops of the Espinhaço range in Minas Gerais, whereas *H. correntina* in only known from the cerrado (savanna-like) vegetation of western Bahia.

Life Form
Shrub

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
Central-west (Goiás, Mato Grosso)

HERBARIUM MATERIAL

W.M.B. São-Mateus, 379, HUEFS, 222538, Goiás

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce lanata L.P.Queiroz

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** more than 15; **leaflet size** smaller than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** navicular , the leaflet erect. **Inflorescence: type** raceme; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** greyish or cinereous. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub 0.5–2 m tall, multi-stemmed, branches densely wooly with cinereous hairs. **Stipules** 7–12 × 1–1.5 mm, persistent, linear. **Leaves** (5.5–)7–10 cm long, 19–35-foliolate; petiole 0.2–0.4 cm long; leaflets 1–1.9 × 0.2–0.3(–0.6) cm, coriaceous, plane, oblong to oblong-linear, base cuneate, apex acute, secondary veins 3–4 pairs, conspicuous, camptodromous, margins strongly revolute, upper surface lanate to glabrescent, lower surface strongly villous. **Inflorescence** ca. 3 cm long, 1–3-flowered, terminal subumbelliform, smaller than the subtending leaf; bracts not seen; bracteoles 18–27 × ca. 1 mm, larger than half the length of the calyx, linear, attached at the base of the calyx, persistent. **Flower** 2.5–2.8 cm long; petals dark red. **Legume** 3.5–4.2 × 1.2–1.4 cm, base attenuate, atropurpureus when mature and strongly rugose. **Seeds** 6–10, 4–5 × 2.5–3.5 mm, ovate.

COMMENTS

Harpalyce lanata is endemic to southern Chapada Diamantina in Bahia, where it occurs exclusively in campos rupestres associated with sandy soil and quartzite rocks, between 850–1,600 m of elevation. Despite being easily confounded with *H. parvifolia*, and endemic species from Serra de Grão Mogol in Minas Gerais state, *H. lanata* can be differentiated mainly by the branches, axes of the inflorescence, and calyx densely wooly (vs. tomentose to glabrous), larger stipules measuring 7–12 mm long (vs. stipules 2–5 mm long), bracteoles 18–27 mm long (vs. bracteoles 12–15 mm long), inflorescences terminal, subumbelliform, and with flowers larger than 2.5 cm long (vs. axillary racemes with flowers up to 2 cm long).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Caatinga

Vegetation Types
Highland Rocky Field

Geographic Distribution
Confirmed ocurrences
Northeast (Bahia)

HERBARIUM MATERIAL

W. Ganev, 1659, HUEFS (HUEFS012924), K, (K000118762), NY, (NY00578962), SPF, (SPF00088631), **Typus**
P.R.L. Moraes, 3013, HUEFS (HUEFS159489)
M.J.G. Andrade, 359, HUEFS (HUEFS074144)

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce lanata* L.P.Queiroz



Figure 2: *Harpalyce lanata* L.P.Queiroz



Figure 3: *Harpalyce lanata* L.P.Queiroz



Figure 4: *Harpalyce lanata* L.P.Queiroz



Figure 5: *Harpalyce lanata* L.P.Queiroz



Figure 6: *Harpalyce lanata* L.P.Queiroz



Figure 7: *Harpalyce lanata* L.P.Queiroz

REFERENCE

Queiroz, L. P. 1998. A new species of *Harpalyce* Moç.& Sessé ex DC. (Leguminosae: Brongniartieae) from Bahia, Brazil. Kew Bull. 53: 985–988.

Harpalyce lepidota Taub.

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** less than 13; **leaflet size** smaller than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** navicular , the leaflet erect. **Inflorescence: type** raceme; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** less than 2.0 cm long; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub 1–1.5 m tall, branches densely pubescent, with ferruginous hairs. **Stipules** 1.5–2 × 0.5–1 mm, persistent, triangular. **Leaves** 5.5–7(–9.5) cm long, (3–)7–11(–13)-foliolate; petiole 0.5–1 cm long, vertically compressed, sulcate; leaflets 1–3(–3.9) × 0.2–0.6 cm, subcoriaceous, plane, narrowly elliptic to elliptic-lanceolate, base cuneate, apex acute to acute-mucronate, secondary veins 8–10 pairs, slightly conspicuous to inconspicuous, camptodromous, margins plane, upper surface puberulous and with yellowish, globose peltate glands when mature, lower surface densely puberulous and with yellow hairs. **Inflorescence** 2.5–5 cm long, 3–5-flowered, axillary racemes, usually longer than the subtending leaf; bracts ca. 7 × 1.5 mm, ovate-oblong, base rounded, puberulous, caducous; bracteoles 2–2.5 × ca. 0.2 mm, smaller than half the calyx length, linear, attached submedially along the pedicel, persistent. **Flower** ca. 1.8 cm long; petals pinkish. **Legume** ca. 4.5 × 0.9 cm, base attenuate, green when young and black and strongly rugose when mature. **Seeds** 10–12, ca. 5 × 2 mm, oblong.

COMMENTS

Harpalyce lepidota is narrowly endemic to cerrado vegetation in the Federal District of Brazil. is greatly distinct because of the narrowly elliptic to elliptic-lanceolate leaflets. Additionally, *H. lepidota* can be distinguished from its morphologically similar *H. lanata* by the combination of smaller stipules measuring 1.5–2 mm long (vs. 7–12 mm long), leaflets with plane margins (vs. margins strongly revolute), and flowers smaller than 1.8 cm long (vs. 2.5–2.8 cm long).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Grassland, Cerrado (lato sensu), Riverine Forest and/or Gallery Forest

Geographic Distribution
Confirmed ocurrences
Central-west (Distrito Federal)

HERBARIUM MATERIAL

H.S. Irwin, 8713, NY, (NY01058590), Distrito Federal
G.M. Barroso, 545, RB, 124590, (RB00177532), Distrito Federal

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce lepidota* Taub.



Figure 2: *Harpalyce lepidota* Taub.



Figure 3: *Harpalyce lepidota* Taub.



Figure 4: *Harpalyce lepidota* Taub.



Figure 5: *Harpalyce lepidota* Taub.



Figure 6: *Harpalyce lepidota* Taub.

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce macedoi R.S.Cowan

DESCRIPTION

Leaf: petiole size bigger than 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme/panicle; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** greyish or cinereous. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub ca. 1.5 m tall, branches and leaves densely pubescent, grayish, with short, erect and adpressed hairs. **Stipules** ca. 0.8 × 0.5 mm, persistent, triangular. **Leaves** 4.5–11 cm long, (5)7–13-foliolate; petiole (1.2–)1.4–2.8 cm long, vertically compressed, strongly sulcate; leaflets (2.5–)3.5–4.5 × (1.5–)1.8–2.5 cm, subcoriaceous, plane, widely oblong, base rounded, apex emarginate-mucronate to rounded-mucronate, secondary veins 7–10 pairs, conspicuous, eucamptodromous, margins plane. **Inflorescence** 4–10 cm long, 10–30-flowered, axillary racemes or terminal panicles, usually longer than the subtending leaf; bracts ca. 1 × 1 mm, triangular, base truncate, tomentose with grayish hairs, caducous; bracteoles ca. 1 × 0.5 mm, smaller than half the calyx length, triangular, inserted at the base of the calyx, persistent. **Flower** ca. 2.3 cm long; petals dark coral. **Legume** ca. 5.5 × 1 cm, base attenuate, black when mature and slightly rugose. **Seeds** ca. 10–12, ca. 5.5 × 3 mm, oblong.

COMMENTS

Harpalyce macedoi is known from just two collections in nearby localities in the state of Tocantins, where it occurs in cerrado vegetation. It can be easily recognized by the unique grayish hairs covering the branches, leaflets, and inflorescences as well as the very smal bracteoles measuring up to 0.8 mm long (vs. > 1 mm long in all other species of the genus).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
North (Tocantins)
Central-west (Goiás, Mato Grosso)

HERBARIUM MATERIAL

A. Macedo, 3842, US, IAN
G. Hatschbach, 62841, HUEFS

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce magnibracteata São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** less than 13; **leaflet size** smaller than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme; **size** bigger than subtended leaf; **bract(s)** leaf - like amplexicaul and bigger than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub 1–2.5 m tall, branches and leaves covered by flexuous, densely tomentose or velutinous with ferruginous or whitish hairs. **Stipules** 1.2–2 × ca. 1 mm, triangular, persistent. **Leaves** 5–13.5 cm long, 7–11-foliolate; petiole 0.8–1.4 cm long; leaflets 1.4–2.3(–3.5) × 1–1.6 cm, chartaceous, plane, oblong-elliptic, elliptic to obovate-oblong, base rounded, apex retuse to rounded, secondary veins 4–7(8) pairs, conspicuous, eucamptodromous, margins plane. **Inflorescence** 7.8–16 cm long, 2–4-flowered, axillary racemes, usually longer than subtending leaf; bracts 1.2–2.3 × 1.2–2.3 cm, leaf-like, suborbicular to widely ovate, amplexicaul, base strongly auriculate with lobes superimposed, persistently attached along the inflorescence axis; bracteoles 4–5 × 0.2–0.3 mm, smaller than half the calyx length, linear, persistent. **Flowers** 2–2.4 cm long; petals light red. **Legume** 3.8–4.8 × 0.8–0.9 cm. **Seeds** 6–10, 6.5–7 × 2–3 mm, oblong to ovate-oblong.

COMMENTS

This recently described species is only known from highland savannas of central-western Bahia state (São-Mateus et al. 2016). *Harpalyce magnibracteata* is remarkably distinct because of the leaf-like, amplexicaul bracts measuring 12–23 × 12–23 mm and that are persistent along the inflorescence axis even when in fruiting. Such suborbicular bracts with strongly auriculate or superimposed basal lobes are very rare in neotropical Brongniartieae, being recorded thus far only in some Mexican species of *Brongniartia*. The remaining species of *Harpalyce* have deltoid, linear, oblong or triangular bracts measuring less than 9 mm long and with truncate or rounded base.

Life Form
Subshrub

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Rock outcrop vegetation

Geographic Distribution
Confirmed ocurrences
Northeast (Bahia)

HERBARIUM MATERIAL

D.B.O.S. Cardoso, 3630, HUEFS, Bahia
L. Campos, 14, ALCB, 209978 (ALCB031118), Bahia
A. Rapini, 1490, HUEFS, Bahia
W.M.B. São-Mateus, 325, HUEFS, 213875, RB, (RB01400401), Bahia, **Typus**

R.P. Orlandi, 404, HUEFS, RB, 209978, (RB00177590), Bahia
L.P. Queiroz, 15823, HUEFS, 205338, Bahia

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz



Figure 3: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz



Figure 4: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz



Figure 5: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz



Figure 6: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz



Figure 7: *Harpalyce magnibracteata* São-Mateus, D.B.O.S.Cardoso & L.P.Queiroz

REFERENCE

São-Mateus, W. M. B., D. B. O. S. Cardoso, L. P. Queiroz & J. G. Jardim. 2016. A striking new species of *Harpalyce* (Leguminosae, Brongniartieae) from highland cerrado of Bahia, Brazil. *Phytotaxa* 246: 120–126.

Harpalyce minor Benth.

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** less than 13; **leaflet size** smaller than 3.0 cm long; **venation** camptodromous or eucamptodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** less than 2.0 cm long; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub 1–2.5 m tall, branches densely ferruginous-tomentose. **Stipules** ca. 1.5 × 0.5 mm, persistent, triangular. **Leaves** 4–6(–10) cm long, (7)9–13(–19)-foliolate; petiole 1.1–1.5 cm long, slender, cylindrical; leaflets 1–1.5(–2) × 0.5–0.8 cm, chartaceous, plane, oblong-ovate to ovate, base rounded, apex obtuse to retuse, venation camptodromous, margins plane, lower surface densely sericeous with ferruginous hairs. **Inflorescence** ca. 4 cm long, 1–4-flowered, axillary racemes or terminal subumbelliform, the same size or smaller than the subtending leaf; axes, bracts, and calyces covered by ferruginous-tomentose; bracts 1–1.2 × ca. 0.5 mm, linear, base truncate, caducous; bracteoles 2–3 × 0.5 mm, linear, smaller than half the calyx length, attached at the base of calyx, persistent. **Flower** ca. 1.5 cm long; petals dark orange. **Legume** 4.4–4.6 × 1.5–1.6 cm, base retuse, light brown, finely reticulated. **Seeds** 11–12, ca. 5 × 3 mm, ovate.

COMMENTS

Harpalyce minor is only found in northern Minas Gerais state, where it mainly occurs in shrubby savanna (cerrado). It differs from its most morphologially similar *H. brasiliana* by having shorter, 1–4-flowered inflorescences up to 4 cm long and subtended by a unifoliolate leaf (vs. 5–15-flowered inflorescence measuring 5–15 cm long and subtended by a 1–3-foliolate leaf), smaller, ca. 1.5 cm long flowers (vs. flowers larger than 2.8 cm long), and legumes 4.4–4.6 cm long with 11–12 seeds (vs. 5–8 cm long and with 12–16 seeds).

Life Form
Shrub, Subshrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
Southeast (Minas Gerais)

HERBARIUM MATERIAL

J.R. Pirani, 5266, HUEFS, SPF, RB, 433478, (RB00423763)
Saint-Hilaire, s.n., P, 433478 (P02141727), **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce minor* Benth.



Figure 2: *Harpalyce minor* Benth.



Figure 3: *Harpalyce minor* Benth.



Figure 4: *Harpalyce minor* Benth.



Figure 5: *Harpalyce minor* Benth.



Figure 6: *Harpalyce minor* Benth.



Figure 7: *Harpalyce minor* Benth.

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce parvifolia H.S.Irwin & Arroyo

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** more than 15; **leaflet size** smaller than 3.0 cm long; **venation** brochidodromous; **peltate gland(s)** present; **orientation** navicular , the leaflet erect. **Inflorescence: type** raceme; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** greyish or cinereous. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** less than 2.0 cm long; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub to 3 m tall, branches tomentose with cinereous, short and erect hairs to glabrous when mature. **Stipules** 2–5 × 0.5–1 mm, linear-triangular, persistent. **Leaves** 5.5–9 cm long, 19–35(–43)-foliolate, tomentose to villous with cinereous hairs; petiole 0.2–0.5 cm long; leaflets 0.5–1 × 0.3–0.5 cm, coriaceous, plane, oblong, oblong-elliptic or obovate in the terminal leaflets, base rounded, apex rounded to obtuse, venation hifodromous, margins slightly revolute. **Inflorescence** 2–5 cm long, 2–4-flowered, axillary racemes, smaller than the subteding leaf; axes, bracts, and calyces tomentose with cinereous hairs; bracts 7–9 × ca. 3 mm, oblong, base rounded, persistent; bracteoles 12–15 × ca. 1 mm, exceeding one half the calyx length, linear, attached at the base of the calyx, persistent. **Flower** ca. 1.9 cm long; petals dark red. **Legume** 5.2–5.6 × ca. 1.2 cm, base attenuate, finely reticulate-rugose when mature. **Seeds** 9–11, 5–6 × 3.5–4 mm, oblong to oblong-ovate.

COMMENTS

Harpalyce parvifolia is narrowly endemic to campos rupestres along the Serra de Grão Mogol of the Espinhaço range, in northern Minas Gerais. This species is quite distinct by the combination of multi-stemmed shrubby habit, terminal branches with zig-zag branching pattern, leaves mostly 19–35-foliolate, leaflets often smaller than 1.0 cm long, coriaceous, oblong-elliptic to obovate, margins slightly revolute, large bracts measuring 7–9 mm long, and flowers smaller than 2.0 cm long.

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Caatinga, Central Brazilian Savanna

Vegetation Types
Highland Rocky Field

Geographic Distribution
Confirmed ocurrences
Southeast (Minas Gerais)

HERBARIUM MATERIAL

H.S. Irwin, 23345, NY, (NY00011940), MO, K, US, UB, RB, P, **Typus**
L.P. Queiroz, 7530, HUEFS (HUEFS067975), HUEFS
G. Hatschbach, 55066, MBM (MBM141254), HUEFS

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce parvifolia* H.S.Irwin & Arroyo



Figure 2: *Harpalyce parvifolia* H.S.Irwin & Arroyo



Figure 3: *Harpalyce parvifolia* H.S.Irwin & Arroyo



Figure 4: *Harpalyce parvifolia* H.S.Irwin & Arroyo



Figure 5: *Harpalyce parvifolia* H.S.Irwin & Arroyo



Figure 6: *Harpalyce parvifolia* H.S.Irwin & Arroyo

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce riparia São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso

DESCRIPTION

Leaf: petiole size up to 1.5 cm long; **leaflet number** more than 15; **leaflet size** smaller than 3.0 cm long; **venation** brochidodromous; **peltate gland(s)** present; **orientation** navicular , the leaflet erect. **Inflorescence: type** raceme; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** less than 2.0 cm long; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrubs 1–4 m tall, virgate, branches ferruginous-tomentose to glabrescent when mature. **Stipules** ca. 1 × 0.2 mm, caducous, triangular. **Leaves** (5–)7–17(–22) cm long, (9–)13–19(–25)-foliolate; petiole 0.9–1.6(–2.4) cm long, slender; leaflets 1.5–2.7(–4.3) × 0.7–1.3 cm, chartaceous, plane, ovate-oblong to oblong, base rounded to slightly subcordate, apex rounded, venation inconspicuous, brochidodromous, margins slightly revolute, lower surface villous with golden to fulvous hairs. **Inflorescence** 2–3 cm long, 2–7-flowered, axillary racemes, smaller than the subtending leaf; axes, bracts, and calyces covere with ferruginous-tomentose indumentum; bracts 1–2 × 0.2 mm, linear, base truncate, caducous; bracteoles 5–6 × 0.2 mm, linear, smaller than half the calyx length, linear, attached at the base of the calyx, persistent. **Flower** 1.2–1.5 cm long; petals red to atropurpureous. **Legume** 3.5–4 × 1.2–1.3 cm, base rounded brownish, finely reticulated. **Seeds** 6–10, ca. 5 × 2 mm, compressed, oblong to oval-oblong.

COMMENTS

This recently described species (São-Mateus et al. 2018) is endemic to Chapada Diamatina in Bahia, where it is reported only for rocky outcrops along the rivers or small streams. Some features that help recognizing *H. riparia* are shrubby, virgate, somewhat spreading habit, cylindrical branches, caducous stipules up to 1 mm long, leaflets relatively smaller towards the leaf apex and villous with golden to fulvous hairs on the lower surface. The small 1.2–1.5 cm long flowers with ferruginous-tomentose calyx in *H. riparia* greatly contrasts with the 2.5–2.8 cm long flowers and densely wooly indumentum covering inflorescence axes and calyx of *H. lanata*. *Harpalyce riparia* also differs from de more widespread *H. brasiliana* by the shorter, 2–3 cm long and 2–7-flowered inflorescences (vs. > 5 cm long and with 10–15 flowers), smaller flowers (1.2–1.5 cm long vs. # 2.8 cm long), and 6–10-seeded pods (vs. 12–16 seeds).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Caatinga

Vegetation Types
Highland Rocky Field

Geographic Distribution
Confirmed ocurrences

Northeast (Bahia)

HERBARIUM MATERIAL

W.M.B. São-Mateus, 323, HUEFS (HUEFS213873), Bahia
L.P. Queiroz, 16125, HUEFS (HUEFS214939), RB, (RB01400400), Bahia, **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 2: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 3: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 4: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 5: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 6: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso



Figure 7: *Harpalyce riparia* São-Mateus, L.P.Queiroz & D.B.O.S.Cardoso

REFERENCE

São-Mateus, W. M. B., L. P. Queiroz, J. G. Jardim & D. B. O. S. Cardoso. 2018. *Harpalyce riparia* (Leguminosae, Papilionoideae), a new species from the campos rupestres of the Chapada Diamantina in Bahia, Brazil. *Systematic Botany* 43: 206–211.

Harpalyce robusta H.S.Irwin & Arroyo

DESCRIPTION

Leaf: petiole size bigger than 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** reticulodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme/panicle; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub ca. 1 m alt., branches cylindrical, villous and with hirsute, long golden hairs. **Stipules** 8–10 × ca. 0.5 mm, linear, persistent. **Leaves** 6.5–9 cm long, 5–7(9)-foliolate; petiole 1.5–2.5 cm long, cylindrical, ferruginous-villous; leaflets 3–4.6 × 1.4–2.3 cm, chartaceous to sub-coriaceous, plane, ovate to oval-elliptic, oblong-obovate or rarely widely-elliptic, base rounded, apex acute-mucronate to rounded-mucronate, secondary venation conspicuous, strongly reticulodromous, margins plane, lower surface villous to woolly. **Inflorescences** 4.5–7.5 cm long, 5–10-flowered, axillary racemes or terminal panicles, usually longer than the subtending leaf; axes, bracts, and calyces ferruginous-villous; bracts ca. 5 × 2 mm, triangular, base truncate, caducous; bracteoles 7–9 × ca. 2 mm, smaller than half the calyx length, narrowly triangular, attached at the base of the calyx or along in the pedicel, persistent. **Flower** ca. 2.5 cm long; petals red to orange. **Legume** ca. 5 × 1.5 cm, base attenuate, strongly coarsely rugose-reticulate. **Seeds** 7–9, ca. 5 × 3 mm, ovate-oblong.

COMMENTS

Harpalyce robusta occurs only in the Brazilian Central Plateau in Distrito Federal and the state of Goiás, where it often occurs in open savannas. *Harpalyce robusta* differs from its morphlogically similar *H. tombadorensis* mainly by the villous branches, the hairs long (vs. branches tomentose, the hairs short), longer stipules measuring 8–10 mm long (vs. ca. 4 mm long), leaflets with reticulodromous venation (vs. brochidodromous), 5–10-flowered inflorescences that are usually longer than the subtending leaf (vs. 10–30-flowered inflorescences usually smaller than the subtending leaf), bracteoles 7–9 × 2 mm, narrowly triangular (vs. bracteoles 1.5–2 × 0.2 mm, linear-triangular), calyx outer surface villous (vs. tomentose), and pods with valves strongly coarsely rugose-reticulate (vs. valves slightly reticulate). Vegetatively, *H. robusta* may be confounded with *H. brasiliana*, but it is readily distinguished by having 8–10 mm long, linear stipules (vs. triangular stipules measuring 1–3 mm long), 1.5–2.5 cm long petioles (vs. up to 1 cm long), inflorescences without a subtending leaf at the base (vs. inflorescence usually subtended by a 1–3-foliolate leaf), and pods with seven to nine seeds (vs. 12–16 seeds).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
Central-west (Distrito Federal, Goiás)

HERBARIUM MATERIAL

H.S. Irwin, 12757, F, GH, K, RB, UB, US, MO (MO2071261), NY, (NY00011942), Goiás, **Typus**
R.C. Forzza, 6760, RB, 557103, (RB00730439), Goiás
G. Martinelli, 7540, RB, 204378, (RB00177564), Distrito Federal

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce speciosa Taub.

Has as synonym
homotype *Harpalyce hilariana* var. *speciosa* (Taub.) Arroyo

DESCRIPTION

Leaf: petiole size bigger than 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** reticulodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** panicle; **size** bigger than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** greyish or cinereous. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrubs 0.8–1.5 m tall, branches strongly angular and sulcate, cinereous-tomentose. **Stipules** ca. 3 × 1.5 mm, narrowly triangular, caducous. **Leaves** 8–18 cm long, (1)3–7-foliolate; petiole 3–4 cm long, strongly thick, angulate; leaflets 6–11 × 4–7.5 cm, coriaceous, strongly conduplicate, ovate-oblong to widely ovate, base cordate, apex obtuse to acute-mucronate, secondary veins conspicuous and strongly reticulodromous, margins plane, lower surface densely pubescent with cinereous hairs. **Inflorescence** 8–20 cm long, 30–100-flowered, terminal panicles or less frequently axillary racemes, longer than the subtending leaf; axes, bracts, and calyces densely ferruginous-tomentose or tomentose and with golden hairs; bracts ca. 3 × 1.5 mm, triangular, base truncate, caducous; bracteoles 2–3 × ca. 0.2 mm, smaller than half the calyx length, linear-triangular, attached along the pedicel, caducous. **Flower** ca. 2.5 cm long; petals dark orange. **Legume** ca. 6.5 × 1.3 cm, base attenuate, strongly rugose-reticulate. **Seeds** 10–11, not seen, but number estimated based on the relatively swollen seed chambers along the pods.

COMMENTS

This species has only been recorded in the grasslands (campo limpo úmido) of the Chapada dos Veadeiros National Park. It can be easily identified when sterile mainly by the relatively large leaf petioles and conduplicate leaflets. Despite resembling *H. hilariana* vegetatively, *H. speciosa* greatly differs by the branches, leaflets, and inflorescence axes covered by cinereous indumentum (vs. ferruginous indumentum), leaves 8–18 cm long (vs. 5–7.5 cm long), longer petioles measuring 3–4 cm long (vs. 1–1.8 cm long), leaflets strongly conduplicate (vs. leaflets plane), calyx vexillar lip oblong to ovate-oblong and the carinal lip elliptic-oblong to ovate-oblong (vs. lanceolate vexillar lip and oblong carinal lip).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Grassland, Cerrado (lato sensu)

Geographic Distribution
Confirmed ocurrences
Central-west (Goiás)

HERBARIUM MATERIAL

W.R. Anderson, 7507, NY, (NY01058517), Goiás
M.F. Simon, 1109, CEN (CEN00080522), Goiás
J.R. Pirani, 6684, CEN (CEN00098871), Goiás
J.H. Haas, 165, CEN (CEN00082775), Goiás

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce speciosa* Taub.



Figure 2: *Harpalyce speciosa* Taub.



Figure 3: *Harpalyce speciosa* Taub.



Figure 4: *Harpalyce speciosa* Taub.



Figure 5: *Harpalyce speciosa* Taub.



Figure 6: *Harpalyce speciosa* Taub.



Figure 7: *Harpalyce speciosa* Taub.

REFERENCE

Arroyo, M. T. K. 1976. The systematics of the legume genus Harpalyce (Leguminosae: Lotoideae). Mem. New York Bot. Gard. 26: 1–80.

Harpalyce tombadorensis São-Mateus et al.

DESCRIPTION

Leaf: petiole size bigger than 1.5 cm long; **leaflet number** less than 13; **leaflet size** bigger than 3.0 cm long; **venation** brochidodromous; **peltate gland(s)** present; **orientation** non navicular , the leaflet patent. **Inflorescence: type** raceme/panicle; **size** smaller than subtended leaf; **bract(s)** non foliaceous with truncate base and smaller than 1.0 cm long; **indumentum on the inflorescence axis , bract(s) and calyx** yellowish to brownish. **Flower: orientation** resupinate; **symmetry** asymmetric; **size** 2.0 - 3.5 cm; **calyx shape** bilabiate; **petal colour** reddish to orange; **anther** dimorphic. **Fruit: type and shape** laterally compressed pod; **transversely septate seed chamber** present. **Seed: seed number** up to 10.

ADDITIONAL DESCRIPTION

Shrub ca. 1 m tall, branches slightly sulcate, ferruginous-tomentose. **Stipules** ca. 4 × 0.5 mm, linear, persistent. **Leaves** 8–12 cm long, 7–9-foliolate; petiole 2–2.5 cm long, thick, slighty sulcate; leaflets 3.5–5.5 × 1.3–1.8 cm, coriaceous, plane, oblong to oblong-elliptic, spatulate or oval-elliptic, base rounded or retuse, apex strongly attenuate-apiculate, secondary venation conspicuous, brochidodromous, margins revolute, lower surface tomentose with golden hairs, flexuous more densely along the mid-vein and secondary veins. **Inflorescence** 4.5–14 cm long, 10–30-flowered, axillary racemes or terminal panicles, usually smaller than the subtending leaf; axes, bracts, and calyces covered with ferruginous-tomentose indumentum; bracts ca. 1 × 0.2 mm, narrowly triangular; bracteoles 1.5–2 × ca. 0.2 mm, linear-triangular, smaller than half the length of the calyx, attached at the base of the calyx, persistent. **Flowers** ca. 2.8 cm long; petals light orange. **Legume** ca. 6.3 × 1.6 cm, nigrescent, base oblique, slightly reticulate. **Seeds** 10, ca. 5 × 3.5 mm, ovate.

COMMENTS

Harpalyce tombadorensis is only known by few records at RPPN Serra do Tombador in the state of Goiás, however it is locally abundant in savanna physiognomies locally known as “campo limpo” and “campo sujo”. *Harpalyce tombadorensis* resembles *H. robusta*, from which it differs by having shorter, c. 4 mm long stipules (vs. 8–10 mm long), brochidodromous leaflets with glabrous upper surface and attenuate-apiculate apex (vs. reticulodromous, upper surface glabrescent to sparsely velutinous, and apex acute-mucronate), persistent, linear-triangular bracteoles measuring 1.5–2 × 0.2 mm (vs. 7–9 × 2 mm, triangular, and caducous), and slightly reticulate pods larger than 6 cm long (vs. 5–5.5 cm long and strongly coarsely rugose-reticulate).

Life Form
Shrub

Substrate
Terrestrial

DISTRIBUTION

Native, Is endemic from Brazil

Phytogeographic Domains
Central Brazilian Savanna

Vegetation Types
Grassland

Geographic Distribution
Confirmed ocurrences
Central-west (Goiás)

HERBARIUM MATERIAL

A.T. Fidelis, 120, CEN (CEN00091731), Goiás
M.F. Simon, 2511, CEN (CEN00095120), Goiás, **Typus**

FIELD IMAGES / ILLUSTRATIONS



Figure 1: *Harpalyce tombadorensis* São-Mateus et al.



Figure 2: *Harpalyce tombadorensis* São-Mateus et al.