



Updated synopsis of *Acalypha* (Euphorbiaceae, Acalyphoideae) from Brazil

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Abstract

A critical taxonomic and nomenclatural review of the Brazilian species of *Acalypha* (Euphorbiaceae, Acalyphoideae) is presented. As a result, 40 species (44 taxa including six subspecies) are accepted, 37 of them native (17 endemic) and three introduced; also, 132 names are considered synonyms, 28 of them for the first time. Two new combinations are proposed: *Acalypha brasiliensis* subsp. *asterotricha* and *A. brasiliensis* subsp. *psilophylla*, previously considered varieties of *A. brasiliensis*. Information about types is provided for all the valid names, and 54 lectotypes and one neotype are designated. Identification keys and detailed distribution maps of all the native taxa are also provided.

Keywords *Acalypha* · Brazil · Euphorbiaceae · Malpighiales · South America · Typification

Introduction

Acalypha L. is one of the most species-rich genera of the family Euphorbiaceae. It includes ca. 500 species of mainly small trees and shrubs distributed in the tropics and subtropics, but some herbaceous species are also found in

temperate regions. The Americas are home to around 250 species, which are distributed from southeastern Canada and the USA, to Uruguay and northern Argentina. The species are found in a wide variety of habitats, from tropical rainforests to subdesertic areas, and range from sea level to 4000 m of altitude (Cardiel and Muñoz-Rodríguez 2012). More detailed information on the presence of *Acalypha* in the New World can be found in Cardiel et al. (2013b).

The present work is part of the ongoing revision of *Acalypha* for South American countries and has been preceded by the taxonomic revisions or synopses for Colombia (Cardiel 1995a), Venezuela (Cardiel 1999), Ecuador (Cardiel and Muñoz-Rodríguez 2012), Peru and Bolivia (Cardiel et al. 2013b), and Argentina, Uruguay, and Paraguay (Cardiel and Muñoz-Rodríguez 2015).

Brazilian *Acalypha* were first treated nationally in the massive Martius' Flora Brasiliensis (Müller-Argoviensis 1874). In that work, 34 species and 39 varieties of *Acalypha* were accepted, 12 of which were described for the first time. In the global treatment of *Acalypha* prepared by Pax and Hoffmann (1924) for Engler's Pflanzenreich, 43 species were recognized from Brazil, two of them new. Five new species of *Acalypha* from Brazil have been described since 1924: *Acalypha uleana* L.B.Sm & Downs (Smith 1971), *A. sehne-mii* Allem & Irgang (Costa Allem and Irgang 1976), *A. apertiolata* Allem & J.L.Waechter (Costa Allem and Waechter 1977), *A. inselbergensis* Cardiel & I.Montero (Cardiel et al.

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Contribution to "Living at its dry limits - Tillandsiales in the Atacama Desert".

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2018), and *A. almadinensis* A.A.C.Sousa (Sousa et al. 2019). The checklist of the Brazilian flora (Forzza et al. 2010), provided information about 48 species of *Acalypha* (Cardiel et al. 2010, BFG 2015), and finally, the recent “Flora do Brazil 2020” project included 40 accepted species and 96 synonyms (Sousa et al. 2020).

Floristic treatments or checklists that included *Acalypha* species have been prepared for the following Brazilian states: Acre (Secco et al. 2008), Bahia (Carneiro et al. 2002; Amorim et al. 2005), Mato Grosso (Moore 1895; Sampaio 1916), Minas Gerais (Cordeiro 2004), Parana (Angely 1977), Pernambuco (Ferreira De Sales et al. 1998), Río Grande do Sul (Rambo 1960), Santa Catarina (Smith and Downs 1959; Smith et al. 1988), and São Paulo (Kuhlmann and Kühn 1947; Angely 1970; Wanderley et al. 2009; Cordeiro et al. 2011).

Information about *Acalypha* species from Brazil is also found in several regional or thematic floras, and other taxonomic works, such as Colla (1836), Glaziou (1913), Lingelsheim (1912), Berry et al. (2007), Matiko Sano et al. (2008), Mendonça et al. (2008), Lima et al. (2008), Stehmann et al. (2009), Lucena and Alves (2009, 2010), João et al. (2011), Secco et al. (2012), Moraes (2013), Duarte et al. (2013), Moro et al. (2014), Hassemmer et al. (2015), Schwirkowski (2015), and Zuloaga et al. (2019). Other studies focused on *Acalypha* from Brazil are those by Sousa et al. (2017), featuring a review of the genus for the São Paulo state; Sousa (2018) reviewing *Acalypha* species from the Atlantic Forest domain; and Maciel-Júnior et al. (2020) updating information on *A. inselbergensis*. We highlight the work of Sousa et al. (2017) because it includes four figures with numerous field images showing different types of flowers and inflorescences that can appear in the Brazilian species of *Acalypha*. The revision of species included in *Acalypha* sect. *Communes* Pax & K.Hoffm. ex Cardiel, P.Muñoz & Muñoz Garm. (Cardiel et al. 2013a), is also relevant, as it includes several species widespread in southern Brazil. Finally, the recent study of epidermal crystals in *Acalypha* as a new taxonomic trait of the genus included numerous Brazilian species (Cardiel et al. 2020).

The aims of this work are to present an updated critical synopsis of the species of *Acalypha* from Brazil, including a complete nomenclatural review, and to provide a taxonomic key to facilitate their identification.

Materials and methods

This work is based on the study of c. 4000 Brazilian specimens of *Acalypha* from the following herbaria: ALCB, ASE, B, BAH, BM, BOTU, BR, BHCB, C, CAS, CEN, CEPEC, CESJ, CGE, CGMS, COL, COR, CORD, CPAP, CRI, EAC, EAFM, ESA, F, FLOR, FUEL, FURB, G,

G-DC, GH., HAS, HBG, HCF, HEPH, HERBAM, HFSL, HJ, HPBR, HRCB, HSJRP, HST, HTSA, HUEFS, HUEM, HUESB, HUFU, HVASF, IAC, ICN, INPA, IPA, IRAI, JOI, JPB, K, L, LIL, M, MA, MAC, MAUAM, MBM, MBML, MEXU, MFS, MO, MOSS, NY, P, PACA-AGP, PEUFR, RB, RON, S, SP, SPF, SPFW, SPSF, TEPB, UB, U, UEC, UESC, UFACPZ, UFP, UFRN, UPCB, UPS, US, VIES, and W (acronyms according to Thiers 2021, continuously updated). We also analyzed a large number of type specimens, clarifying the identity of many names.

The structure of the synopsis generally follows that employed in previous works (Cardiel and Muñoz-Rodríguez 2012, 2015). The accepted native species are cited in alphabetical order, followed by the accepted introduced or cultivated species, also in alphabetical order. Each species treatment includes original publications, homotypic synonyms, and nomenclatural synonyms. Only the synonyms based on Brazilian specimens are included, and some names previously cited as accepted for this country. We include the notation “syn. nov.” whenever we newly treat a name as a synonym. Each new synonym is proposed after careful review of its original description and type specimen(s). For each name, information about the type collections is included. Any novel designation of types was made after a careful review of the original literature of the taxa and examination of original material. When no holotype was indicated, or it was lost or destroyed, a lectotype or neotype was designated, according to the rules of the International Code of Nomenclature (Turland et al. 2018), and the recommendation of McNeill (2014). When no holotype was indicated, but a single specimen housed in the institution where the author is known to have worked exists, or if a single specimen with a label clearly in the author’s hand is available, we designate it as “lectotype or perhaps holotype” according to the recommendation by McNeill (2014). The remaining designations of lectotypes are justified in the “notes” section of each species.

All the referenced specimens have been examined, except those marked as “not found”; barcode numbers of type specimens are cited when available. References to illustrations (when available) and descriptions are also cited. Under the “distribution and habitat” section we list the general geographic distribution of each species in Americas, following Taxonomic Database Working Group standards (Brummitt 2001), and the detailed Brazilian distribution, indicating the geographic Brazilian regions, according to IBGE (2004), and the states of each region where the species have been found; then, we indicate the Brazilian biomes (according IBGE 2004), and altitudinal range. Finally, we indicate the total number of specimens reviewed for each taxon. All this information was obtained exclusively from the studied specimens. In the references section, we include mainly works citing species

of *Acalypha* in Brazil. Finally, in the “notes” section, we include any other relevant information, including justifications for nomenclatural decisions if needed.

Data resources

All information gathered as part of this work, including the complete list of specimens studied, is available online, at the regularly updated *Acalypha Taxonomic Information System* website, www.acalypha.es. This website provides data about the whole genus, including information about ca. 35.000 *Acalypha* specimens worldwide (Cardiel et al. 2022).

Results and discussion

In the present work, we recorded 176 scientific names related to *Acalypha* from Brazil (Table 1). Of these, 40 are accepted species (44 taxa including six subspecies); 132 names are considered synonyms (including four *nomina nuda* and four names not validly published), 28 for the first time; and one species is excluded from Brazil: *Acalypha riedeliana* Baill. (= *A. integrifolia* Willd.), which is only found on Reunion Island. Type specimen(s) are indicated for all valid names, and we have designated 54 lectotypes (24 of which are, possibly, holotypes) and one neotype.

Of the 48 species recognized for Brazil in a preliminary compilation by Cardiel et al. (2010), we accept 32, 15 are treated as synonyms, and two are not found in Brazil (*Acalypha stenoloba* Müll.Arg. and the aforementioned *A. riedeliana*). We also report four new records for Brazil, three species (*A. amphigyne*, *A. senilis*, and *A. variabilis*), and one subspecies (*A. communis* subsp. *tracheliifolia*). Two new combinations are proposed: *A. brasiliensis* subsp. *asterotricha* and *A. brasiliensis* subsp. *psilophylla*, previously considered varieties of *A. brasiliensis*.

Of the 40 accepted species, 37 are natives, 17 of them endemic, and three are introduced or cultivated (*Acalypha alopecuroidea* Jacq. *A. hispida* Burm.f., and *A. wilkesiana* Müll.Arg.). As expected, Brazil has the greatest diversity of the genus among South American countries, followed by Bolivia, with 31 species, and Peru, with 28 species (Cardiel et al. 2013b). Brazil also has the highest level of endemic *Acalypha* species among South American countries (46%), followed far behind by Colombia (17%) and Bolivia (16%).

The species of *Acalypha* in Brazil are widespread; they appear less frequently in the upper basin of the Amazon River, although this may be biased due to less exploration and collection activity in this territory. *Acalypha* inhabits all Brazilian biomes. The Atlantic Forest biome is the richest in *Acalypha* species, and also the one with the greatest level of endemism; the species most closely associated with this biome are *A. accedens*, *A. almadinensis*, *A. amblyodonta*,

A. apetiolata, *A. brasiliensis*, *A. digynostachya*, *A. gracilis*, *A. herzogiana*, *A. klotzschii*, *A. macularis*, *A. martiana*, *A. multicaulis*, *A. peckoltii*, *A. pohliana*, *A. radicans*, and *A. uleana*. The Cerrado biome is the main home of *A. chorisandra*, *A. clausenii*, *A. communis* subsp. *apicalis*, and *A. communis* subsp. *communis*, *A. dimorpha*, *A. variabilis*, and *A. velamea*, although some of these species can also appear in disturbed Atlantic Forest; *A. amblyodonta* can also appear in the Cerrado biome. In the Amazonia biome, the most characteristic species are *A. acuminata*, *A. cuneata*, *A. scandens*, *A. stachyura*, and *A. stricta*. In the Caatinga biome there appear mainly *A. inselbergensis* and *A. multicaulis*, but the latter is also frequent in Cerrado and disturbed Atlantic Forest areas. In the Pampa biome, the most characteristic species are *A. communis* subsp. *tracheliifolia*, *A. sehnemii*, and *A. senilis*; *A. velamea* is also found there. Finally, only the poorly known *A. amphigyne* seems to be associated with the Pantanal Biome. Species with a wide distribution, not clearly associated with any of the aforementioned biomes, are *A. arvensis* and *A. poiretii*, species usually associated with anthropic areas, and *A. diversifolia*, *A. macrostachya*, and *A. villosa*, species widely distributed throughout the Neotropics.

It should be noted that several species are poorly known and represented by a small number of collections. *Acalypha amphigyne*, *A. chorisandra*, and *A. pohliana* are only known from the type specimen, in all cases collected over a century ago. *Acalypha dimorpha*, *A. macularis*, *A. peckoltii*, and *A. radicans* have only two or three collections from the last decades, in addition to the nineteenth-century type collections. It is very likely that some of these species are extinct or, at least, highly threatened.

Other more recently described species, such as *Acalypha almadinensis*, *A. apetiolata*, and *A. sehemii*, appear to be highly restricted endemics for which very few collections are known. Further field work is necessary to clarify the situation and conservation status of these species. The case of *A. inselbergensis* is remarkable. This species was described in 2018 based on a single collection, but immediately after that, once this new species was recognized as such, it was discovered to be widely distributed in the Caatinga biome, and more than 30 collections of this species are currently known (Maciel-Júnior et al. 2020).

Finally, we must point out that the diversity and complexity of Brazilian species of *Acalypha* is still not resolved satisfactorily. A more detailed study of some species is necessary, as well as having the support of the results of the phylogenetic works in progress. It is also necessary to increase efforts to search for species that are supported by a small number of collections.

Table 1 Taxa included in *Acalypha* of Brazil

Published names	Accepted names in this paper
A. <i>accedens</i> Müll.Arg.	
<i>A. accedens</i> var. <i>brachyandra</i> (Baill.) Müll.Arg.	A. <i>accedens</i> Müll.Arg.
<i>A. accedens</i> var. <i>genuina</i> Müll.Arg.	A. <i>accedens</i> Müll.Arg.
<i>A. accedens</i> var. <i>viridis</i> Müll.Arg.	A. <i>accedens</i> Müll.Arg.
A. <i>acuminata</i> Benth.	
A. <i>almadinensis</i> A.A.C.Sousa	
A. <i>alopécuroidea</i> Jacq.*	
A. <i>amblyodonta</i> (Müll.Arg.) Müll.Arg.	
<i>A. amblyodonta</i> var. <i>gaudichaudii</i> (Baill.) Müll.Arg.	A. <i>amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. amblyodonta</i> var. <i>hispida</i> Müll.Arg.	A. <i>amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. amblyodonta</i> var. <i>repanda</i> Müll.Arg.	A. <i>amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. amblyodonta</i> var. <i>villosa</i> Müll.Arg.	A. <i>amblyodonta</i> (Müll.Arg.) Müll.Arg.
A. <i>amphigyne</i> S.Moore	
<i>A. ampliata</i> Pax & K.Hoffm.	A. <i>macularis</i> Pax & K.Hoffm.
A. <i>apetiolata</i> Allem & J.L.Waechter	
<i>A. apicalis</i> N.E.Br.	A. <i>communis</i> subsp. <i>apicalis</i> (N.E.Br.) Cardiel & P.Muñoz
<i>A. arciana</i> Müll.Arg.	A. <i>brasiliensis</i> Müll.Arg.
A. <i>arvensis</i> Poepp.	
<i>A. aspericocca</i> Pax & K.Hoffm.	A. <i>martiana</i> Müll.Arg.
<i>A. betuloides</i> Klotzsch ex Baill.	A. <i>variabilis</i> Klotzsch ex Baill.
<i>A. brachyandra</i> Baill.	A. <i>accedens</i> Müll.Arg.
A. <i>brasiliensis</i> Müll.Arg.	
A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa	
A. <i>brasiliensis</i> subsp. <i>brasiliensis</i>	
A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa	
<i>A. brasiliensis</i> var. <i>angustifolia</i> Pax & K.Hoffm.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>asterotricha</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>asterotricha</i> f. <i>cordata</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>asterotricha</i> f. <i>obtusa</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>brevipes</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>cordata</i> (Müll.Arg.) Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>glabrata</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>homotricha</i> f. <i>microphylla</i> Müll.Arg.	A. <i>accedens</i> Müll.Arg.
<i>A. brasiliensis</i> var. <i>longipes</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>maxima</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>mollis</i> Müll.Arg.	A. <i>brasiliensis</i> Müll.Arg.
<i>A. brasiliensis</i> var. <i>obtusa</i> (Müll.Arg.) Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brasiliensis</i> var. <i>psilophylla</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brevibracteata</i> Müll.Arg.	A. <i>brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. brevipes</i> (Müll.Arg.) Müll.Arg.	A. <i>velamea</i> Baill.
A. <i>chorisandra</i> Baill.	
A. <i>clausenii</i> (Turcz.) Müll.Arg.	
A. <i>communis</i> Müll.Arg.	

Table 1 (continued)

Published names	Accepted names in this paper
<i>A. communis</i> f. <i>decumbens</i> Müll.Arg.	<i>A. velamea</i> Baill.
<i>A. communis</i> subsp. <i>apicalis</i> (N.E.Br.) Cardiel & P.Muñoz	
<i>A. communis</i> subsp. <i>communis</i>	
<i>A. communis</i> subsp. <i>tracheliifolia</i> (Pax & K.Hoffm.) Cardiel & P.Muñoz	
<i>A. communis</i> var. <i>brevipes</i> Müll.Arg.	<i>A. velamea</i> Baill.
<i>A. communis</i> var. <i>hirta</i> (Spreng.) Müll.Arg.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. communis</i> var. <i>hirtiformis</i> Pax & K.Hoffm.	<i>A. communis</i> subsp. <i>apicalis</i> (N.E.Br.) Cardiel & P.Muñoz
<i>A. communis</i> var. <i>intermedia</i> Müll.Arg.	<i>A. communis</i> subsp. <i>communis</i>
<i>A. communis</i> var. <i>obscura</i> Müll.Arg.	<i>A. communis</i> subsp. <i>communis</i>
<i>A. communis</i> var. <i>pallida</i> Müll.Arg.	<i>A. velamea</i> Baill.
<i>A. communis</i> var. <i>puberula</i> Müll.Arg.	<i>A. communis</i> subsp. <i>communis</i>
<i>A. communis</i> var. <i>tomentella</i> Müll.Arg.	<i>A. communis</i> subsp. <i>communis</i>
<i>A. communis</i> var. <i>tomentosa</i> Müll.Arg.	<i>A. communis</i> subsp. <i>communis</i>
<i>A. cuneata</i> Poepp.	
<i>A. cuspidata</i> var. <i>amblyodonta</i> Müll.Arg.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. cuspidata</i> var. <i>oxyodonta</i> Müll.Arg.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. digynostachya</i> Baill.	
<i>A. dimorpha</i> Müll.Arg	
<i>A. divaricata</i> Klotzsch ex Baill.	<i>A. gracilis</i> Spreng.
<i>A. diversifolia</i> Jacq.	
<i>A. diversifolia</i> var. <i>squarrosa</i> Müll.Arg.	<i>A. diversifolia</i> Jacq.
<i>A. dupraeana</i> Baill.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. dupraeana</i> var. <i>arciana</i> Baill.	<i>A. brasiliensis</i> Müll.Arg.
<i>A. dupraeana</i> var. <i>gaudichaudii</i> Baill.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. dupraeana</i> var. <i>hilarii</i> Baill.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. dupraeana</i> var. <i>sylvicola</i> Baill.	<i>A. brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. estrellana</i> Baill.	<i>A. accedens</i> Müll.Arg.
<i>A. fragilis</i> Pax & K.Hoffm.	<i>A. brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. goyazensis</i> Glaz.	<i>A. velamea</i> Baill.
<i>A. gracilis</i> Spreng.	
<i>A. gracilis</i> var. <i>divaricata</i> (Baill.) Pax & K.Hoffm.	<i>A. gracilis</i> Spreng.
<i>A. gracilis</i> var. <i>fruticulosa</i> Müll.Arg.	<i>A. gracilis</i> Spreng.
<i>A. gracilis</i> var. <i>genuina</i> Müll.Arg.	<i>A. gracilis</i> Spreng.
<i>A. gracilis</i> var. <i>pubescens</i> Müll.Arg.	<i>A. gracilis</i> Spreng.
<i>A. hassleriana</i> Chodat	
<i>A. herzogiana</i> Pax & K.Hoffm.	
<i>A. hirsuta</i> Mart. ex Colla	<i>A. communis</i> Müll.Arg.
<i>A. hirta</i> Spreng.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. hispida</i> Burm. f. *	
<i>A. humilis</i> Pax & K.Hoffm.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. inselbergensis</i> Cardiel & I.Montero	
<i>A. juruana</i> Ule	<i>A. cuneata</i> Poepp.
<i>A. klotzschii</i> Baill.	
<i>A. lagoensis</i> Müll.Arg.	<i>A. multicaulis</i> Müll.Arg.
<i>A. linosctachya</i> Baill.	<i>A. villosa</i> Jacq.
<i>A. macrostachya</i> Jacq.	
<i>A. macrostachya</i> Poir.	<i>A. poiretii</i> Spreng.
<i>A. macularis</i> Pax & K.Hoffm.	
<i>A. major</i> Salzm. ex Baill.	<i>A. brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa

Table 1 (continued)

Published names	Accepted names in this paper
<i>A. mapirensis</i> var. <i>pubescens</i> Pax & K.Hoffm.	<i>A. stricta</i> Poepp.
<i>A. mapirensis</i> var. <i>scabra</i> Pax & K.Hoffm.	<i>A. stricta</i> Poepp.
<i>A. martiana</i> Müll.Arg.	
<i>A. microstacya</i> Klotzsch in Pax & K.Hoffm.	<i>A. accedens</i> Müll.Arg.
<i>A. multicaulis</i> Müll.Arg.	
<i>A. multicaulis</i> var. <i>genuina</i> Müll.Arg.	<i>A. multicaulis</i> Müll.Arg.
<i>A. multicaulis</i> var. <i>tenuispica</i> Pax & K.Hoffm.	<i>A. multicaulis</i> Müll.Arg.
<i>A. multicaulis</i> var. <i>tomentella</i> Müll.Arg.	<i>A. multicaulis</i> Müll.Arg.
<i>A. nitschkeana</i> Pax & K.Hoffm.	<i>A. herzogiana</i> Pax & K.Hoffm.
<i>A. noronhae</i> Ridl.	<i>A. brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. obovata</i> var. <i>cuneata</i> (Poepp.) F.J.Macbr.	<i>A. cuneata</i> Poepp.
<i>A. omissa</i> Pax & K.Hoffm.	<i>A. accedens</i> Müll.Arg.
<i>A. oxyodonta</i> (Müll.Arg.) Müll.Arg.	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>A. peckoltii</i> Müll.Arg.	
<i>A. pohliana</i> Müll.Arg.	
<i>A. poiretii</i> Spreng.	
<i>A. prunifolia</i> Nees & Mart.	<i>A. klotzschii</i> Baill.
<i>A. pruriens</i> Nees & Mart.	<i>A. multicaulis</i> Müll.Arg.
<i>A. radicans</i> Müll.Arg.	
<i>A. riedeliana</i> Baill.	<i>A. integrifolia</i> Willd. [not found in Brazil]
<i>A. ruderalis</i> Mart. ex Colla	<i>A. multicaulis</i> Müll.Arg.
<i>A. scandens</i> Benth.	
<i>A. sehnemii</i> Allem & Irgang	
<i>A. seminuda</i> Müll.Arg.	<i>A. brasiliensis</i> subsp. <i>asterotricha</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. senilis</i> Baill.	
<i>A. stachyura</i> Pax	
<i>A. stricta</i> Poepp.	
<i>A. striolata</i> Lingelsh.	<i>A. digynostachya</i> Baill.
<i>A. subsana</i> Mart. ex Colla	<i>A. brasiliensis</i> Müll.Arg.
<i>A. subvillosa</i> Müll.Arg.	<i>A. villosa</i> Jacq.
<i>A. tenuicaulis</i> Baill.	<i>A. multicaulis</i> Müll.Arg.
<i>A. tenuiramea</i> Müll.Arg.	<i>A. accedens</i> Müll.Arg.
<i>A. tracheliifolia</i> Pax & K.Hoffm.	<i>A. communis</i> subsp. <i>tracheliifolia</i> (Pax & K.Hoffm.) Cardiel & P.Muñoz
<i>A. uleana</i> L.B.Sm. & Downs	
<i>A. urostachya</i> Baill.	<i>A. stricta</i> Poepp.
<i>A. variabilis</i> Klotzsch ex Baill	
<i>A. variabilis</i> var. <i>eliptica</i> Baill.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. variabilis</i> var. <i>longifolia</i> Baill.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. variabilis</i> var. <i>urticoides</i> Klotzsch ex Baill.	<i>A. variabilis</i> Klotzsch ex Baill.
<i>A. velamea</i> Baill.	
<i>A. villosa</i> Jacq.	
<i>A. villosa</i> var. <i>trichopoda</i> Müll.Arg.	<i>A. villosa</i> Jacq.
<i>A. weddelliana</i> Baill.	<i>A. accedens</i> Müll.Arg.
<i>A. weddelliana</i> var. <i>genuina</i> Müll.Arg.	<i>A. accedens</i> Müll.Arg.
<i>A. weddelliana</i> var. <i>janeirensis</i> Pax & K.Hoffm.	<i>A. accedens</i> Müll.Arg.
<i>A. weddelliana</i> var. <i>major</i> (Baill.) Müll.Arg.	<i>A. brasiliensis</i> subsp. <i>psilophylla</i> (Müll.Arg.) Cardiel & A.A.C.Sousa
<i>A. wilkesiana</i> Müll.Arg.*	
<i>Gymnalypha jacquini</i> Griseb.	<i>A. villosa</i> Jacq.

Table 1 (continued)

Published names	Accepted names in this paper
<i>Odonteilema claussemi</i> Turcz.	<i>A. claussemi</i> (Turcz.) Müll.Arg.
<i>Ricinocarpus accedens</i> (Müll.Arg.) Kuntze	<i>A. accedens</i> Müll.Arg.
<i>Ricinocarpus acuminatus</i> (Benth.) Kuntze	<i>A. acuminata</i> Benth.
<i>Ricinocarpus alopecuroides</i> (Jacq.) Kuntze	<i>A. alopecuroides</i> Jacq.
<i>Ricinocarpus amblyodontus</i> (Müll.Arg.) Kuntze	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>Ricinocarpus arcianus</i> (Müll.Arg.) Kuntze	<i>A. brasiliensis</i> Müll.Arg.
<i>Ricinocarpus arvensis</i> (Poepp.) Kuntze	<i>A. arvensis</i> Poepp.
<i>Ricinocarpus brachyandrus</i> (Baill.) Kuntze	<i>A. accedens</i> Müll.Arg.
<i>Ricinocarpus brevipes</i> (Müll.Arg.) Kuntze	<i>A. velamea</i> Baill.
<i>Ricinocarpus brasiliensis</i> (Müll.Arg.) Kuntze	<i>A. brasiliensis</i> Müll.Arg.
<i>Ricinocarpus chorisandrus</i> (Baill.) Kuntze	<i>A. chorisandrus</i> (Baill.) Kuntze
<i>Ricinocarpus clausseii</i> (Turcz.) Kuntze	<i>A. claussemi</i> (Turcz.) Müll.Arg.
<i>Ricinocarpus communis</i> (Müll.Arg.) Kuntze	<i>A. communis</i> Müll.Arg.
<i>Ricinocarpus cuneatus</i> (Poepp.) Kuntze	<i>A. cuneata</i> Poepp.
<i>Ricinocarpus digynostachyus</i> (Baill.) Kuntze	<i>A. digynostachya</i> Baill.
<i>Ricinocarpus dimorphus</i> (Müll.Arg.) Kuntze	<i>A. dimorpha</i> Müll.Arg.
<i>Ricinocarpus diversifolius</i> (Jacq.) Kuntze	<i>A. diversifolia</i> Jacq.
<i>Ricinocarpus gracilis</i> (Spreng.) Kuntze	<i>A. gracilis</i> Spreng.
<i>Ricinocarpus lagoensis</i> (Müll.Arg.) Kuntze	<i>A. multicaulis</i> Müll.Arg.
<i>Ricinocarpus macrostachyus</i> (Jacq.) Kuntze	<i>A. macrostachya</i> Jacq.
<i>Ricinocarpus martianus</i> (Müll.Arg.) Kuntze	<i>A. martiana</i> Müll.Arg.
<i>Ricinocarpus multicaulis</i> (Müll.Arg.) Kuntze	<i>A. multicaulis</i> Müll.Arg.
<i>Ricinocarpus oxyodontus</i> (Müll.Arg.) Kuntze	<i>A. amblyodonta</i> (Müll.Arg.) Müll.Arg.
<i>Ricinocarpus pohlianus</i> (Müll.Arg.) Kuntze	<i>A. pohliana</i> Müll.Arg.
<i>Ricinocarpus poiretii</i> (Spreng.) Kuntze	<i>A. poiretii</i> Spreng.
<i>Ricinocarpus prunifolius</i> (Nees & Mart.) Kuntze	<i>A. klotzschii</i> Baill.
<i>Ricinocarpus pruriens</i> (Nees & Mart.) Kuntze	<i>A. multicaulis</i> Müll.Arg.
<i>Ricinocarpus riedelianus</i> (Baill.) Kuntze	<i>A. integrifolia</i> Willd.
<i>Ricinocarpus scandens</i> (Benth.) Kuntze	<i>A. scandens</i> Benth.
<i>Ricinocarpus senilis</i> (Baill.) Kuntze	<i>A. senilis</i> Baill.
<i>Ricinocarpus strictus</i> (Poepp.) Kuntze	<i>A. stricta</i> Poepp.
<i>Ricinocarpus velameus</i> (Baill.) Kuntze	<i>A. villosa</i> Jacq.
<i>Ricinocarpus villosus</i> (Jacq.) Kuntze	<i>A. villosa</i> Jacq.
<i>Ricinocarpus weddellianus</i> (Baill.) Kuntze	<i>A. accedens</i> Müll.Arg.

Currently accepted names appear in boldface

*Introduced species

Taxonomic synopsis

Acalypha L., Sp. Pl. 2: 1003. 1753.—TYPE: *Acalypha virginica* L. (lectotype designated by Small (1913: 457)).

The Brazilian species of *Acalypha* are shrubs or small trees, rarely herbs or subshrubs, usually monoecious (only *A. clausseii* is clearly dioecious); erect, decumbent, prostrate or with stoloniferous growth. The indument is composed of simple, glandular, stellate, or fasciculate trichomes. The leaves are undivided, alternate, petiolate

(rarely sessile or subsessile), stipulate, and pinnately or palmately veined. The inflorescences can be terminal or axillary, frequently both, unisexual or androgynous, and usually spicate (racemose only in *A. villosa*), with flowers subtended by bracts. The flowers are unisexual and apetalous. The staminate flowers are inconspicuous, shortly pedicellate, with 4 sepals and 4–8 stamens (these flowers are very similar in all species). The pistillate flowers are small, usually sessile, with 3 sepals, and subtended by bracts usually dentate or deeply parted, rarely entire, that become foliaceous and accrescent in the fruit. Only *A. villosa*, has pedicellate pistillate flowers, with 5

sepals, and with small, non-acrescent bracts. The styles are reddish, distinct or basally connate, divided several times into filiform segments, or rarely unbranched. The fruits are capsular, 3-lobed, usually papillose or muricate, and covered by different types of trichomes. The seeds are small, ovoid, and minutely foveolate.

Key to the species of *Acalypha* of Brazil

- 1a Pistillate flowers pedicellate, calyx with [4] 5 sepals; pistillate bracts not enlarging in fruit (*Acalypha* subgen. *Linostachys* (Klotzsch ex Schtdl.) Pax & K.Hoffm.) ... *A. villosa*
- 1b Pistillate flowers sessile, calyx with 3[4] sepals; pistillate bracts enlarging in fruit, except in *Acalypha hispida* (*Acalypha* subgen. *Acalypha*) 2
- 2a Inflorescences staminate (sometimes absent) and androgynous and then mostly staminate with one to several pistillate flowers at the base 3
- 2b Inflorescences unisexual, or rarely some inflorescences androgynous, and then mostly pistillate with a distal segment of staminate flowers 17
- 3a Leaves and/or young branches with simple, and stellate or fasciculate trichomes, sometimes scarce, or rarely absent; mature pistillate bracts up to 5 mm long 4
- 3b Leaves and/or young branches with only simple trichomes; mature pistillate bracts up to 25 mm long (up to 5 mm long in *A. inselbergensis*) 7
- 4a Leaf blades usually oblong to elliptic-lanceolate, rarely ovate-lanceolate, subchartaceous, the margin slightly revolute; stellate or fasciculate trichomes minute (to 0.02 mm long.); petioles shorter than the leaf blade *A. accedens*
- 4b Leaf blades usually broadly ovate-lanceolate, sometimes elliptic-lanceolate, membranaceous, the margin not revolute; stellate or fasciculate trichomes more than 0.05 mm long; petioles usually longer than the leaf blade 5
- 5a Leaf blades vinaceous on lower surface; mature pistillate bracts fleshy and vinaceous; trichomes fasciculate *A. almadinensis*
- 5b Leaf blades green or whitish on lower surface; mature pistillate bracts membranaceous and green; trichomes

- stellate, fasciculate, or absent 6
- 6a Stellate or fasciculate trichomes absent; leaf blades thin-membranaceous (almost translucent); ovary glabrous *A. peckoltii*
- 6b Stellate or fasciculate trichomes present (sometimes scarce); leaf blades firm-membranaceous; ovary pubescent *A. brasiliensis*
- 7a Leaf blades broadly ovate-lanceolate or subrounded, with actinodromous venation (sometimes narrowly ovate-lanceolate in *A. amblyodonta*) 8
- 7b Leaf blades lanceolate, narrowly ovate, obovate, or elliptic-lanceolate, pinnately veined 16
- 8a Leaf blades (1.5–)2–5(–6) cm long 9
- 8b Leaf blades (6–)7–25 cm long 13
- 9a Shiny exudate covering the plant almost entirely; mature pistillate bracts 4–5 mm long, with entire or subentire margin *A. inselbergensis*
- 9b Shiny exudate absent; mature pistillate bracts 10–25 mm long, with dentate margin 14
- 10a Procumbent herb rooting at the nodes; leaf blades rounded at apex; all inflorescences axillary *A. radicans*
- 10b Erect herb (not rooting at the nodes); leaf blades acute at apex; inflorescences axillary or terminal 11
- 11a Some inflorescences terminal; androgynous inflorescences sessile or shortly pedunculate (peduncle up to 0.5 mm long); mature pistillate bracts up to 12 mm long 13
- 11b All inflorescences axillary; androgynous inflorescences long pedunculate (peduncle up to 6 cm long); mature pistillate bracts up to 25 mm long *A. macularis*
- 12a Leaf blades ovate-lanceolate to subtriangular, glabrescent; terminal inflorescences staminate *A. multicaulis*
- 12b Leaf blades oblong to elliptic lanceolate, pubescent; terminal inflorescences androgynous *A. dimorpha*

- 13a Stipules filiform; androgynous inflorescences pedunculate; mature pistillate bracts deeply divided ...
..... *A. amphigyne*
- 13b Stipules triangular-lanceolate, broadened at the base; androgynous inflorescences sessile; mature pistillate bracts dentate *A. amblyodonta*
- 14a Young branches glabrous; leaf blades narrowly obovate to spatulate-lanceolate
..... *A. klotzschii*
- 14b Young branches subglabrous or pubescent; leaf blades ovate to elliptic-lanceolate 15
- 15a Petioles 4–8 cm long; young branches subglabrous or pubescent *A. martiana*
- 15b Petioles to 2(–3) cm long; young branches pubescent 16
- 16a Leaf blades narrowly lanceolate; mature pistillate bracts to 13 mm long, with 11–15 equal teeth *A. pohliana*
- 16b Leaf blades elliptic-lanceolate to ovate or oblong-lanceolate; mature pistillate bracts to 8 mm long, with 6–8 unequal teeth *A. diversifolia*
- 17a Herbs (slightly suffruticous in *A. clausenii*) 18
- 17b Trees, shrubs, or rarely subshrubs 26
- 18a Leaves sessile or with petioles to 2 mm long 19
- 18b Leaves with petioles more than (5–) 10 mm long 20
- 19a Inflorescences androgynous; mature bracts deeply divided; styles branched *A. uleana*
- 19b Inflorescences unisexual; mature bracts dentate; styles unbranched *A. clausenii*
- 20a Some inflorescences androgynous 21
- 20b All inflorescences unisexual 22
- 21a Young branches and leaves with glandular trichomes; all androgynous inflorescences terminal; mature pistillate bracts deeply divided *A. sehnemii*
- 21b Young branches and leaves with only simple trichomes; androgynous inflorescences terminal or axillary; mature pistillate bracts dentate *A. poiretii* (in part)
- 22a Pistillate inflorescences densely flowered, ellipsoid or cylindrical, with the axis completely covered by the bracts, not conspicuously visible 23
- 22b Pistillate inflorescences loosely flowered, cylindrical, with the axis conspicuously visible between the bracts 25
- 23a Pistillate bracts with triangular awnless teeth *A. poiretii* (in part)
- 23b Pistillate bracts with long awned teeth 26
- 24a Young branches and leaves with glandular trichomes; leaf blades acuminate at apex; pistillate inflorescences axillary and terminal; styles unbranched *A. alopecuroidea*
- 24b Young branches and leaves with only simple trichomes; leaf blades acute at apex; pistillate inflorescences axillary; styles branched *A. arvensis*
- 25a Pistillate flowers in spikes and some pistillate flowers solitary, axillary, without a developed bract; staminate inflorescences terminal; pistillate bracts not deeply partite (less than ½ of the length of the bract)
..... *A. herzogiana*
- 25b Pistillate flowers always in spikes, solitary pistillate flowers absent; staminate inflorescences axillary and terminal; pistillate bracts deeply partite (more than ½ of the length of the bract) *A. gracilis* (in part)
- 26a All inflorescences axillary 27
- 26b Some inflorescences terminal or subterminal 32
- 27a Leaf blades usually broadly ovate-lanceolate, more than 12 cm wide, venation actinodromous 30
- 27b Leaf blades ovate, obovate, to oblong-lanceolate, usually less than 10 cm wide, venation pinnate 32
- 28a Pistillate inflorescences extremely densely flowered, with the axis hidden; bracts not enlarging in fruit; staminate inflorescences absent (usually cultivated plants) *A. hispida*
- 28b Pistillate inflorescences more or less densely flowered, with the axis visible; bracts conspicuously enlarging in fruit; staminate inflorescences usually present 29
- 29a Leaf blades generally variegated, tinted reddish; pistillate inflorescences up to 10 cm long (usually cultivated plants)
..... *A. wilkesiana*

- 29b Leaf blades not variegate, greenish; pistillate inflorescences more than 15 cm long *A. macros-*
tachya
- 30a Leaf blades usually obovate-lanceolate, cuneate to subcuneate at base; pistillate inflorescences 7–15 cm long *A. cuneata*
- 30b Leaf blades ovate to oblong or elliptic-lanceolate, acute to subcordate at base; pistillate inflorescences more than 15 cm long 31
- 31a Shrubs not clambering; leaf blades acute at base; pistillate inflorescences erect, 15–20 cm long
..... *A. acuminata*
- 31b Shrubs usually clambering; leaf blades rounded to subcordate at base; pistillate inflorescences pendulous, 25–40 cm long *A. scandens*
- 32a Some staminate inflorescences terminal; pistillate inflorescences axillary or subterminal; androgynous inflorescences absent
..... 35
- 32b All staminate inflorescences axillary; some pistillate inflorescences terminal; androgynous inflorescences rarely present
..... 37
- 33a Young branches and leaf blades glabrous or glabrescent; leaf blades elliptic-lanceolate, margin entire or obscurely crenate, slightly revolute.....*A. digynostachya*
- 33b Young branches and leaf blades pubescent; leaf blades ovate-lanceolate, margin dentate, not revolute 36
- 34a Young branches and leaves densely tomentose; leaf blades chartaceous or subchartaceous; petioles to ¼ of the length of the leaf blade*A. chorisandra*
- 34b Young branches and leaves sparsely pubescent; leaf blades thin-membranaceous; petioles to ½ of the length of the leaf blade*A. gracilis* (in part)
- 35a Trees or shrubs more than 4 m high 36
- 35b Shrubs or subshrubs up to 1 m high long 37
- 36a Leaf blades oblong-lanceolate, pubescent on lower surface, not glossy *A. stricta*
- 36b Leaf blades elliptic-lanceolate or ovate-lanceolate, becoming glabrous, usually glossy *A. stachyura*
- 37a Young branches and leaf blades with numerous glandular trichomes; leaf blades usually deeply cordate at base *A. hassleriana*
- 37b Young branches and leaf blades usually with only simple trichomes (a few glandular trichomes in *A. communis* subsp. *trachelifolia*); leaf blades rounded or rarely slightly cordate at base
..... 38
- 38a Leaf blades usually with conspicuous bright, resinous droplets; pistillate bracts with glandular trichomes
..... *A. communis*
- 38b Leaf blades with or without bright, resinous droplets; pistillate bracts without glandular trichomes 39
- 39a Young branches usually hispid; leaf blades usually conduplicate, glabrous or subglabrous (with appressed trichomes on veins); lower leaf surface covered by a bright exudate, sometimes reduced to spots
..... *A. variabilis*
- 39b Young branches tomentose to velutinous; leaf blades not conduplicate (sometimes slightly conduplicate in *A. senilis*), more or less densely velutinous; lower leaf surface without exudate
..... 40
- 40a Leaves with petioles (5–)10–50 mm long, leaf blades ovate-triangular to subrounded, membranous
..... *A. senilis*
- 40b Leaves sessile or with petioles up to 3(–5) mm long, leaf blades elliptic, oblong, or ovate-lanceolate, chartaceous 41
- 41a Leaf blades 7–8 × 3.5–5 cm, with simple trichomes; pistillate bracts with teeth covered with crystalliferous papillae
..... *A. vellamea*
- 41b Leaf blades 2–6 × 0.8–2.5 cm, with stellate or fasciculate trichomes; pistillate bracts without papillae
..... *A. apetiolata*
- Acalypha accedens* Müll.Arg., Linnaea 34: 35. 1865. ≡ *Ricinocarpus accedens* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Brazil, “In Brasilia meridionali”, *s.d.*, *J. Lhotsky s.n.* (lectotype **designated here** or perhaps holotype: G-DC barcode G00324475; isolectotypes: G barcode G00383657, and W barcode W0022063).

= *Acalypha weddelliana* Baill., *Adansonia* 5: 232. 1865, **syn. nov.** ≡ *Ricinocarpus weddellianus* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 618. 1891.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, 1844, *M.A. Weddell s.n.* (lectotype **designated here**: P barcode P00645435). Remaining syntypes: Brazil, Rio de Janeiro, “bords du ruisseau de Uba”, *s.d.*, *A. Saint-Hilaire Cat. A¹ n° 644*. (P barcodes P00645437 and P00645436); Brazil: *s.loc.*, 1816–1821, *A. Saint-Hilaire s.n.* (P barcode P00645438).

= *Acalypha brachyandra* Baill., *Adansonia* 5: 232. 1865, **syn. nov.** ≡ *Acalypha accedens* var. *brachyandra* (Baill.) Müll.Arg. in *Martius, Fl. Bras.* 11(2): 362. 1874. ≡ *Ricinocarpus brachyandrus* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891.—TYPE: Brazil, Rio de Janeiro, Nova Friburgo, Nov 1842. *P.C.D. Claussen 76* (lectotype **designated here** or perhaps holotype): P barcode P00635206; isolectotypes: G barcodes G00383654 and G00383655).

= *Acalypha estrellana* Baill., *Adansonia* 5: 237. 1865, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, 1843, *M. Weddell 677* (lectotype **designated here**: P barcode P04836876; isolectotype: P barcode P04836877). Remaining syntype: Brazil, Rio de Janeiro, “serra d’Estrella”, 1844, *M. Weddell 794* (P barcodes P00645441, and P00645441).

= *Acalypha tenuiramea* Müll.Arg., *Prodr.* 15(2): 858. 1866, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Organ Mountains, 1838–1839, *Wilkes Expedition s.n.* (lectotype **designated here** or perhaps holotype: G-DC; isolectotype: GH barcode GH00045481).

= *Acalypha accedens* var. *viridis* Müll.Arg. in *Martius, Fl. Bras.* 11(2): 362. 1874, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, “prope Mandioca”, *s.d.*, *L. Riedel s.n.* (lectotype **designated here** or perhaps holotype: G barcode G00383656).

= *Acalypha omissa* Pax & K.Hoffm. in *Engl., Pflanzenr.* (Heft 85) IV. 147. XVI: 111. 1924, **syn. nov.**—TYPE: Brazil, “Südbrasilianische Provinz”, *s.d.*, *F. Sellow 470* (holotype: B presumed destroyed [B neg. F5309]).

= *Acalypha weddelliana* var. *janeirensis* Pax & K.Hoffm. in *Engl., Pflanzenr.* (Heft 85) IV. 147. XVI: 122. 1924, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Cachoeira, *s.d.*, *Mendonça 151* (holotype: B presumed destroyed.)

= *Acalypha accedens* var. *genuina* Müll.Arg. in *Martius, Fl. Bras.* 11(2): 361. 1874. Designation not validly published.

= *Acalypha weddelliana* var. *genuina* Müll.Arg. in *Martius, Fl. Bras.* 11(2): 365. 1874. Designation not validly published.

= *Acalypha microstachya* Klotzsch in Pax & K.Hoffm. in *Engl., Pflanzenr.* (Heft 85) IV. 147. XVI: 111. 1924, **nom. nud.** sub *A. omissa* Pax & K.Hoffm.

= *Acalypha brasiliensis* var. *homotricha* f. *microphylla* Müll.Arg. in Pax & K.Hoffm. in *Engl., Pflanzenr.* (Heft 85)

IV. 147. XVI: 111. 1924, **nom. nud.** sub *A. omissa* Pax & K.Hoffm.

Iconography: Not found.

Description: Pax and Hoffmann (1924: 118), Sousa et al. (2017: 340).

Distribution and habitat: Endemic to Brazil: Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, and São Paulo). Atlantic Forest, 10–600 m a. s. l. 74 specimens studied (Fig. 1a).

References: Müller-Argoviensis (1866: 860, 1874: 361), Pax and Hoffmann (1924: 118), Angely (1970: 324), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 259), Wanderley et al. (2011: 259), De Sousa and Alves (2014), Sousa et al. (2017: 340), Cardiel et al. (2020: 8).

Notes: *Acalypha weddelliana* was described based on three different Brazilian collections (syntypes), *M.A. Weddell s.n.*, *A. Saint-Hilaire Cat. A¹ n° 644*, and *A. Saint-Hilaire s.n.* We selected the best preserved of those specimens, *M.A. Weddell s.n.* at P as the lectotype.

Acalypha estrellana was described based on two different Brazilian collections (syntypes), *M.A. Weddell 677* and *794*. We selected the best preserved of those specimens, *M.A. Weddell 677* at P, as the lectotype.

The type specimen of *Acalypha tenuiramea* was wrongly quoted as “in insula Orjan Oceani Pacifici” by Müller-Argoviensis (1866). The Wilkes Expedition to the Pacific Ocean (1838–1842) made a brief visit to Rio de Janeiro from November 1838 to January 1839 (Stanton 1975). The type specimen of *A. tenuiramea* was probably collected in the Serra dos Órgãos (Organ Mountains), in the vicinity of Rio de Janeiro, in addition to the type specimen of *A. brevivibracteata* (= *A. brasiliensis* subsp. *psilophylla*).

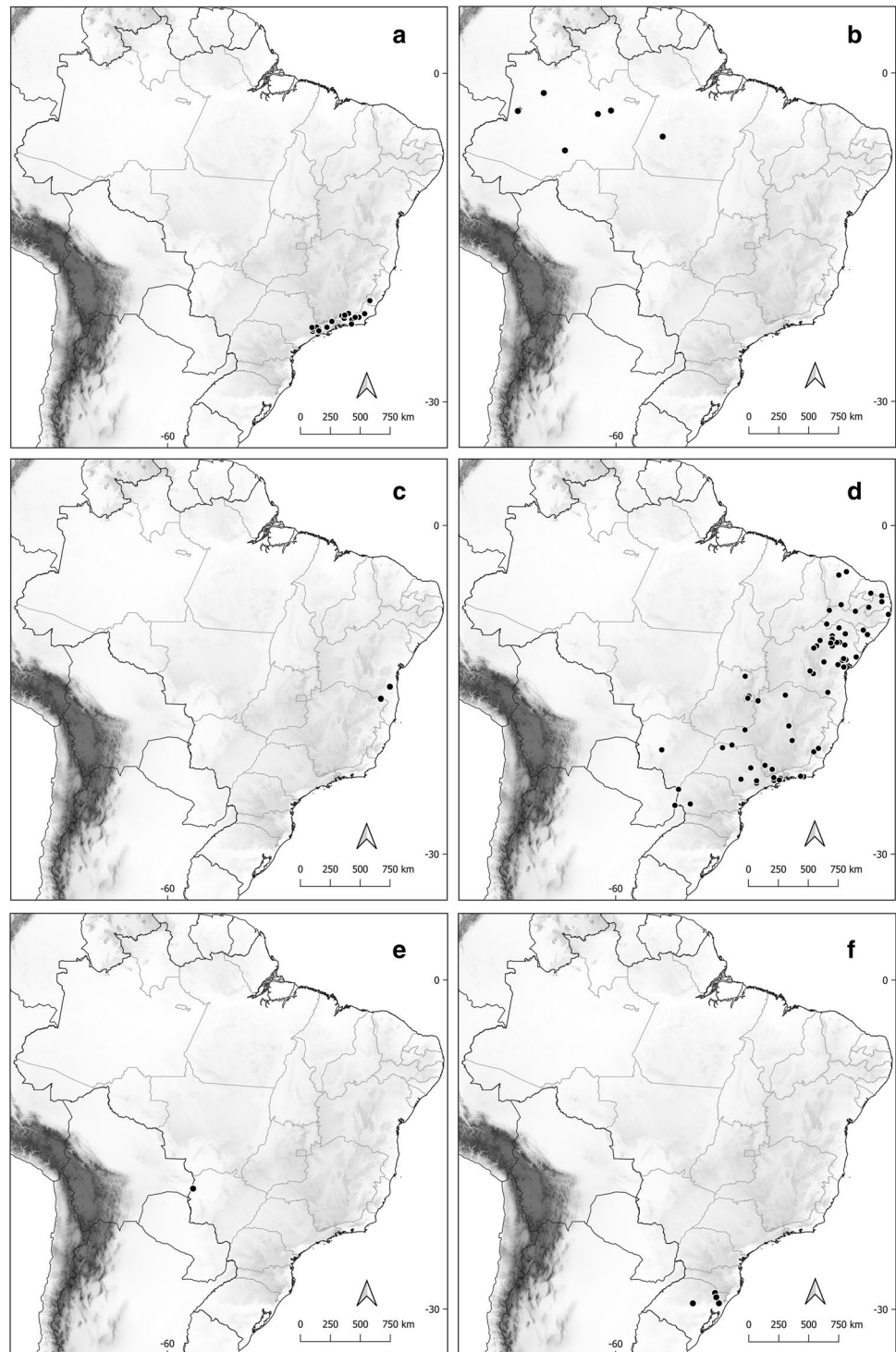
Acalypha acuminata Benth., *Hooker's J. Bot. Kew Gard. Misc.* 6: 329. 1854. ≡ *Ricinocarpus acuminatus* (Benth.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891.—TYPE: Brazil, Amazonas, “in the Gapó at Managuiry, at the mouth of the Rio Negro”, Jun 1851, *R. Spruce 1643⁺* (lectotype **designated here**: K barcode K000600537; isolectotypes: BM barcode BM000939655, BR barcode BR0000006997786, G barcode G00405454, K barcode K000600536, P barcode P00635208, and TCD barcode TCD0007714).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 118), Sousa et al. (2017: 340).

Distribution and habitat: Endemic to Brazil: North (Amazonas and Para). Amazonia, 200–300 m a. s. l. 19 specimens studied (Fig. 1b).

Fig. 1 Distribution map of selected *Acalypha* species in Brazil: **a** *A. accedens*; **b** *A. acuminata*; **c** *A. almadinensis*; **d** *A. amblyodonta*; **e** *A. amphigyne*; **f** *A. apetirolata*



References: Müller-Argoviensis (1866: 860, 1874: 361), Pax and Hoffmann (1924: 118), Angely (1970: 324), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 259), Sousa et al. (2017: 340).

Notes: *Acalypha acuminata* was described based on a single collection, *R. Spruce* 1643+, of which we have found eight

duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at K, as the lectotype.

Acalypha almadinensis A.A.C.Sousa, Syst. Bot. 44(2): 346. 2019.—TYPE: Brazil, Bahia, Almadina, Serra do Sete Paus, Fazenda Cruzeiro do Sul, 14° 44' 06" S 39° 41' 46" W, 578 m a. s. l., 26 Feb 1997. *J.G. Jardim, P.B. Monteiro, E.R.*

de Castro and J.F. dos Santos 986 (holotype: SP; isotype: CEPEC).

Iconography and description: Sousa et al. (2019: 346–347, fig. 1).

Distribution and habitat: Endemic to Brazil: Northeast (Bahia); Southeast (Minas Gerais). Atlantic Forest, 490–800 m a. s. l. 3 specimens studied (Fig. 1c).

References: Sousa et al. (2019).

Acalypha amblyodonta (Müll.Arg.) Müll.Arg. in Martius, Fl. Bras. 11(2): 365. 1874. \equiv *Acalypha cuspidata* var. *amblyodonta* Müll.Arg., Linnaea 34: 37. 1865. \equiv *Acalypha dupraeana* var. *gaudichaudii* Baill., Adansonia 5: 230. 1865. \equiv *Acalypha amblyodonta* var. *gaudichaudii* (Baill.) Müll. Arg. in Martius, Fl. Bras. 11(2): 366. 1874. \equiv *Ricinocarpus amblyodontus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, 1833, *C. Gaudichaud-Beaupré 1134* (lectotype designated by Cardiel et al. (2013a: 155): P barcode P00635211; isolecotypes: B presumed destroyed [B neg. F 5277], G barcode G00383653, and P barcode P04838411).

= *Acalypha cuspidata* var. *oxyodonta* Müll.Arg., Linnaea 34: 37. 1865, **syn. nov.** \equiv *Acalypha oxyodonta* (Müll.Arg.) Müll.Arg. in Martius, Fl. Bras. 11(2): 367. 1874. \equiv *Ricinocarpus oxyodontus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, “in Brasilia meridionali”, 1832. *J. Lhotsky s.n.* (holotype: G-DC barcode G00324494).

= *Acalypha dupraeana* Baill., Adansonia 5: 229. 1865, **syn. nov.**—TYPE: Brazil, “Brésil mérid.”, 1842, *M. Dupré s.n.* (holotype: P barcode P00635207); isotype: NY barcode NY00348276).

= *Acalypha dupraeana* var. *hilarii* Baill., Adansonia 5: 230. 1865, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, *s.d.*, *A. Saint-Hilaire cat. C², n^o. 76* (lectotype **designated here** or perhaps holotype: P barcode P04781789).

= *Acalypha amblyodonta* var. *hispida* Müll.Arg. in Martius, Fl. Bras. 11(2): 366. 1874, **syn. nov.**—TYPE: Brazil, Minas Gerais, Caldas, 18 Jun 1857, *A.F. Regnell 1065* (lectotype **designated here**: S number S-R-7735; isolecotypes: BR barcode BR0000006998110, G barcode G00383651, P barcode P00635210, and S numbers S07-12625, and S07-12626).

= *Acalypha amblyodonta* var. *repanda* Müll.Arg. in Martius, Fl. Bras. 11(2): 366. 1874, **syn. nov.**—TYPE: Brazil, Minas Gerais, “Lagoa Santa”, *s.d.*, *J.E.B. Warming 1576* (lectotype **designated here** or perhaps holotype: G barcode G00383652; isolecotype: P barcode P00635209).

= *Acalypha amblyodonta* var. *villosa* Müll.Arg. in Martius, Fl. Bras. 11(2): 366, 1874.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, *s.d.*, *J. Lhotsky s.n.* (lectotype

designated here: W). Remaining syntypes: Brazil, “ad cataractam Tipuensem”, *s.d.*, *C.P.F. von Martius s.n.* (M barcodes M0239416, M0239417, and M0239418); Brazil, “ad Fazienda da Casta”, *s.d.*, *J.B.E. Pohl 3277* (US barcode US00096287, W number 22044, and 220452). Goiás, “rio Maranhão”, *s.d.*, *J.B.E. Pohl 2044* (W); Brazil, Minas Gerais, Tijuco “Tejuco”, *s.d.*, *Schott 4312* (W); Brazil, Minas Gerais, Lagoa Santa, *s.d.*, *J.E.B. Warming 1564* (G barcode G00383650); *ibidem. cit.*, *J.E.B. Warming s.n.* (P barcode P04839310); *ibidem. cit.*, *E. Warming s.n.* (C barcode C10013862); Brazil, Rio de Janeiro, monte Corcovado, 1857, *G. Casaretto 1847* (G-DC barcode G00324493); Brazil, Rio de Janeiro, *s.d.*, *L. Riedel 1167* not found; *ibidem. cit.*, *s.d.*, *Weddel 681* not found; *ibidem. cit.*, *s.d.*, *A. Glaziou 20* (BR barcodes BR0000005844265 and BR0000005844234); *ibidem. cit.*, *s.d.*, *Schuech s.n.* not found; *ibidem. cit.*, *s.d.*, *Mikan s.n.* (W).

Iconography: Müller-Argoviensis (1874: 366, tab. 53); Lourteig and O’Donell (1942: 299, fig. 6; 1943, tab. 93b), sub. *A. amblyodonta* var. *villosa* Müll.Arg.

Description: Pax and Hoffmann (1924: 120), Sousa et al. (2017: 340).

Distribution and habitat: Brazil, Western South America (Bolivia and Peru) and Southern South America (Paraguay and Argentina). Brazilian distribution: Northeast (Bahia, Ceara, Paraíba, Pernambuco, and Rio Grande do Norte). Central West (Goiás, Mato and Grosso do Sul). Southeast (Minas Gerais, Rio de Janeiro, and São Paulo). South (Parana) Mainly in Caatinga, Cerrado, and disturbed Atlantic Forest, 200–1100 m a. s. l. 287 specimens studied (Fig. 1d).

References: Müller-Argoviensis (1874: 365), Glaziou (1913: 623), Pax and Hoffmann (1924: 120, 121), Angely (1977: 81), Govaerts et al. (2000: 47), Berry et al. (2007: 2010), Matiko Sano et al. (2008: 736), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Lucena and Alves (2010), Cord-eiro et al. (2011: 259), Wanderley et al. (2011: 259), Cardiel et al. (2013b), De Sousa and Alves (2014), Cardiel and Muñoz-Rodríguez (2015), Sousa et al. (2017: 340).

Notes: *Acalypha amblyodonta* var. *hispida* was described based on a single collection, *A.F. Regnell 1065*, of which we have found six duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at S, as the lectotype.

Acalypha amblyodonta var. *villosa* was described based on fourteen different Brazilian collections (syntypes), *G. Casaretto 1847*, *A. Glaziou 20*, *J. Lhotsky s.n.*, *C.P.F. von Martius s.n.*, *Mikan s.n.*, *J.B.E. Pohl 2044* and *3277*, *L.*

Riedel 1167, Schott 4312, Schuech s.n., J.E.B. Warming 1564 and s.n. [2], and Weddel 681. We selected the best preserved of those specimens, *J. Lhotsky s.n.* at W, as the lectotype.

Acalypha amphigyne S.Moore, Trans. Linn. Soc. London, Bot. 4: 467. 1895.—TYPE: Brazil, Mato Grosso do Sul, Corumbá, Dec 1891, *S. Moore 1024* (lectotype **designated here**: K barcode K000600552; isoelectotypes: BM barcode BM000947445, NY barcode NY00246091, and W).

Iconography: Not found.

Description: Moore (1895: 467).

Distribution and habitat: Endemic to Brazil: Central West (Mato Grosso do Sul). Pantanal, 120 m a. s. l. 4 specimens studied (Fig. 1e).

References: Pax and Hoffmann (1924: 40).

Notes: *Acalypha amphigyne* was described based on a single Brazilian collection, *S. Moore 1024*, of which we have found four duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at K, as the lectotype.

Pax and Hoffmann (1924: 40) considered *Acalypha amphigyne* as a “anomalous form” of *A. communis* var. *hirtiformis*. The type specimens of *Acalypha amphigyne* present androgynous axillary inflorescences with a single pistillate bract at the base, clearly different from the inflorescences of *A. communis*, and no anomalous structure has been observed; therefore, we consider that this species should be accepted, although is only known from the type collection.

The type specimen of *Acalypha amphigyne* was collected over a century ago, so we cannot rule out the possibility that the species is now extinct.

Acalypha apetiolata Allem & J.L.Waechter, Revista Brasil. Biol. 37: 85.1977.—TYPE: Brazil, Rio Grande do Sul, Município de Vacaria (Fazenda da Ronda). En campos arbustivos y rupestres, junto al río Pelotas, próximo a la frontera con Santa Catarina, 3 Jan 1947, *B. Rambo s.n.* (holotype: PACA number 34780; isotype: MO not seen).

Iconography and description: Costa Allem and Watcher (1977: 87, fig. 3).

Distribution and habitat: Endemic to Brazil: South (Rio Grande do Sul). Atlantic Forest, 1000 m a. s. l. 4 specimens studied (Fig. 1f).

References: Alvarez Filho (1977), Bencke and Duarte (2008: 98), Sobral et al. (2009: 248), Cardiel et al. (2010: 963).

Notes: *Acalypha apetiolata* can be included in the recently defined *Acalypha* sect. *Communes*, a complex group of species widespread in north of the Southern Cone (Cardiel et al. 2013a). Within this group, *A. apetiolata* can be confused with *A. velamea* Baill., also with sessile or subsessile leaf blades. The presence of stellate trichomes (absent in *A. velamea*) is the main distinctive character of *A. apetiolata*.

Acalypha arvensis Poepp. in Poepp. & Endl., Nov. Gen. Sp. Pl. 3: 21. 1841. ≡ *Ricinocarpus arvensis* (Poepp.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Peru, Amazonas, Maynas ad Yurimaguas, s.d., *E. Poeppig 2215 [2115]* (lectotype designated by Cardiel and Muñoz-Rodríguez, 2012: 8); W; isoelectotypes: G barcodes G003836452, and G00324857, F barcode F0042434F, P barcode P04839414, and W).

Iconography: Dodson et al. (1985: 245, tab. 92d).

Description: Cardiel (1995a, b: 52).

Distribution and habitat: Mexico, Central America, Caribbean, Northern South America, Brazil, and Western South America; introduced in southeastern USA. Brazilian distribution: North (Acre, Amapa, Amazonas, Para, and Rondonia); Central West (Goiás and Mato Grosso do Sul); Southeast (Rio de Janeiro); South (Parana and Santa Catarina). Mainly disturbed areas in Amazonia, Cerrado and Atlantic Forest, 0–750 m a. s. l. 89 specimens studied (Fig. 2a).

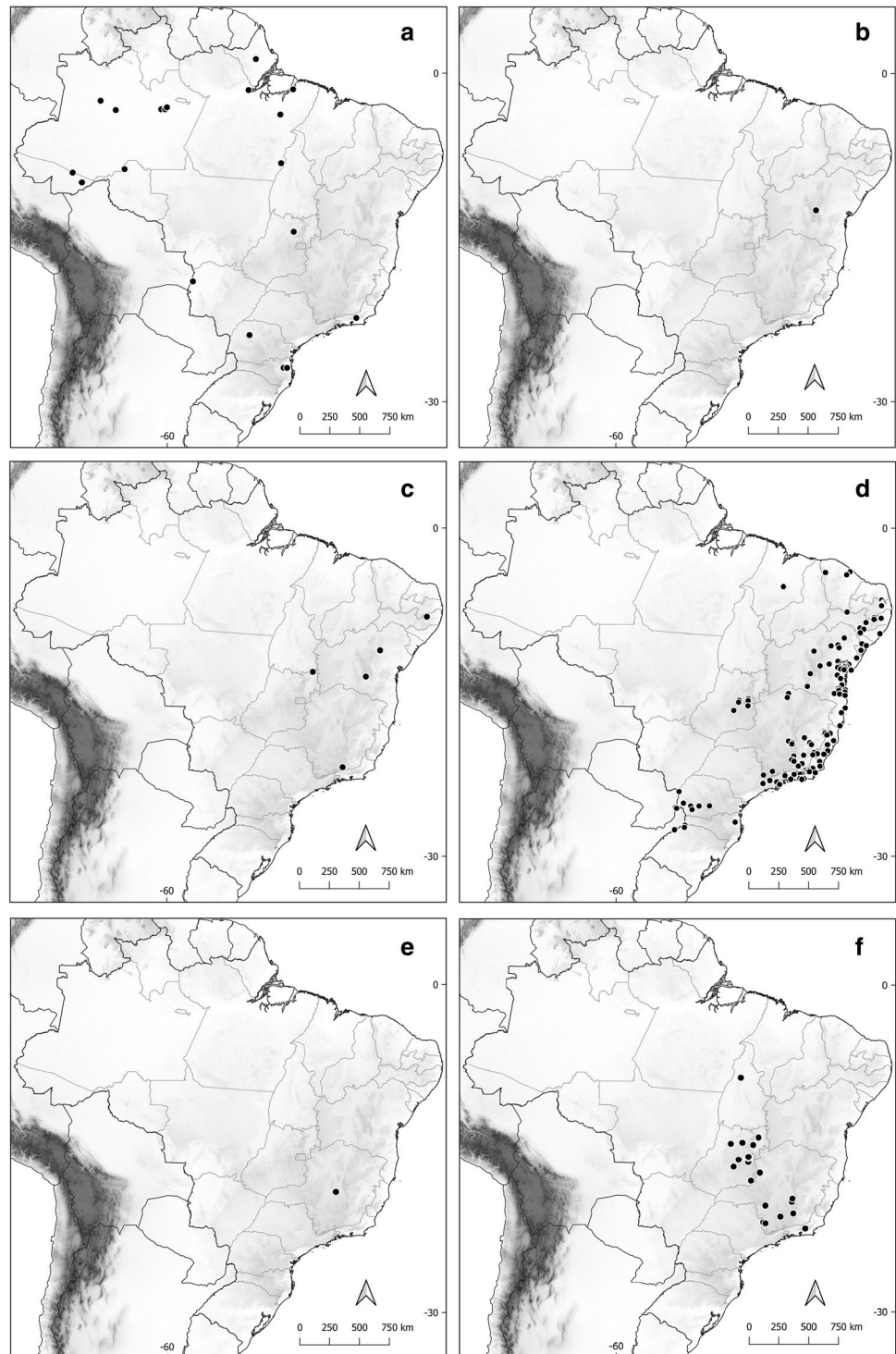
References: Cardiel et al. (2010: 963), De Sousa and Alves (2014).

Notes: *Acalypha arvensis* is frequently misidentified as *A. aristata* Kunth, but *A. aristata* is a synonym of the previously published *A. alopecuroidea* Jacq., an introduced species in Brazil.

Acalypha brasiliensis Müll.Arg., Linnaea 34: 37. 1865, **nom. cons.** ≡ *Acalypha brasiliensis* var. *mollis* Müll.Arg., Linnaea 34: 37. 1865. ≡ *Acalypha dupraeana* var. *arciana* Baill., Adansonia 5: 230 (1865), **nom. illeg. superfl.** ≡ *Acalypha arciana* Müll.Arg. in Martius, Fl. Bras. 11(2): 362. 1874. ≡ *Ricinocarpus arcianus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 617. 1891. ≡ *Ricinocarpus brasiliensis* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Brazil, Bahia, “Ponço d’Arcia”, Jun 1844, *J.S. Blanchet 3865* (lectotype designated by Cardiel and Muñoz-Rodríguez 2015: 390); G-DC barcode G00324483; isoelectotypes: BM barcode BM000939658, G barcodes G00383646, G00383647, and G00383648, and P barcode P00635212).

= *Acalypha subsana* Mart. ex Colla, Herb. Pedem. 5: 113. 1836. **nom. rej.**—TYPE: Brazil, Rio de Janeiro, Cabo Frio, s.d., *Anonymous [Wied] s.n.* (lectotype designated by

Fig. 2 Distribution map of selected *Acalypha* species in Brazil: **a** *A. arvensis*; **b** *A. brasiliensis* subsp. *asterotricha*; **c** *A. brasiliensis* subsp. *brasiliensis*; **d** *A. brasiliensis* subsp. *psilophylla*; **e** *A. chorisandra*; **f** *A. clausenii*



Moraes et al. (2014: 145): TO; isoelectotype: BM barcode BM001125229).

Iconography: See in the subspecies.

Description: Sousa et al. (2017: 340).

Distribution and habitat. Brazil and Southern South America (Argentina). Brazilian distribution: Northeast (Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, and Sergipe); Central West (Distrito Federal, Goiás, and Mato Grosso do Sul); Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo); South (Paraná, Rio Grande do

Sul, and Santa Catarina). Mainly in Atlantic Forest, also occur in Caatinga and Cerrado, 0–1000 (–1400) a. s. l. 538 specimens studied (Fig. 2b–d).

References: Müller-Argoviensis (1866: 859, 1874: 363), Glaziou (1913: 623), Pax and Hoffmann (1924: 117), Smith and Downs (1959: 198), Angely (1970: 324, 1977: 81–1), Smith et al. (1988: 196), Govaerts et al. (2000: 53), Berry et al. (2007: 2010), Matiko Sano et al. (2008: 736), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Cardiel and Muñoz-Rodríguez (2015: 390), Hurbath et al. (2016: 493), Sousa et al. (2017: 340) Cardiel et al. (2020: 8).

Notes: *Acalypha brasiliensis* was first described by Müller Argoviensis in March 1865, who divided it into three varieties (var. *mollis*, var. *asterotricha*, and var. *psilophylla*), with var. *asterotricha* further separated into two forms (f. *cordata* and f. *obtusata*). Müller Argoviensis added four more varieties in 1874 (var. *brevipes*, var. *glabrata*, var. *longipes*, and var. *maxima*). Cardiel and Muñoz-Rodríguez (2015), in order to fix the application of the name *A. brasiliensis*, lectotypified it using original material of *A. brasiliensis* var. *mollis*.

Acalypha dupraeana var. *arciana* was published by Henry Baillon in April–May 1865 referencing the same collection used before by Müller Argoviensis to describe *A. brasiliensis* var. *mollis* (M. Blanchet 3865), therefore, Baillon's name is nom. illeg. superf. (Cardiel and Muñoz-Rodríguez 2015). Pax and Hoffmann (1924: 117) and subsequent works cited *Acalypha arciana* as a combination “*Acalypha arciana* (Baill.) Müll.Arg.”, but the name “*Acalypha arciana*” cannot be considered a combination of *Acalypha dupraeana* var. *arciana* Baill. due to this name being illegitimate (see previous note). The name *A. brasiliensis* var. *mollis* has priority, but this name cannot be combined as “*A. mollis* (Müll. Arg.) Müll.Arg.” as it is already in use (*A. mollis* Kunth). *A. arciana* proposed by Müller-Argoviensis (1874) must thus be considered as the correct name (nom. nov.).

Acalypha brasiliensis is a morphologically complex species that includes numerous infraspecific taxa. The shape and size of the leaves can vary greatly, as can the density of the indument; in young specimens or branches, the stellate or fasciculate trichomes cover almost the entire plant, especially the lower leaf surface, which appears whitish; however, on old specimens the stellate trichomes can be very scarce and even disappear. *A. brasiliensis* is also one of the most common and widely distributed species of the genus in Brazil. After a careful review of the original material and the large number of collections available, we consider that the morphological differences justify the recognition of three different taxa with subspecies rank. Additional analyses are still necessary to elucidate the complexity of this species,

but such studies, including the incorporation of molecular analyses, are beyond the scope of this work.

Key to the subspecies of *Acalypha brasiliensis*

1a Leaves pinnately veined with stellate trichomes ***A. brasiliensis* subsp. *asterotricha***

1b Leaves palmately veined (actinodromous) with stellate or fasciculate trichomes 2

2a Trichomes stellate; leaf blades (6–) 8–18.5 cm long; petioles usually longer than the leaf blade; mature pistillate bracts shorter than the fruit ***A. brasiliensis* subsp. *psilophylla***

2b Trichomes fasciculate; leaf blades 4–7(–9) cm long; petioles equal or slightly shorter than the leaf blade; mature pistillate bracts longer than the fruit ***A. brasiliensis* subsp. *brasiliensis***

Acalypha brasiliensis* subsp. *asterotricha (Müll.Arg.) Cardiel & A.A.C.Sousa, **comb. nov.** ≡ *Acalypha brasiliensis* var. *asterotricha* Müll.Arg. f. *obtusata* Müll. Arg., Linnaea 34: 37. 1865. ≡ *Acalypha brasiliensis* var. *obtusata* (Müll.Arg.) Müll.Arg. in Martius, Fl. Bras. 11(2): 363, 1874.—TYPE: Brazil, Bahia, s. loc., 1831, J.S. Blanchet 98 (lectotype **designated here**: G-DC barcode G00324480).

= *Acalypha brasiliensis* var. *asterotricha* f. *cordata* Müll. Arg., Linnaea 34: 37. 1865. ≡ *Acalypha brasiliensis* var. *cordata* (Müll.Arg.) Müll.Arg. in Martius, Fl. Bras. 11(2): 363, 1874, **syn. nov.**—TYPE: Brazil, Bahia, s. loc., s. d., J.S. Blanchet s.n. (lectotype **designated here** or perhaps holotype: G-DC barcode G00324481).

= *Acalypha seminuda* Müll.Arg. in Martius, Fl. Bras. 11(2): 360, 1874, **syn. nov.**—TYPE: Brazil, s. loc., s. d., L. Riedel s.n. (lectotype **designated here** or perhaps holotype: G barcode G00383715).

= *Acalypha brasiliensis* var. *maxima* Müll.Arg. in Martius, Fl. Bras. 11(2): 364, 1874.—TYPE: Brazil, Bahia, 1830, P. Salzmann 486 (lectotype **designated here** or perhaps holotype: G-DC barcode G00324479).

Iconography: Not found.

Distribution and habitat: Endemic to Brazil: Northeast (Bahia). Atlantic Forest, 0–100 m. 4 specimens studied (Fig. 2b).

Notes: The basionym *Acalypha brasiliensis* var. *asterotricha* was first described by Müller Argoviensis, who recognized two forms (f. *cordata* and f. *obtusata*). We consider that the differences between them do not justify the recognition of

these taxa. In order to fix the application of the name of this variety, it is lectotypified using original material of *Acalypha brasiliensis* var. *asterotricha* f. *obtusata*.

***Acalypha brasiliensis* subsp. *brasiliensis*.**

Iconography: Not found.

Distribution and habitat: Endemic to Brazil: Northeast (Bahia and Pernambuco); Central West (Goiás); Southeast (Minas Gerais). Atlantic Forest, 500–700 m a. s. l. 20 specimens studied (Fig. 2c).

Notes: A remarkable feature of *Acalypha brasiliensis* subsp. *brasiliensis* is the presence of styloids on the lower surface of the leaves (not found in the other subspecies). This type of epidermal crystals, recently studied, is very infrequent in *Acalypha*; among the Brazilian species of the genus, they are only found in this subspecies and in *A. inselbergensis* (Cardiel et al. 2020).

Acalypha brasiliensis* subsp. *psilophylla (Müll.Arg.) Cardiel & A.A.C.Sousa, **comb. nov.** \equiv *Acalypha brasiliensis* var. *psilophylla* Müll.Arg., *Linnaea* 34: 38. 1865.—TYPE: Brazil, Bahia, 1830, *P. Salzmann 484* (lectotype **designated here** or perhaps holotype: G-DC barcode G00324477).

= *Acalypha dupraeana* var. *sylvicola* Baill., *Adansonia* 5: 230. 1865, **syn. nov.**—TYPE: Brazil, Minas Gerais, *s.loc.*, *s.d.*, *A. Saint-Hilaire cat. B¹, n^o. 364* (lectotype **designated here** or perhaps holotype: P barcode P04781791, non P04839011). **Syn. nov.**

= *Acalypha major* Salzm. ex Baill., *Adansonia* 5: 236. 1865, **syn. nov.** \equiv *Acalypha weddelliana* var. *major* (Salzm. ex Baill.) Müll.Arg. in Martius, *Fl. Bras.* 11(2): 264. 1874.—TYPE: Brazil, São Paulo, Serra da Mantiqueira “serra de Mantiqueira”, 1816–1821, *A. Saint-Hilaire cat. D, n^o 589* (lectotype **designated here**: P barcode P04836882; isoelectotype: P barcode P04836883). Remaining syntypes: Brazil, Bahia, *s.d.*, *Herb. P. Salzmann s.n.*, (P barcodes P04839018, P00645439, P00645440 and P04839021, BM barcode BM000939659, G barcode G00383700, MPU barcodes MPU015022, MPU015024, MPU015023 and MPU015025); Brazil, Rio de Janeiro, Paraíba “sur les bords du Parahyba”, *s.d.*, *A. Saint-Hilaire cat. A¹, n. 491* (P barcode P04836881).

= *Acalypha brevibracteata* Müll.Arg., *Prodr.* 15(2): 855. 1866, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Organ Mountains, *s.d.*, *Wilkes Expedition s.n.* (lectotype **designated here** or perhaps holotype: G-DC barcode G00324503; isotype: GH barcode GH00045444).

= *Acalypha brasiliensis* var. *longipes* Müll.Arg. in Martius, *Fl. Bras.* 11(2): 363, 1874.—TYPE: Brazil, Goiás, Pedro Alvez, *s.d.*, *J.B.E. Pohl 21* (lectotype **designated here**: G-DC barcode G00383639; isoelectotypes: BR

barcode BR0000006997816, F barcode P04839027, G, NY, and W number 0022042, 0022043). Remaining syntypes: Brazil, Rio de Janeiro, Monte Corcovado, *s.d.*, *C.P.F. von Martius s.n.* (BR barcode BR0000005622481); *ibidem*. cit., *A. Glaziou 1012* (BR barcodes BR0000006998127, and BR0000006998455), C, K, P barcodes P05543217, P04839027, and P04839028).

= *Acalypha brasiliensis* var. *brevipes* Müll.Arg. in Martius, *Fl. Bras.* 11(2): 363, 1874.—TYPE: Brazil, Minas Gerais, “Tambouril prope Lagoa Santa”. *J.E.B. Warming 1565* (lectotype **designated here**: C; isoelectotypes: F and G barcode G00383642).

= *Acalypha brasiliensis* var. *glabrata* Müll.Arg. in Martius, *Fl. Bras.* 11(2): 364, 1874.—TYPE: Brazil, Rio de Janeiro, Canta Gallo, *s.d.*, *L. Riedel 374* (lectotype **designated here**: G barcode G00383640; isoelectotypes: G barcode G00383641, P barcode P00635218, and W).

= *Acalypha noronhae* Ridl., *J. Linn. Soc., Bot.* 27: 59 (1890).—TYPE: Brazil, Pernambuco, Fernando de Noronha. On the slopes of the Peak, among the boulders, 1887. *H.N.Ridley, T.G. Lea and G.A. Ramage 109* (lectotype **designated here**: K barcode K000600543; isoelectotypes: B presumed destroyed [B neg. F0BN005306], BM barcode BM000947446, GH barcode GH00045473, and US barcode US00096377).

= *Acalypha brasiliensis* var. *angustifolia* Pax & K.Hoffm. in Engl., *Pflanzenr. (Heft 85) IV.* 147. XVI: 117. 1924.—TYPE: Brazil, São Paulo, Capoeira, *s.d.*, *A. Loefgren and E. Edwall 1825* (lectotype **designated here**: W barcode W0022040; isoelectotype: SP number 13759). Remaining syntype: Brazil, Rio de Janeiro, Rio de Janeiro, *s.d.*, *Moura 1027* not seen.

= *Acalypha fragilis* Pax & K.Hoffm., *Repert. Spec. Nov. Regni Veg.* 41: 226 (1937), **syn. nov.**—TYPE: Brazil, Ceará, Serra de Araripe, 25 Mar 1935. *P. Luetzelburg 26128* (lectotype **designated here** or perhaps holotype: M barcode M0239440; isotype: EAC barcode EAC36499).

Iconography: Lourteig and O’Donell (1942: 303, fig. 8; 1943, tab 87).

Distribution and habitat. Brazil and Southern South America (Argentina). Brazilian distribution: Northeast (Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, and Sergipe); Central West (Distrito Federal, Goiás, and Mato Grosso do Sul); Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo); South (Paraná, Rio Grande do Sul, and Santa Catarina). Mainly in Atlantic Forest, also occur in Caatinga and Cerrado, 0–1000 (–1400). 504 specimens studied (Fig. 2d).

References: Müller-Argoviensis (1866: 859, 1874: 363), Glaziou (1913: 623), Pax and Hoffmann (1924: 117), Smith

and Downs (1959: 198), Angely (1970: 324, 1977: 81-1), Smith et al. (1988: 196), Govaerts et al. (2000: 53), Berry et al. (2007: 2010), Matiko Sano et al. (2008: 736), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Cardiel and Muñoz-Rodríguez (2015: 390), Hurbath et al. (2016: 493), Sousa et al. (2017: 340) Cardiel et al. (2020: 8).

Notes: *Acalypha major* was described based on three different Brazilian collections (syntypes), *Saint-Hilaire cat. D, n° 589, Herb. P. Salzmann s.n.*, and *A. Saint-Hilaire cat. A¹ n. 491*. We selected the best preserved of those specimens, *Saint-Hilaire cat. D n° 589* at P, as the lectotype.

The type specimen of *Acalypha brevibracteata* was wrongly quoted as “in insula Orjan Oceani Pacifici” by Müller-Argoviensis (1866). See notes for *A. accedens*.

Acalypha brasiliensis var. *longipes* was described based on three different Brazilian collections (syntypes), *J.B.E. Pohl 21, C.P.F. von Martius s.n.*, and *A. Glaziou 1012*. We selected the best preserved of those specimens, *J.B.E. Pohl 21* at G-DC, as the lectotype.

Acalypha brasiliensis var. *brevipes* was described based on a single Brazilian collection, *J.E.B. Warming 1565*, of which we have found three duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at C, as the lectotype.

Acalypha brasiliensis var. *glabrata* was described based on a single Brazilian collection, *L. Riedel 374*, of which we have found four duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at G, as the lectotype.

Acalypha noronhae was described based on a single Brazilian collection, *H.N. Ridley, T.G. Lea and G.A. Ramage 109*, of which we have found five duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at K, as the lectotype.

Acalypha brasiliensis var. *angustifolia* was described based on two different Brazilian collections (syntypes), *A. Loefgren and E. Edwall 1825* and *Moura 1027*. We were only able to find one of those specimens, *A. Loefgren and E. Edwall 1825* at W, and designate it as the lectotype.

Acalypha chorisandra Baill., *Adansonia* 5: 235. 1865. ≡ *Ricinocarpus chorisandrus* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891.—TYPE: Brazil, Minas Gerais, Canabrava, *s.d.*, *A. Saint-Hilaire cat. B¹ n° 1069* (lectotype **designated here**: P barcode P00635219; isolectotype: P barcode P04839011).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 86).

Distribution and habitat: Endemic to Brazil: Southeast (Minas Gerais). Cerrado, 500–600 m a. s. l. 2 specimens studied (Fig. 2e).

References: Müller-Argoviensis (1866: 883, 1874: 353), Pax and Hoffmann (1924: 86), Cardiel et al. (2010: 963).

Notes: *Acalypha chorisandra* was described based on a single Brazilian collection, *A. Saint-Hilaire cat. B¹ n° 1069*, of which we have found two duplicates at P. Due to the lack of holotype indication, we designate the best preserved specimen as the lectotype.

Acalypha chorisandra is only known from the type specimens, collected in a currently profoundly transformed habitat over 150 years ago. We cannot rule out the possibility that the species is now extinct.

Acalypha clausenii (Turcz.) Müll.Arg., *Linnaea* 34: 51. 1865. ≡ *Odonteilema clausenii* [clausenii] Turcz., *Bull. Soc. Imp. Naturalistes Moscou* 21(1): 588 (1848). *Ricinocarpus clausenii* (Turcz.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891.—TYPE: Brazil, Minas Gerais, Aug–April 1840, *P. Claussen s.n.* (lectotype **designated here**: K barcode K000600549; isolectotypes: BR barcodes BR0000013309398, BR0000013309374, and BR0000013309381, G barcodes G00439921, and G00439912, K barcode K000600550). Remaining syntypes: Brazil, *s.loc., s.d.*, *P. Claussen 84* (G barcode G00324841, and P barcode P04839004); *ibidem. cit., P. Claussen 774* (P barcode P04839007); *ibidem. cit., P. Claussen 775* (P barcode P04839005); *ibidem. cit., P. Claussen 1114* (P barcode P04839002); *ibidem. cit., P. Claussen 458* (BR barcode BR0000013309404, G barcode G00439913, GH barcode GH00045448, and TUB barcode TUB009089).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 86), Sousa et al. (2017: 342).

Distribution and habitat: Endemic to Brazil: Northeast (Tocantins); Central West (Distrito Federal, Goiás; Southeast (Minas Gerais and Rio de Janeiro). Mainly in Cerrado, rarely in disturbed Atlantic Forest, 400–1250 m a. s. l. 123 specimens studied (Fig. 2f).

References: Müller-Argoviensis (1866: 884, 1874: 353), Glaziou (1913: 623), Pax and Hoffmann (1924: 86), Angely (1970: 325, 1977: 81-2), Alves (1999: 489), Cordeiro and Carneiro-Torres (2006: 42), Matiko Sano et al. (2008: 736), Mendonça et al. (2008), Sobral et al. (2009: 248), Cardiel et al. (2010: 963) Cordeiro et al. (2011: 260), Sousa et al. (2017: 341), Cardiel et al. (2020: 9).

Notes: *Odonteilema clausenii*, the basionym of *Acalypha clausenii*, was described based on five different Brazilian collections (syntypes), of *P. Clausen*: 84, 774, 775, 1114 and *s.n.* We selected the best preserved of those specimens, *P. Clausen s.n.* at K, as the lectotype.

Acalypha clausenii presents unique characteristics among the native Brazilian *Acalypha* species, such as being dioecious, having staminate and pistillate terminal inflorescences, and having unbranched styles.

Acalypha communis Müll.Arg., *Linnaea* 34: 23. 1865, **nom. cons.** \equiv *Acalypha communis* Müll.Arg. var. *tomentosa* Müll.Arg., *Linnaea* 34: 24. 1865. \equiv *Ricinocarpus communis* (Müll.Arg.) Kuntze, *Revis. Gen. Pl.* 2: 617 (1891).—TYPE: Brazil, Minas Gerais, *s.d.*, *J.F. Widgren s.n.* (lectotype designated by Cardiel et al. (2013a: 1299): S number S07-12617; isolectotypes: BR barcode BR0000006997823, and P barcode P04838989).

= *Acalypha hirsuta* Mart. ex Colla, *Herb. Pedem.* 5: 114. 1836, **nom. rej.**—TYPE: Brazil, Rio de Janeiro, Magé/Petrópolis, “Serra da Estrella,” *s.d.*, *Anonymous s.n.* (lectotype designated by Moraes et al. (2014: 145): TO not seen). Remaining syntype: Brazil, Rio de Janeiro, “in Campos de Goyatacazes,” 1815, *M.A.P.*, *Prinz zu Wied s.n.* (BR barcode BR0000008675477).

Iconography: See in the subspecies.

Description: Bacigalupo (2005: 173), Sousa et al. (2017: 342).

Distribution and habitat: Brazil, Western South America (Bolivia), and Southern South America (Argentina, Paraguay, and Uruguay). Brazilian distribution: North (Tocantins); Northeast (Bahia and Maranhão); Central West (Goiás, Distrito Federal, Mato Grosso, and Mato Grosso do Sul); Southeast (Minas Gerais, São Paulo, and Rio de Janeiro); South (Paraná, Rio Grande do Sul, and Santa Catarina). Cerrado and disturbed Atlantic Forest, 200–1200 m a. s. l. 223 specimens studied (Fig. 3a–c).

References: Müller-Argoviensis (1866: 840, 1874: 349), Moore (1895: 467), Glaziou (1913: 623), Pax and Hoffmann (1924: 37), Smith and Downs (1959: 198), Rambo (1960: 7), Angely (1970: 325, 1977: 81–2), Smith et al. (1988: 199), Berry et al. (2007), Matiko Sano et al. (2008: 736), Mendonça et al. (2008), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Cardiel et al. (2013a: 1299, 2013b: 157). De Sousa and Alves (2014), Cardiel and Muñoz-Rodríguez (2015: 390), Sousa et al. (2017: 342).

Notes: *Acalypha communis* is a polymorphic species divided into five subspecies widespread in northern part

of the Southern Cone (Cardiel et al. 2013a); three of them are found in Brazil. Some specimens of *A. communis* may have mixed characters that make it difficult to assign them to subspecies; hybrids are likely to appear in areas where the subspecies coexist.

Key to the Brazilian subspecies of *Acalypha communis*

1a Young branches and leaf blades with minute sparse glandular trichomes; leaf blades narrowly oblong-lanceolate, 1.5–3 cm wide; leaf bases truncate to subcordate ***A. communis* subsp. *trachelifolia***

1b Young branches and leaf blades with only simple trichomes; leaf blades broadly ovate or ovate-lanceolate, (3–)4–9 cm wide; leaf bases rounded to cordate 2

2a Young branches and leaves velutinous; leaf blades 6–8 × (3–) 4–5 cm, petiole 3–5 cm long ***A. communis* subsp. *communis***

2b Young branches and leaves puberulous, leaf blades (9–) 13–17 × (4–) 6–9 cm, petiole (6–) 8–19 cm long ***A. communis* subsp. *apicalis***

Acalypha communis* subsp. *apicalis (N.E.Br.) Cardiel & P. Muñoz, *Taxon* 62(6): 1299. 2013. \equiv *Acalypha apicalis* N.E. Br., *Trans. & Proc. Bot. Soc. Edinburgh* 20: 70. 1894.—TYPE: Argentina, Formosa, Río Pilcomayo, Nov 1894, *J.G. Kerr s.n.* (holotype: K barcode K000600553).

= *Acalypha communis* var. *hirtiformis* Pax & K. Hoffm., in Engl., *Pflanzenr.* (Heft 85) IV. 147. XVI: 39. 1924.—TYPE: Brazil, Mato Grosso, Cuyaba, *s.d.*, *G.O.A. Malme 3039* (lectotype designated by Cardiel et al. (2013a: 1300): S number S-R-7702; isolectotype: S number S07-12624).

Iconography: Cardiel and Muñoz-Rodríguez (2015: 394, fig. 3).

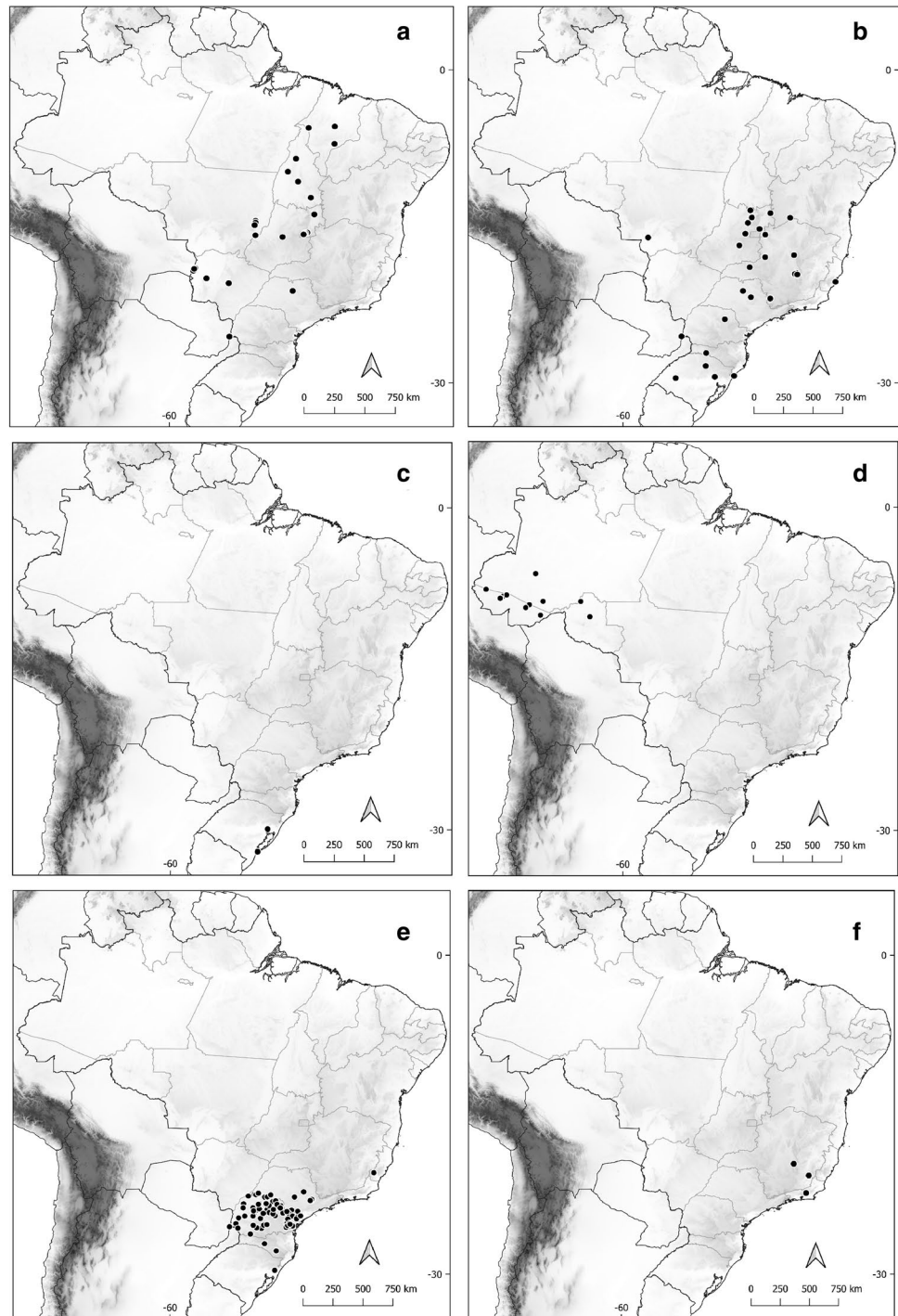
Distribution and habitat: Brazil, and Southern South America (Argentina and Paraguay). BRAZIL: North (Tocantins); Northeast (Maranhão); Central West (Goiás, Distrito Federal, Mato Grosso, Mato Grosso do Sul); Southeast (Minas Gerais). Cerrado, 200–1000 m a. s. l. 87 specimens studied (Fig. 3a).

References: Cardiel et al. (2013a: 1299), Cardiel and Muñoz-Rodríguez (2015: 391).

***Acalypha communis* Müll.Arg. subsp. *communis*.**

= *Acalypha communis* var. *tomentella* Müll.Arg., *Linnaea* 34: 24. 1865.—TYPE: Brazil, Minas Gerais, *s.d.*, *J.F. Widgren s.n.* (lectotype designated here or perhaps

Fig. 3 Distribution map of selected *Acalypha* species in Brazil: **a** *A. communis* subsp. *apicalis*; **b** *A. communis* subsp. *communis*; **c** *A. communis* subsp. *trachelifolia*; **d** *A. cuneata*; **e** *A. digynostachya*; **f** *A. dimorpha*



holotype: S number S07-12620; isotypes: BR barcode BR0000006998479, and G barcode G00324311).

= *Acalypha communis* var. *puberula* Müll.Arg., Linnaea 34: 24. 1865.—TYPE: Brazil: “in Brasilia meridionali”, *s.d.*, *L. Riedel s.n.* (lectotype designated by Cardiel et al. (2013a: 1300): W.

= *Acalypha communis* var. *intermedia* Müll.Arg. in Martius, Fl. Bras. 11(2): 350, 1874.—TYPE: Brazil, Goyaz: “ad

Rio Claro”, *J.B.E. Pohl 2117* (lectotype, designated by Cardiel et al. (2013a: 1300): W number 22067; isolectotype: W number 22049).

= *Acalypha communis* var. *obscura* Müll.Arg. in Martius, Fl. Bras. 11(2): 350, 1874.—TYPE: Brazil: “habitat in Brasilia occidentali”, *s.d.*, *Tamberlik s.n.* (lectotype, designated by Cardiel et al. (2013a: 1300): W number 22059;

isoelectotypes: G barcode G00383637, and W numbers 22051 and 22055).

Iconography: Lourteig and O'Donell (1942: 305, fig. 9; 1943, tab 88b); Bacigalupo (2005: 174, fig. 84).

Distribution and habitat: Western South America (Bolivia), Brazil, and Southern South America (Argentina and Paraguay). Brazilian distribution: Northeast (Bahia); Central West (Goiás, Distrito Federal, Mato Grosso, Mato Grosso do Sul); Southeast (Minas Gerais, São Paulo, Rio de Janeiro); South (Paraná, Rio Grande do Sul, Santa Catarina). Cerrado and disturbed Atlantic Forest, 300–1200 m a. s. l. 142 specimens studied (Fig. 3b).

References: Cardiel et al. (2013a: 1299), Cardiel and Muñoz-Rodríguez (2015: 391).

Acalypha communis Müll.Arg. **subsp. tracheliifolia** (Pax & K.Hoffm.) Cardiel & P.Muñoz, *Taxon* 62(6): 1301. 2013. ≡ *Acalypha tracheliifolia* Pax & K.Hoffm. in Engl., *Pflanzenr.* (Heft 85) IV. 147. XVI: 41. 1924.—TYPE: Argentina, Entre Ríos, *J. Tweedie* 62 (neotype designated by Cardiel et al. (2013a: 1300): BM number 999630).

Iconography: Not found.

Distribution and habitat: Brazil, and Southern South America (Argentina and Uruguay). Brazilian distribution: South (Rio Grande do Sul); Pampa, 0–100 m a. s. l. 2 specimen studied (Fig. 3c).

References: Cardiel et al. (2013a: 1300), Cardiel and Muñoz-Rodríguez (2015: 395).

Notes: *Acalypha communis* subsp. *tracheliifolia* is here reported from Brazil for the first time.

Acalypha cuneata Poepp. in Poepp. & Endl., *Nov. Gen. Sp.* Pl. 3: 22. 1845 [1841]. ≡ *Ricinocarpus cuneatus* (Poepp.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891. ≡ *Acalypha orthea* Benth. var. *cuneata* (Poepp.) J.F. Macbr., *Candollea* 8: 26. 1940.—TYPE: Peru, Loreto, prov. de Alto Amazonas, Yurimaguas, *s.d.*, *E. Poeppig* 2230 (lectotype designated by Cardiel and Muñoz-Rodríguez (2012a): W-Rchb. Number 1889-113778; isoelectotypes: A barcode A00045449, B presumed destroyed [B neg. F0BN005288], F barcodes F0042437F, and F0042436F, G barcode G00383631, HAL barcode HAL0077024, P barcodes P00076207, and P00076206, W-Rchb. Number 1889-0105849, and W n° 0021406).

• = *Acalypha juruana* Ule, *Verh. Bot. Vereins Berlin Brandenburg* 50: 78 (1908), **syn. nov.**—TYPE: Brazil, Amazonas, Juruá “Juruá Miry”, Sep 1901, *E. Ule* 5875 (lectotype **designated here**: HBG barcode HBG516653; isoelectotypes: B presumed destroyed [B neg. F5296], CORD barcode CORD00003068, F not seen, G barcode G00383685, K barcode K000600538, and MG barcode MG005777).

Iconography: Bentham (1844: tab. 53), sub *Acalypha obovata* Benth.

Description: Cardiel (1995a: 104).

Distribution and habitat: Central America, Northern South America, Brazil, and Western South America. Brazilian distribution: North (Acre, Amazonas, and Rondonia), Amazonia, 70–170 m a. s. l. 61 specimens studied (Fig. 3d).

References: Cardiel et al. (2010: 963), Moraes et al (2014: 144).

Notes: *Acalypha juruana* was described based on a single Brazilian collection, *E. Ule* 5875, of which we have found several duplicates, one of them from B and presumed destroyed. Due to the lack of a holotype indication, we designate the best preserved specimen, at HBG, as the lectotype.

Acalypha digynostachya Baill., *Adansonia* 5: 233. 1865. ≡ *Ricinocarpus digynostachyus* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 617. 1891.—TYPE: Brazil, São Paulo, Lambari, A. Saint-Hilaire *cat. C² n° 1131* (lectotype **designated here**: P barcode P00635239; isoelectotypes: P barcodes P00635238, and P00635240).

• = *Acalypha striolata* Lingelsh., *Mitth. Thüring. Bot. Vereins*, n.s., 29: 48 (1912), **syn. nov.**—TYPE: Brazil, Rio Grande do Sul, Panambi [Neu-Württemberg], 450 m a. s. l., 25 Aug 1905, A. Bornmüller 543 (lectotype designated by Cardiel and Muñoz-Rodríguez 2015: 400): JE barcode JE0000819; isoelectotypes: G, HBG, M, U, and W).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 85), Sousa et al. (2017: 342).

Distribution and habitat: Brazil and Southern South America (Argentina and Paraguay). Brazilian distribution: Southeast (Espírito Santo and São Paulo); South (Paraná, Rio Grande do Sul, and Santa Catarina). Mainly in Atlantic

Forest, rarely in Cerrado, (5–) 300–1100 m a. s. l. 245 specimens studied (Fig. 3e).

References: Müller-Argoviensis (1866: 887, 1874: 351), Pax and Hoffmann (1924: 85), Angely (1970: 326), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Sousa et al. (2017: 342).

Notes: *Acalypha digynostachya* was described based on a single collection, *A. Saint-Hilaire cat. C² n° 1131*, of which we have found three duplicates at P. Due to the lack of a holotype indication, we designate the best preserved specimen as the lectotype.

Acalypha striolata was considered a synonym of *A. gracilis* by Pax and Hoffmann (1924), and Berry et al. (2007). Cardiel and Muñoz-Rodríguez (2015) considered *A. striolata* a distinct species, common in southern Brazil, Argentina, and Paraguay. After more study, we consider this species to be conspecific with the previously described *A. digynostachya*.

Acalypha dimorpha Müll.Arg. in Martius, Fl. Bras. 11(2): 354. 1874. ≡ *Ricinocarpus dimorphus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Minas Gerais, “in Virginia prope Lagoa Santa”, 28 Dec 1863, *J.E.B. Warming 1558* in part (lectotype **designated here**: G barcode G00383623; isolectotype: C barcode C10013862 in part). Remaining syntype: Brazil, Rio de Janeiro, Rio de Janeiro, *s.d.*, *E. Warming 1566* (C barcode C10013865).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 89).

Distribution and habitat: Endemic to Brazil: Southeast (Minas Gerais and Rio de Janeiro). Atlantic Forest, 0–1000 m a. s. l. 4 specimens studied (Fig. 3f).

References: Pax and Hoffmann (1924: 89), Matiko Sano et al. (2008: 736), Mendonça et al. (2008), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260).

Notes: *Acalypha dimorpha* was described based on two different Brazilian collections (syntypes), *J.E.B. Warming 1558* and *1566*. We selected the best preserved of those specimens, *J.E.B. Warming 1558* at G, as the lectotype.

The collection *E. Warming 1558* from C includes specimens of *Acalypha amblyodonta* and *A. dimorpha*.

Acalypha diversifolia Jacq., Pl. Hort. Schoenbr. 2: 63, Tab. 244. 1797. ≡ *Ricinocarpus diversifolius* (Jacq.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Venezuela, Caracas

(lectotype designated by Cardiel (1995b: 233): tab. 244 in Jacq., Pl. Hort. Schoenbr. 2 (1797)).

- = *Acalypha diversifolia* var. *squarrosa* Müll.Arg. in Martius, Fl. Bras. 11(2): 358. 1874.—TYPE: Brazil, Goiás, “Corallinho”, *s.d.*, *J.B.E. Pohl s.n.* (lectotype **designated here**: M barcode M0239435; isolectotypes: BR barcode BR000000583825, and G barcode G00383699).

Iconography: Jacquin (1797, tab. 244).

Description: Cardiel (1995a: 91), Sousa et al. (2017: 345).

Distribution and habitat: Mexico, Central America, Northern South America, Brazil, and Western South America. Brazilian distribution: North (Acre, Amazonas, Pará, Rondônia, and Roraima); Northeast (Bahia and Maranhão); Central West (Goiás, Distrito Federal, Mato Grosso, and Mato Grosso do Sul); Southeast (Minas Gerais and São Paulo). Mainly in Amazonia, also in Cerrado and Atlantic Forest, 80–700 m a. s. l. 308 specimens studied (Fig. 4a).

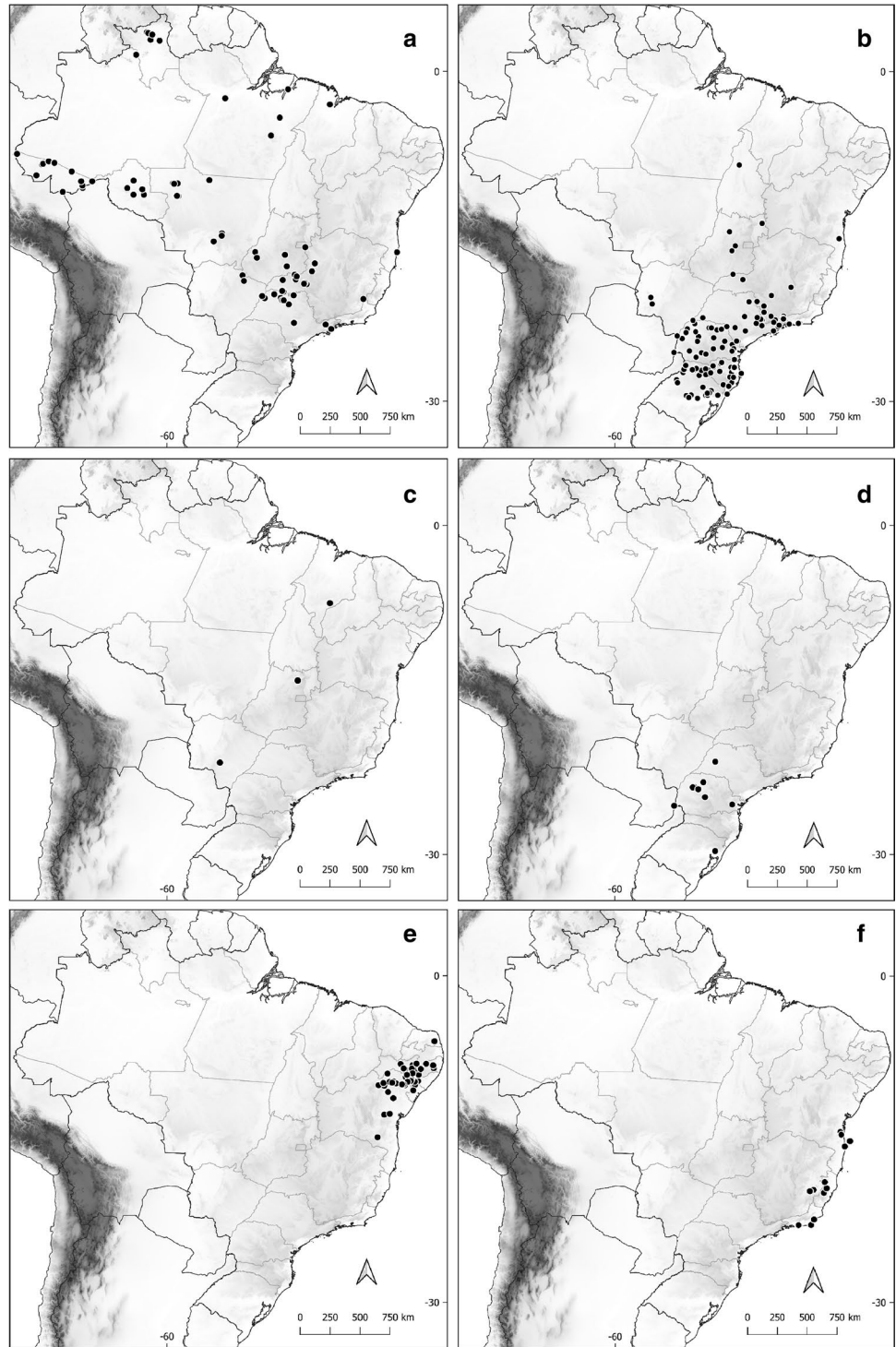
References: Müller-Argoviensis (1866: 854, 1874: 357), Glaziou (1913: 623), Pax and Hoffmann (1924: 107), Matiko Sano et al. (2008: 736), Mendonça et al. (2008), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Sousa et al. (2017: 345).

Notes: *Acalypha diversifolia* var. *squarrosa* was described based on a single Brazilian collection, *J.B.E. Pohl s.n.*, of which we have found three duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen, at M, as the lectotype.

Acalypha gracilis Spreng., Syst. Veg. 4(2): 315. 1827. ≡ *Ricinocarpus gracilis* (Spreng.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow [Sello] s.n.* (neotype designated by Cardiel and Muñoz-Rodríguez (2015: 395); W number 167581; isoneotypes: BR barcode BR0000005838271, K, P barcode P00635263, and W).

- = *Acalypha gracilis* var. *fruticulosa* Müll.Arg., Linnaea 34: 25. 1865.—TYPE: Brazil, Minas Gerais, Lagoa Santa, Feb 1865, *J.E.B. Warming 1626/3* (neotype **designated here**: C)
- = *Acalypha divaricata* Klotzsch ex Baill., Adansonia 5: 234. 1865. Nom. illeg. (non *A. divaricata* Raf. nec *A. divaricata* Müll.Arg.), **syn. nov.** ≡ *A. gracilis* var. *divaricata* (Baill.) Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 84. 1924.—TYPE: Brazil, Rio Grande do Sul, 1833, *C. Gaudichaud-Beaupré 1685* (lectotype **designated here**: P barcode P04838525). Remaining

Fig. 4 Distribution map of selected *Acalypha* species in Brazil: **a** *A. diversifolia*; **b** *A. gracilis*; **c** *A. hassleriana*; **d** *A. herzogiana*; **e** *A. inselbergensis*; **f** *A. klotzschii*



syntype: Brazil, *s.loc.*, *s.d.*, *F. Sellow* [*Sello*] *s.n.*, B presumed destroyed, K, P barcode P00635263, and W).

- = *Acalypha gracilis* var. *pubescens* Müll.Arg. in Martius, Fl. Bras. 11(2): 352. 1874.—TYPE: Brazil, Minas Gerais, Caldas., *s.d.*, *A.F. Regnell* 249 in part (lectotype **designated here**: S number S-R 7753; isolectotypes: BR, G, P, S, and SP).
- – *Acalypha gracilis* var. *genuina* Müll.Arg., Linnaea 34: 24. 1865. Designation not validly published.

Iconography: Lourteig and O'Donnell (1942: 316, fig. 12; 1943, tab. 94b); Bacigalupo (2005: 174, fig. 84).

Description: Bacigalupo (2005: 176), Sousa et al. (2017: 345).

Distribution and habitat: Brazil and Southern South America (Argentina, Paraguay, and Uruguay). Brazilian distribution: North (Tocantins); Northeast (Bahia); Central West (Goiás and Mato Grosso do Sul); Southeast (Minas Gerais, Rio de Janeiro, and São Paulo); South (Paraná, Santa Catarina, and Rio Grande do Sul). Mainly in Atlantic Forest and also Cerrado, (30–) 300–1000 (1550) m a. s. l. 360 specimens studied (Fig. 4b).

References: Müller-Argoviensis (1866: 841, 1874: 352), Pax and Hoffmann (1924: 84), Smith and Downs (1959: 199), Rambo (1960: 8), Angely (1970: 326, 1977: 81–4), Smith et al. (1988: 205), Bacigalupo (2005); Berry et al. (2007: 2012), Matiko Sano et al. (2008: 736), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), De Sousa and Alves (2014), Sousa et al. (2017: 345), Cardiel et al. (2020: 9).

Notes: *Acalypha gracilis* var. *fruticulosa* was first described by Müller Argoviensis, based on a Brazilian specimen collected by Friedrich Sello (or Sellow, as he changed his name in 1814 when he went to Brazil) from the imprecise location “Brasilia meridionali”, and deposited in the Berlin herbarium. Sello’s herbarium and types were mostly destroyed in the Berlin herbarium fire of 1944. We found several collections by Eugen Warming identified as this taxon in handwritten notes by Müller Argoviensis, and have designated one of them, from C, as the neotype.

Acalypha divaricata was described based on two different Brazilian collections (syntypes), *C. Gaudichaud-Beaupré 1685* and *F. Sellow s.n.* We selected the best preserved of those specimens, *C. Gaudichaud-Beaupré 1685* at P, as the lectotype.

Acalypha gracilis var. *pubescens* was described based on a single Brazilian collection, *A.F. Regnell 249* in part, of which we have found six duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at S, as the lectotype.

Acalypha hassleriana Chodat, Bull. Herb. Boissier, sér. 2, 5: 606. 1905.—TYPE: Paraguay, Canindeyú, Yerbales, Sierra de Maracayú, ad ripam fluminis Jejui guazu, Dec. *E. Hassler 5678* (lectotype designated by Cardiel et al. (2013a: 1302): P barcode P00635268; isolectotypes: B not seen, BM, GH, K, NY, P, UC, W).

Iconography: Not found.

Distribution and habitat: Brazil and Southern South America (Paraguay). Brazilian distribution: Northeast

(Maranhao), Central West (Goiás and Mato Grosso do Sul). Cerrado, 590 m a. s. l. 3 specimens studied (Fig. 4c).

References: Rambo (1960: 9), Angely (1977: 81.4), Sobral et al. (2009: 248) Cardiel et al. (2020: 8).

Notes: *Acalypha hassleriana* is known from Paraguay based on a few old specimens collected between 1845 and 1902. Cardiel and Muñoz Rodríguez (2015) suggested that this species could be extinct in that country. In Brazil, it has been reported from Paraná (Angely 1977), Rio Grande do Sul, and Santa Catarina (Rambo 1960), but we cannot confirm these citations. We found only three Brazilian collections of *A. hassleriana*, from Goiás, Mato Grosso do Sul, and Maranhão.

Acalypha hassleriana belongs to *Acalypha* sect. *Communes* (Cardiel et al. 2013a), and can be distinguished mainly by its usually deeply cordate leaf blades covered with glandular trichomes.

Acalypha herzogiana Pax & K.Hoffm., Meded. Rijks-Herb. 40: 24. 1921.—TYPE: Bolivia, Santa Cruz, between Pirai River and Cuchi River, 450 m a. s. l., Jan 1911, *T. Herzog 1453* (lectotype designated by Cardiel et al. (2013b: 159): S number S-R-7754; isolectotypes: B presumed destroyed [B neg. F-5294], and Z).

- = *Acalypha nitschkeana* Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 88. 1924.—TYPE: Paraguay, Canindeyú, Sierra de Maracayu, 1898–1899, *E. Hassler 5125* (lectotype designated by Cardiel and Muñoz-Rodríguez (2015: 396): P barcode P00645401; isolectotypes: B presumed destroyed [B neg. F5302], BM, F, K, MO, NY, P).

Iconography: Cardiel and Muñoz-Rodríguez (2015: 398, fig. 4).

Description: Steinmann and Levin (2011), Sousa et al. (2017: 345).

Distribution and habitat: Brazil, Western South America (Bolivia), and Southern South America (Argentina and Paraguay). Brazilian distribution: Southeast (São Paulo); South (Paraná, Rio Grande do Sul). Atlantic Forest, 500–600 m a. s. l. 13 specimens studied (Fig. 4d).

References: Rambo (1960: 10) sub *A. nitschkeana*, Carneiro and Irgang (2005: 177) sub *A. nitschkeana*, Berry et al. (2007), Sobral et al. (2009: 248) sub *A. nitschkeana*, Cardiel et al. (2010: 963), Steinmann and Levin (2011), Cardiel et al. (2013b), Sousa et al. (2017: 345).

Notes: In addition to the wild specimens found of this species, we also found several specimens of a cultivar of *Acalypha herzogiana*, usually from gardens or urban areas. This cultivar is of uncertain origin and is characterized by the showy terminal pistillate inflorescences formed by numerous densely clustered, ebracteate, pistillate flowers. It was studied by Steinmann and Levin (2011), who hypothesized that it is the result of homeotic mutation resulting in the stamens being replaced by styles. We found this cultivar of *A. herzogiana* in Goiás, Parana, Rio de Janeiro, and Santa Catarina (14 specimens studied).

Acalypha inselbergensis Cardiel & I. Montero, Phytotaxa 356(2): 162. 2018.—TYPE: Brazil, Pernambuco, Município Brejo da Madre de Deus, rock outcrop at the north shore of the Sitio Oítis dam, 560 m a. s. l., 08°05. 306' S, 36°22. 909' W, 16 Dec 1999, L. Krause and A. Liebig 276 (holotype: RB barcode RB00752960S; isotypes LZ, PEUFR, ROST, and S number S11-29219).

Iconography and description: Cardiel and Montero (2018: 162, fig. 2).

Distribution and habitat: Endemic to Brazil: Northeast (Alagoas, Bahia, Pernambuco, Rio Grande do Norte, and Sergipe). Caatinga, 200–700 m a. s. l. 38 specimens studied (Fig. 4e).

References: Maciel-Júnior et al. (2020), Cardiel et al. (2020: 8).

Notes: *Acalypha inselbergensis* was recently described based on a single collection found on a granitic rocky outcrop (inselberg) in northeastern Pernambuco. However, very shortly afterward, it was discovered that *A. inselbergensis* is a widely distributed species in the Caatinga Domain of Brazilian northeast (Marciel et al. 2020). This species was frequently confused with *Acalypha multicaulis* but can be easily distinguished by the entire pistillate bracts (vs. dentate in *A. multicaulis*) and the shiny exudate that covers the entire plant (absent in *A. multicaulis*).

Acalypha klotzschii [*klotzchii*] Baill., Adansonia 5: 231. 1865.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, 1831–1833, C. Gaudichaud-Beaupré 1157 (lectotype **designated here**: P barcode P00635229; isolectotypes: B presumed destroyed [B neg. F-5311], G barcode G00383720, G-DC barcode G00324500, and P barcodes P00635232 and P00635234). Remaining syntypes: Brazil, Rio de Janeiro, Macaé “Macaie”, s.d., A. Saint-Hilaire Cat. B² n° 168 (P barcodes P00635230, P00635231, and P00635233); Brazil, s.loc., s.d., L. Riedel s.n. (B presumed destroyed, F number

1012410, P barcodes P04839470, P04839472, P04839474, and P04839475).

- = *Acalypha prunifolia* Nees & Mart., Nova Acta Acad. Caes. Leop. -Carol. German. Nat. Cur. 11: 37. 1823, **nom. illeg.** (non *A. prunifolia* Kunth), **syn. nov.** ≡ *Ricinocarpus prunifolius* (Nees & Mart.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Bahia, “ad Ilhéus fluvium, Dec 1816, M.A.P., Prinz zu Wied s.n. (Nees von Esenbeck nr. CXVI) (lectotype designated by Moraes et al. (2013: 89): BR barcode BR0000008675118; isolectotype: TO (only the right-hand specimen).
- – *Acalypha longifolia* Baill., Adansonia 5: 231. 1865, **nom. nud.**

Iconography: Not found.

Description: Pax and Hoffmann (1924: 108).

Distribution and habitat: Endemic to Brazil: Northeast (Bahia); Southeast (Espírito Santo, Minas Gerais, and Rio de Janeiro). Atlantic Forest, 150–420 m a. s. l. 53 specimens studied (Fig. 4f).

References: Colla (1836: 11), Müller-Argoviensis (1865: 36, 1866: 856, 1874: 360), Pax and Hoffmann (1924: 108), Cordeiro and Carneiro-Torres (2006: 42), Sobral et al. (2009: 248), sub *A. prunifolia*, Moraes (2013: 89).

Notes: *Acalypha klotzschii* was described based on three different Brazilian collections (syntypes), C. Gaudichaud-Beaupré 1157, A. Saint-Hilaire Cat. B² n° 168, and L. Riedel s.n. We selected the best preserved of those specimens, C. Gaudichaud-Beaupré 1157 at P, as the lectotype.

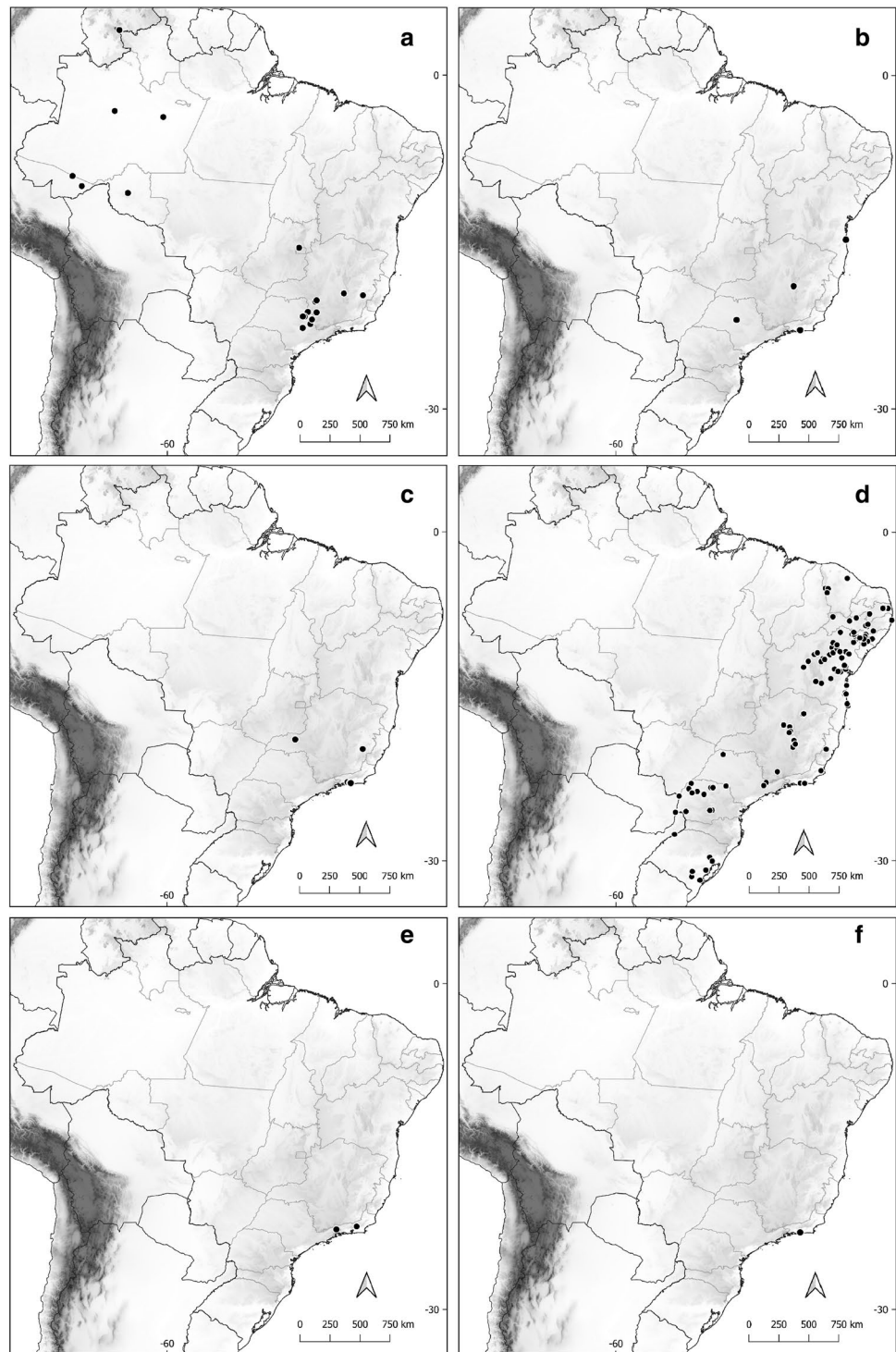
Acalypha macrostachya Jacq., Pl. Hort. Schoenbr. 2: 63, t. 245. 1797. ≡ *Ricinocarpus macrostachyus* (Jacq.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Venezuela: Caracas (lectotype designated by Cardiel (1995b: 233): tab. 245 in Jacq., Pl. Hort. Schoenbr. 2 (1797).

Iconography: Jacquin (1797: t. 245).

Description: Cardiel (1995a: 111), Sousa et al. (2017: 347).

Distribution and habitat: Mexico, Central America, Caribbean, South America, and western South America. Brazilian distribution: North (Acre, Amazonas, Rondônia, and Roraima); Central West (Distrito Federal); Southeast (Minas Gerais and São Paulo). Mainly in Amazonia, also occur in Cerrado and Atlantic Forest, usually in distributed areas, 200–800 m a. s. l. 56 specimens studied (Fig. 5a).

Fig. 5 Distribution map of selected *Acalypha* species in Brazil: **a** *A. macrostachya*; **b** *A. macularis*; **c** *A. martiana*; **d** *A. multicaulis*; **e** *A. peckoltii*; **f** *A. pohliana*



References: Müller-Argoviensis (1866: 810, 1874: 344), Glaziou (1913: 622), Pax and Hoffmann (1924: 144), Angely (1970: 326), Matiko Sano et al. (2008: 736), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260), Sousa et al. (2017: 345).

Notes: *Acalypha macrostachya* is one of the most common and widely distributed species of the genus in northern South America, mainly in the Andean Region, reaching, to a lesser extent, the Amazon basin. It is usually associated with disturbed areas. In Brazil this species shows a disjunct distribution, although we think that the collections from southeastern Brazil (from Minas Gerais and São Paulo)

could have their origin in randomly introduced plants, later naturalized.

Acalypha macularis Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 138. 1924.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, Feb 1882, A. Glaziou 13190 in part (lectotype **designated here**: G barcode G00383670; isolectotypes: B presumed destroyed [B neg. F. 5350], C barcode C10013867, and K barcode K000600542). Remaining syntypes: Brazil, Minas Gerais, Congonhas do Campo, *s.d.*, A. Glaziou 13190 in part (P barcodes P00635291, P00635292, P00635293, and P00635294).

- = *Acalypha ampliata* Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 138. 1924, **syn. nov.**—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, 1857, *N.J. Anderson s.n.* (lectotype **designated here** or perhaps holotype: S number S-R-7734).

Iconography: Not found.

Description: Pax & Hoffmann (1924: 138).

Distribution and habitat: Endemic to Brazil: Northeast (Bahia); Southeast (Minas Gerais, Rio de Janeiro, and São Paulo). Atlantic Forest, 0–50 m a. s. l. 13 specimens studied (Fig. 5b).

References: Sobral et al. (2009: 248), Cardiel et al. (2010: 963).

Notes: The collection of *Acalypha macularis* cited by Pax and Hoffman (A. Glaziou 13190) includes different specimens and localities from Rio de Janeiro and Minas Gerais. The single specimen with Pax’s handwritten label (B, neg. F 5350) is from Rio de Janeiro, and was presumably destroyed (we only know it by a negative at F). We designated as the lectotype the duplicate found at G.

Acalypha martiana Müll.Arg. in Martius, Fl. Bras. 11(2): 359. 1874. ≡ *Ricinocarpus martianus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Minas Gerais, “Pirrahi et Mathias Ramor”, *J.B.E. Pohl 273* (lectotype **designated here**: W barcode W0059996; isolectotypes: G barcode G00434140 in part and W barcode W0059995). Remaining syntypes: Brazil, Minas Gerais, “in silvis primaevis ad praesidium S. João Baptista”, *C.P. F. von Martius 1041*, G barcode G00434140 in part, M barcodes M0239455, M0239456 and M0239457.

- = *Acalypha aspericocca* Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 112. 1924, **syn. nov.**—

TYPE: Brazil, Rio de Janeiro, Morro da Bica, Casadura “Serra de Bica” *s.d.*, A. Schenck 1917 (holotype: B presumed destroyed [B neg. F 5297]).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 111).

Distribution and habitat: Endemic to Brazil: Southeast (Minas Gerais and Rio de Janeiro). Atlantic Forest, 100–600 m a. s. l. 16 specimens studied (Fig. 5c).

References: Müller-Argoviensis (1874: 359), Pax and Hoffmann (1924: 111), Angely (1970: 327), Sobral et al. (2009: 248), Cardiel et al. (2010: 963), Cordeiro et al. (2011: 260).

Notes: *Acalypha martiana* was described based on two different Brazilian collections (syntypes), *J.B.E. Pohl 273* and *C.P. F. von Martius 1041*. We selected the best preserved of those specimens, *J.B.E. Pohl 273* at W, as the lectotype.

Acalypha multicaulis Müll.Arg., Linnaea 34: 53. 1865, **nom. cons. prop. in prep.** ≡ *Ricinocarpus multicaulis* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow s.n.* (neotype designated by Cardiel et al. (2013b: 163): K; isoneotype: G barcode G00439914).

- = *Acalypha pruriens* Nees & Mart., Nova Acta Acad. Caes. Leop. -Carol. German. Nat. Cur. 11: 36. 1823, **nom. rej. prop. in prep.** ≡ *Ricinocarpus pruriens* (Nees & Mart.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Bahia, “circa Ilhéos, flumen, ad aquas et at vias Novembri et Decembri”, “Rio da Cachoeira,” Dec 1816–Jan 1817, *M.A.P., Prinz zu Wied s.n.* (85). (lectotype designated by Moraes et al. (2013: 89): BR barcode BR0000008675804 [annotated by Nees]; isolectotype: BR0000008674456).
- = *Acalypha ruderalis* Mart. ex Colla, Herb. Pedem. 5: 114. 1836, **nom. rej. prop. in prep., syn. nov.**—TYPE: Brazil, Rio de Janeiro, Magé/Petrópolis, “Serra da Estrella,” *s.d.*, *Anonymous s.n.* (lectotype designated by Moraes et al. (2014: 145): TO).
- *Acalypha tenuicaulis* Baill., Adansonia 5: 24. 1865, **syn. nov.**—TYPE: Brazil, Rio-Grande do Sul, Ibicuí river, 1816–1821, A. Saint-Hilaire *cat. C² n^o. 2622* (lectotype **designated here**: P barcode P00635299; isolectotype: P barcode P00635298).
- = *Acalypha lagoensis* Müll.Arg. in Martius, Fl. Bras. 11(2): 367. 1874, **syn. nov.** ≡ *Ricinocarpus lagoensis* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Brazil, Minas Gerais, Lagoa Santa, *s.d.*, *J.E.B.*

Warming s.n. (lectotype **designated here** or perhaps holotype: C barcode C10013866; isolectotype: G barcode G00383683).

- = *Acalypha multicaulis* var. *tomentella* Müll.Arg. in Martius, Fl. Bras. 11(2): 354. 1874.—TYPE: Brazil, Minas Gerais, Lagoa Santa, 17 Dec 1863, *J.E.B. Warming 1618*. (lectotype **designated here**: C barcode C10013845; isolectotypes: G barcode G00383666, and K barcode K000700524). Remaining syntypes: Brazil, Minas Gerais, Lagoa Santa, *s.d.*, *J.E.B. Warming s.n.* not found; Brazil, São Paulo: Juquitiba “Jiquitiba”, *s.d.*, *L. Riedel 830* not found.
- = *Acalypha multicaulis* var. *tenuispica* Pax & K.Hoffm. in Engl., Pflanzenr. (Heft 85) IV. 147. XVI: 88. 1924.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, *s.d.*, *A. Glaziou 11542*, (lectotype **designated here**: C barcode C10013844; isolectotype: US barcode US00096375).
- – *Acalypha multicaulis* var. *genuina* Müll.Arg. in Martius, Fl. Bras. 11(2): 354, 1874. Designation not validly published.

Iconography: Lourteig and O’Donell (1942: 322, fig. 13; 1943, tab. 92a); Bacigalupo (2005: 172, fig. 83).

Description: Bacigalupo (2005: 172), Sousa et al. (2017: 347).

Distribution and habitat: Brazil, Western South America (Bolivia), Southern South America (Argentina, Paraguay, and Uruguay). Brazilian distribution: Northeast (Alagoas, Bahia, Ceará, Paraíba, Pernambuco, and Sergipe); Southeast (Espírito Santo, Minas Gerais, Rio de Janeiro, and São Paulo); South (Paraná and Rio Grande do Sul). Mainly in Cerrado, also extend to disturbed Atlantic Forest and Caatinga (40–)200–1000 (–1200) m a. s. l. 249 specimens studied (Fig. 5d).

References: Müller-Argoviensis (1866: 887, 1874: 354), Pax and Hoffmann (1924: 179), Angely (1977: 5), Alves (1999: 489), Bacigalupo (2005: 171), Carneiro and Irgang (2005: 177), Cordeiro and Carneiro-Torres (2006: 42), Berry et al. (2007: 2012), Lucena and Alves (2009: 44), Cardiel et al. (2010: 963), Cardiel et al. (2013b: 163), Cardiel and Muñoz-Rodríguez (2015: 397), Hurbath et al. (2016: 494), Sousa et al. (2017: 347), Cardiel et al. (2020: 9).

Notes: *Acalypha tenuicaulis* was described based on a single Brazilian collection, *A. Saint-Hilaire cat. C² n^o. 2622*, of which we have found two duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen at P, as the lectotype.

Acalypha multicaulis var. *tomentella* was described based on three different Brazilian collections (syntypes), *J.E.B. Warming 1618*, *J.E.B. Warming s.n.*, and *L. Riedel 830*. We found specimens only of *J.E.B. Warming 1618*, and designate the best preserved of those, at C, as the lectotype.

Acalypha multicaulis var. *tenuispica* was described based on a single Brazilian collection, *A. Glaziou 11542*, of which we have found two duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen, at C, as the lectotype.

Acalypha multicaulis is sometimes confused with *A. herzogiana* because of their similar suffruticose habit, terminal staminate inflorescences, and similar leaf shape. However, *A. multicaulis* has androgynous, mostly staminate inflorescences, with one to several pistillate bracts at the base. In *A. herzogiana* the inflorescences are always unisexual.

Acalypha peckoltii Müll.Arg. in Martius, Fl. Bras. 11(2): 365. 1874.—TYPE: Brazil, Rio de Janeiro, Canta Gallo, *s.d.*, *T. Peckolt 206* (lectotype **designated here** or perhaps holotype: BR barcode BR000000699794; isolectotypes: BR barcode BR0000006998271, and G barcode G00383728).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 123).

Distribution and habitat: Endemic to Brazil: Southeast (Rio de Janeiro, São Paulo). Atlantic Forest, 50–100 m a. s. l. 3 specimens studied (Fig. 5e).

References: Pax and Hoffmann (1924: 123).

Notes: *Acalypha peckoltii* was described based on a single Brazilian collection, *T. Peckolt 206*, of which we have found three duplicates, only one of them at BR with a handwritten label recognizably by Müller Argoviensis (the duplicate at G is probably a fragment of the same specimen). Due to the lack of a holotype indication, we designate this specimen at BR as the lectotype or perhaps holotype.

Acalypha peckoltii is close to *A. brasiliensis* but can be distinguished by its thin-membranaceous (almost translucent) leaf blades and glabrous ovary (vs. firm membranaceous leaf blades and pubescent ovary in *A. brasiliensis*).

Acalypha pohliana Müll.Arg. in Martius, Fl. Bras. 11(2): 360. 1874. ≡ *Ricinocarpus pohlianus* (Müll.Arg.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Brazil, Rio de Janeiro, “Paz Copez ad san João”, 1817–1821, *J.B.E. Pohl 3430* (lectotype **designated here** or perhaps holotype: W barcode W0059994; isolectotypes: W barcode W0059933, F barcode 839285, and G barcode G00383722).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 111).

Distribution and habitat: Endemic to Brazil: Southeast (Rio de Janeiro). Atlantic Forest, c. 100 m a. s. l. 3 specimens studied (Fig. 5f).

References: Pax and Hoffmann (1924: 111), Sobral et al. (2009: 248).

Notes: *Acalypha pohliana* was described based on a single Brazilian collection, *J.B.E. Pohl 3430*, of which we have found four duplicates at F, G, and W. Due to the lack of holotype indication, we designate the single specimen with a label clearly in the author's hand, at W, as the lectotype or perhaps holotype.

Acalypha pohliana is only known from the type gathering collected over 200 years ago in a habitat profoundly transformed by human activity. We cannot rule out the possibility that the species is now extinct.

Acalypha poiretii Spreng., Syst. Veg. 3: 879. 1826. ≡ *Ricinocarpus poiretii* (Spreng.) Kuntze, Revis. Gen. Pl. 3(2): 618. 1891.—TYPE: Unknown country, “Amer. trop.”, *s.d.*, *Anonymous s.n.* (lectotype **designated here** or perhaps holotype: P-LAM barcode P00382110).

Iconography: Lourteig and O'Donnell (1942: 325, fig. 17; 1943, tab. 86).

Description: Sousa et al. (2017: 347).

Distribution and habitat: South-central USA, Mexico, Central America, Caribbean, Northern South America, Brazil, Western South America (Bolivia), Southern South America (Argentina). Brazilian distribution: North (Amazonas and Pará); Northeast (Alagoas, Bahia, Ceará, Pernambuco, Piauí, Rio Grande do Norte, and Sergipe); Central West (Distrito Federal); Southeast (Espírito Santo, Rio de Janeiro, and São Paulo); South (Santa Catarina). Amazonia, Caatinga, Cerrado and Atlantic Forest; ruderal plant usually associated with disturbed areas, 0–650 m a. s. l. 171 specimens studied (Fig. 6a).

References: Müller-Argoviensis (1866: 879, 1874: 368), Pax and Hoffmann (1924: 125), Alves (1999: 489), Cordeiro and Carneiro-Torres (2006: 42), Berry et al. (2007: 2013), Lucena and Alves (2009: 44), Sobral et al. (2009: 248), Cardiel et al. (2010: 964), Cardiel et al. (2013b: 164), De Sousa and Alves (2014), Cardiel and Muñoz-Rodríguez (2015: 399), Sousa et al. (2017: 347).

Notes: *Acalypha poiretii* was described based on a single collection from tropical America, *Anonymous s.n.*, of which we have found a single specimen at P-LAM. Due to the lack of holotype indication, we designate it as the lectotype or perhaps holotype.

Acalypha radicans Müll.Arg., Linnaea 34: 39. 1865.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow s.n.* (lectotype **designated here** or perhaps holotype: K barcode K001206653).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 126).

Distribution and habitat: Endemic to Brazil: Southeast (Rio de Janeiro). Atlantic Forest, 25 m a. s. l. 2 specimens studied (Fig. 6b).

References: Müller-Argoviensis (1866: 865, 1874: 368), Pax and Hoffmann (1924: 126), Cardiel et al. (2010: 964).

Notes: *Acalypha radicans* was described based on a single Brazilian collection, *F. Sellow s.n.*, of which we have found a single specimen at K. Due to the lack of holotype indication, we designate it as the lectotype or perhaps holotype.

Pax and Hoffmann (1924) cited the specimen *Ule 4786* [B neg. F5313] from Rio de Janeiro as belonging to this species. We have not been able to find this collection, and it was probably destroyed in the bombing of Berlin herbarium.

Acalypha scandens Benth., Hooker's J. Bot. Kew Gard. Misc. 6: 329. 1854. ≡ *Ricinocarpus scandens* (Benth.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Brazil, Pará, On the island of the Amazon opposite Santarem, *s.d.*, *R. Spruce 1000* (lectotype **designated here** or perhaps holotype: K barcode K000600539; isolectotypes: BM barcode BM000939656, and K barcode K000913015).

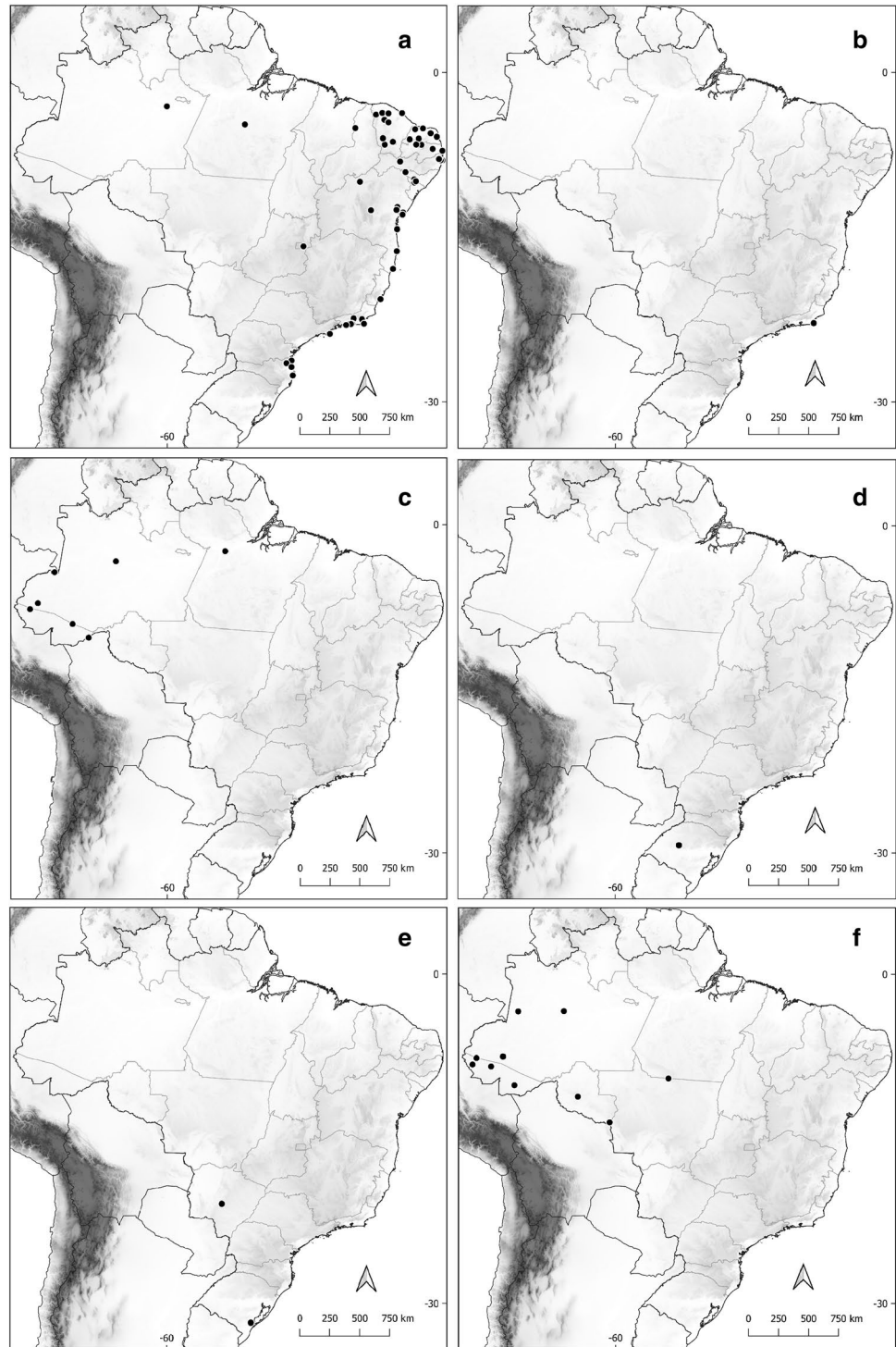
Iconography and description: Cardiel (1995a: 109, fig. 24).

Distribution and habitat: Northern South America, Brazil, and Western South America. Brazilian distribution: North (Acre, Amazonas, and Pará). Amazonia, 10–200 m a. s. l. 27 specimens studied (Fig. 6c).

References: Müller-Argoviensis (1866: 809, 1874: 346), Pax and Hoffmann (1924: 147), Cardiel et al. (2010: 964).

Notes: *Acalypha scandens* was described based on a single Brazilian collection, *R. Spruce 1000*, of which we have found three specimens at BM and K. Due to the lack of holotype indication, we designate the single specimen with

Fig. 6 Distribution map of selected *Acalypha* species in Brazil: **a** *A. poiretii*; **b** *A. radicans*; **c** *A. scandens*; **d** *A. sehnemii*; **e** *A. senilis*; **f** *A. stachyura*



a label clearly in the author's hand, at K, as the lectotype or perhaps holotype.

Acalypha sehnemii Allem & Irgang, Bol. Soc. Argent. Bot. 17: 305. 1976.—TYPE: Brazil, Rio Grande do Sul, Município de Tupanciretã (Jari), 26 Jan 1942, *B. Rambo s.n.*

(holotype: PACA barcode PACA009470; isotypes: PACA barcodes PACA009095, and PACA009200).

Iconography and description: Costa Allem and Irgang (1976: 306, fig. 3).

Distribution and habitat: Endemic to Brazil: South (Rio Grande do Sul). Pampa, 465 m a. s. l. 3 specimens studied (Fig. 6d).

References: Cardiel et al. (2010: 963). Berry et al. (2007: 2013).

Acalypha senilis Baill., *Adansonia* 5: 228. 1865. \equiv *Ricinocarpus senilis* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 618. 1891.—TYPE: Uruguay: “Banda oriental del Uruguay, cerro das las Animas”, 1816–1821, A. *Saint-Hilaire cat. C² n^o. 2162* (holotype: P barcode P00645421).

Iconography: Not found.

Description: Pax and Hoffmann (1924: 40).

Distribution and habitat: Brazil and Southern South America (Argentina, Paraguay, and Uruguay). Brazilian distribution: Central West (Mato Grosso do Sul); South (Rio Grande do Sul). Cerrado and Pampa, 50–500 m a. s. l. 4 specimens studied (Fig. 6e).

References: Müller-Argoviensis (1866: 841, 1874: 351), Pax and Hoffmann (1924: 40), Cardiel et al. (2013a: 1301) Cardiel et al. (2020: 8).

Notes: *Acalypha senilis* belongs to *Acalypha* sect. *Communes* (Cardiel et al. 2013a). It is frequently confused with *A. communis* subsp. *communis*. *Acalypha senilis* can be distinguished by its pistillate bracts without glandular trichomes, and its ovate to triangular or subrounded leaf blades (vs. pistillate bracts with glandular trichomes and ovate to lanceolate leaf blades in *A. communis* subsp. *communis*).

Acalypha stachyura Pax, *Repert. Spec. Nov. Regni Veg.* 7: 110. 1909.—TYPE: Bolivia, La Paz: Charopampa und San Carlos bei Mapiri, 750 m a. s. l., Aug–Nov 1909, O. Buchtien 1315 (lectotype designated by Cardiel and Muñoz (2012a: 13): M barcode M0026939; isoelectotype: US barcode US01230493).

Iconography and description: Cardiel (1995a: 80, fig. 21).

Distribution and habitat: Brazil and Western South America. Brazilian distribution: North (Acre, Amazonas, and Rondonia); Central West (Mato Grosso). Amazonia, 200–400 m a. s. l. 44 specimens studied (Fig. 6f).

References: Pax and Hoffmann (1924), Cardiel et al. (2010: 964).

Acalypha stricta Poepp. in Poepp. & Endl., *Nov. Gen. Sp. Pl.* 3: 21, pl. 225. 1845. \equiv *Ricinocarpus strictus* (Poepp.) Kuntze, *Revis. Gen. Pl.* 2: 618. 1891.—TYPE: Peru, Huánuco, Pampayacu “Pampayaco”, Jul, E. *Poeppig s.n.* (lectotype **designated here** or perhaps holotype: W; isoelectotypes: F barcode F0040619F, and P barcodes P04839213, and P04839122).

- = *Acalypha urostachya* Baill., *Adansonia* 5: 229. 1865, **syn. nov.**—TYPE: Brazil, *s.loc.*, *s.d.*, *Anonymous s.n.* (holotype: P barcode P00645426).
- = *Acalypha mapirensis* var. *pubescens* Pax & K.Hoffm. in Engl., *Pflanzenr. (Heft 85) IV.* 147. XVI: 65. 1924, **syn. nov.**—TYPE: Brazil, Acre, Alto Amazonas, rio Acre, seringal São Francisco, *s.d.*, E. *Ule* 9535 (lectotype designated by Cardiel et al. (2014: 171): NY barcode NY246129).
- = *Acalypha mapirensis* var. *scabra* Pax & K.Hoffm. in Engl., *Pflanzenr. (Heft 85) IV.* 147. XVI: 65. 1924, **syn. nov.**—TYPE: Brazil, Acre, Alto Amazonas, rio Acre, Seringal São Francisco, E. *Ule* 9535b (lectotype **designated here**: G barcode G00383667; isoelectotypes: NY barcode 00246129, and US barcode US00096372). Remaining syntype: Peru, Puna, Sandia, Chunchusmayo, 900 m a. s. l., *s.d.*, *Weberbauer 1174* (B presumed destroyed).

Iconography: Poeppig and Endlicher (1845: pl. 225).

Description: Pax and Hoffmann (1924).

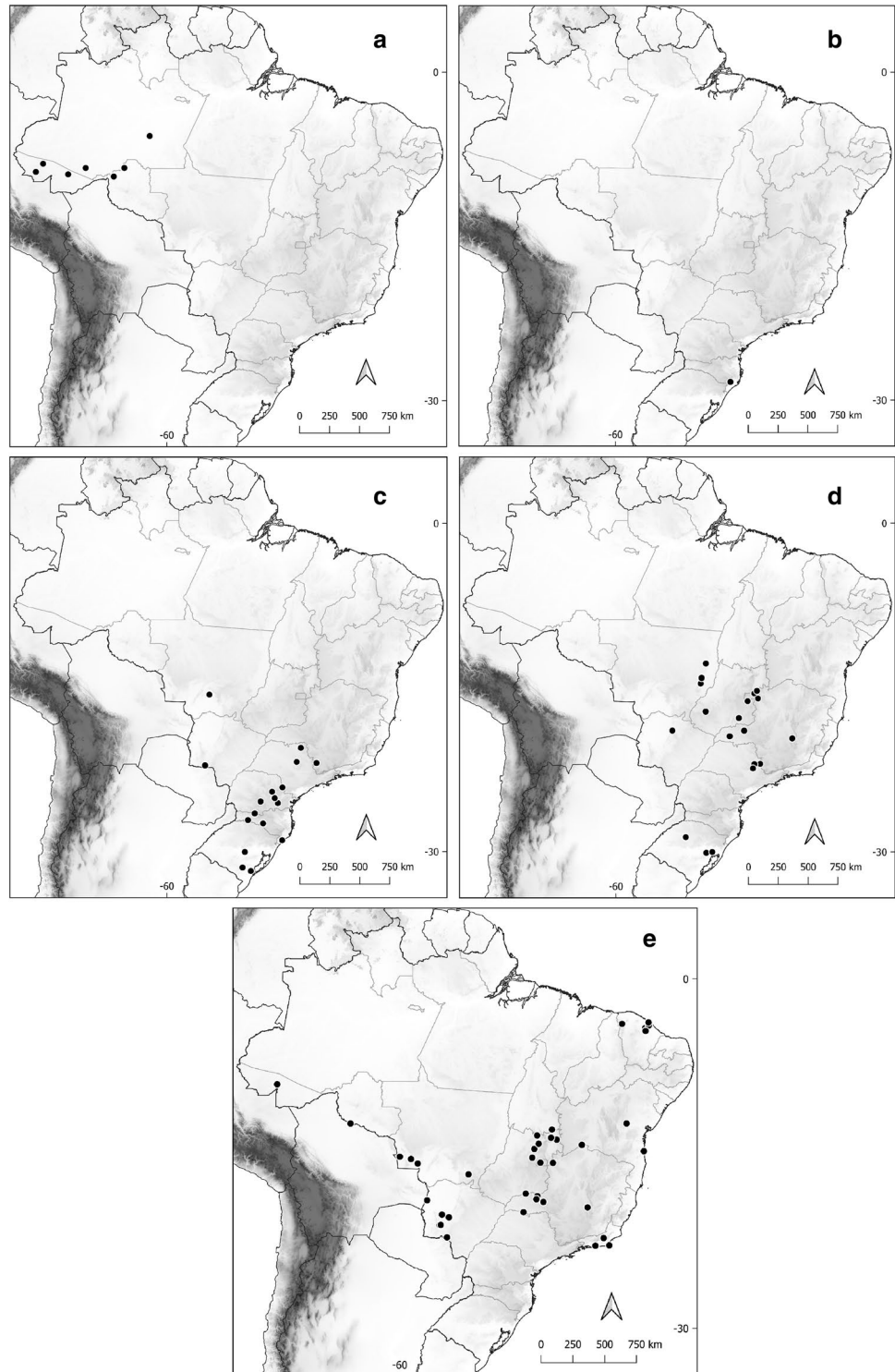
Distribution and habitat: Brazil and Western South America (Peru and Bolivia). Brazilian distribution: North (Acre, Amazonas, and Rondonia). Amazonia, 100–200 m a. s. l. 43 specimens studied (Fig. 7a).

References: Müller-Argoviensis (1866: 827), Pax and Hoffmann (1924: 64), Cardiel et al. (2010: 964), Berry et al. (2007).

Notes: *Acalypha stricta* was described based on a single Peruvian collection, E. *Poeppig s.n.*, of which we have found four specimens at F, P, and W. Due to the lack of holotype indication, we designate the single specimen with a label clearly in the author’s hand, at W, as the lectotype or perhaps holotype.

Acalypha mapirensis var. *scabra* was described based on two different Brazilian collections (syntypes), E. *Ule* 9535b and *Weberbauer 1174*. We selected the best preserved specimen of the single collection we found, E. *Ule* 9535b at G, as the lectotype.

Fig. 7 Distribution map of selected *Acalypha* species in Brazil: **a** *A. stricta*; **b** *A. uleana*; **c** *A. variabilis*; **d** *A. vellamea*; **e** *A. villosa*



Acalypha uleana L.B.Sm. & Downs, Phytologia 22(2): 90. 1971.—TYPE: Brazil, Santa Catarina, Bom Jardim da Serra, slopes by source of Rio Capivare, Serra Geral, Feb 1891, *E. Ule* s.n. (holotype: HBG barcode HBG516637; isotype: MO not found).

Distribution and habitat: Endemic to Brazil: South (Santa Catarina). Atlantic Forest, 1300 m a. s. l. 1 specimen studied (Fig. 7b).

Iconography and description: Smith (1971: 91, plate 1, figs. 16–18).

References: Berry et al (2007: 2013), Sobral et al. (2009: 248), Cardiel et al. (2010: 964).

Notes: *Acalypha uleana* is known only from the type specimen that was collected over a century ago, so we cannot rule out the possibility that the species is now extinct.

Acalypha variabilis Klotzsch ex Baill., *Adansonia* 5: 226. 1865.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow s.n.* (lectotype designated by Cardiel et al. (2013a: 1300): P barcode P000635221; isolectotype: P barcode P000635222).

- = *Acalypha hirta* Spreng., *Syst. Veg.* 4 (2, *Curr. Post.*): 315. 1827, **nom. illeg.** (non *Acalypha hirta* Cav.) ≡ *Acalypha communis* var. *hirta* (Spreng.) Müll.Arg., *Linnaea* 34: 24. 1865.—TYPE: Brazil, Rio Grande, *s.d.*, *F. Sellow s.n.* (lectotype designated by Cardiel et al. (2013a: 1301): W number W-22068; isolectotypes: B and W).
- = *Acalypha variabilis* var. *longifolia* Baill., *Adansonia* 5: 227. 1865.—TYPE: Brazil, Rio Grande do Sul, “Capilha de Mercedes”, *A. Saint-Hilaire cat. C2 n° 2430 bis* (lectotype **designated here** or perhaps holotype: P barcode P04839509; isolectotypes: P barcodes P04839508, and P04839512).
- = *Acalypha variabilis* var. *elliptica* Baill., *Adansonia* 5: 227. 1865.—TYPE: Brazil, Rio de Janeiro, Rio de Janeiro, *A. Saint-Hilaire cat. C? n° 64* (not found).
- = *Acalypha variabilis* var. *urticoides* Klotzsch ex Baill., *Adansonia* 5: 227. 1865.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow s.n.* (lectotype designated by Cardiel et al. (2013a: 1300): W number W-167595; isolectotypes: P barcodes P00635223, P00635224, and P00635225, and W number W-22060).
- = *Acalypha betuloides* Klotzsch ex Baill., *Adansonia* 5: 228. 1865.—TYPE: Brazil, *s.loc.*, *s.d.*, *F. Sellow s.n.* (lectotype designated by Cardiel et al. (2013a: 1300): P barcode P00635220; isolectotype: BR barcode BR0000005838219).
- = *Acalypha humilis* Pax & K.Hoffm., *Repert. Spec. Nov. Regni Veg.* 8: 162. 1910.—TYPE: Brazil, Rio Grande do Sul, “Estancia Lourenço Gomez”, 500 m a. s. l., 18 Oct 1904, *A. Bornmüller 229* (lectotype **designated here** or perhaps holotype: M barcode M0239434; isolectotype: JE barcode JE 00004660).

Iconography: Cardiel and Muñoz-Rodríguez (2015: 402, fig. 5).

Description: Pax and Hoffmann (1924).

Distribution and habitat: Brazil, Western South America (Bolivia), Southern South America (Argentina and

Paraguay). Brazilian distribution: Central West (Mato Grosso and Mato Grosso do Sul); Southeast (Minas Gerais and São Paulo); South (Parana, Rio Grande do Sul, and Santa Catarina). Mainly in Cerrado and Pampa, also extend to disturbed Atlantic Forest, 500–1000 m a. s. l. 86 specimens studied (Fig. 7c).

References: Müller-Argoviensis (1866: 841), Pax and Hoffmann (1924: 37), Cardiel et al. (2013a: 1300, 2013b: 171).

Notes: *Acalypha variabilis* var. *longifolia* was described based on a single Brazilian collection, *A. Saint-Hilaire cat. C2 n° 2430 bis*, of which we have found three duplicates at P. Due to the lack of holotype indication, we designate the single specimen with a label clearly in the author’s hand, as the lectotype or perhaps holotype.

Acalypha humilis was described based on a single Brazilian collection, *A. Bornmüller 229*, of which we have found two duplicates at JE and M. Due to the lack of holotype indication, we designate the single specimen with a label clearly in the author’s hand (Ferdinand Pax), at M, as the lectotype or perhaps holotype.

Acalypha variabilis is here reported from Brazil for the first time.

Acalypha velamea Baill., *Adansonia* 5: 228. 1865. ≡ *Ricinocarpus velameus* (Baill.) Kuntze, *Revis. Gen. Pl.* 2: 618. 1891.—TYPE: Brazil, Mato Grosso/Mato Grosso do Sul, “Province de Mato-Grosso”, *s.d.*, *C. Gaudichaud-Beaupré 246* (holotype: P barcode P000645427).

- = *Acalypha communis* var. *brevipes* Müll.Arg., *Linnaea* 34: 24. 1865. ≡ *Acalypha brevipes* (Müll.Arg.) Müll.Arg. in Martius, *Fl. Bras.* 11(2): 348. 1874, **nom. illeg.** (non *Acalypha brevipes* Raf.) ≡ *Ricinocarpus brevipes* (Müll.Arg.) Kuntze, *Revis. Gen. Pl.* 2: 618. 1891.—TYPE: Brazil, *s.loc.*, *s.d.*, *P.C.D. Claussen 776* (not found).
- = *Acalypha communis* f. *decumbens* Müll.Arg., *Linnaea* 34: 24. 1865.—TYPE: Brazil, *s.loc.*, *s.d.*, *L. Riedel s.n.* (lectotype designated by Cardiel et al. (2013a: 1301): K).
- = *Acalypha communis* var. *pallida* Müll.Arg. in Martius, *Fl. Bras.* 11(2): 349. 1874.—TYPE: Brazil, Minas Gerais, Lagoa Santa, *s.d.*, *J.E.B. Warming s.n.* (lectotype **designated here**: W number W-7706; isotypes: C and G).
- – *Acalypha goyazensis* Glaz., *Bull. Soc. Bot. France* 59(3): 623.1913 [“1912”], **nom. nud.**, pro syn. of *A. brevipes* (Müll.Arg.) Müll.Arg.

Iconography: Not found.

Description: Müller-Argoviensis (1866: 839).

Distribution and habitat: Brazil and Southern South America (Argentina and Paraguay). Brazilian distribution: Central West (Goiás, Mato Grosso, and Mato Grosso do Sul); Southeast (Minas Gerais and São Paulo); South (Rio Grande do Sul). Cerrado and Pampa, 500–1000 m a. s. l. 84 specimens studied (Fig. 7d).

References: Müller-Argoviensis (1866: 839), Berry et al (2007: 2013), Sobral et al. (2009: 248), Cardiel et al. (2010: 964), Cardiel et al. (2013a: 1301), Cardiel and Muñoz-Rodríguez (2015: 403), Sousa et al. (2017: 347).

Notes: *Acalypha communis* var. *pallida* was described based on a single Brazilian collection, *J.E.B. Warming s.n.* Due to the lack of holotype indication, we designate the best preserved specimen, at W, as the lectotype.

Acalypha villosa Jacq., Enum. Syst. Pl. 32. 1760. ≡ *Gymnalypha jacquinii* (Jacq.) Griseb., Bonplandia (Hannover) 6: 2. 1858. ≡ *Ricinocarpus villosus* (Jacq.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: Colombia, Bolívar, Cartagena (lectotype designated by Howard and Bornstein (1989: 10): tab. 183, fig. 16 in Jacq., Select. Stirp. Amer. Hist. (1763); epitype designated by Cardiel (1995b: 232): tab. 47 in Jacq., Hort. Bon. Vindov. 3 (1776).

- = *Acalypha linostachya* Baill., Adansonia 5: 235. 1865.—TYPE: Brazil, Goiás, entre Goyaz et Cujaba, Dec 1844, *H.A. Weddell 2914* (lectotype designated by Muñoz-Rodríguez et al. (2014: 213): P barcode P00645430; isolectotypes: P barcodes P00645431, and P00645429).
- = *Acalypha villosa* Jacq. var. *trichopoda* Müll.Arg. in Martius, Fl. Bras. 11(2): 340. 1874.—TYPE: Brazil, Minas Gerais, Lagoa Santa, s.d., *J.E.B. Warming 1567* (lectotype **designated here**: G barcode G00383701; isolectotypes: C barcode C10013881, and P barcode P00645428).
- = *Acalypha subvillosa* Müll.Arg. in Martius, Fl. Bras. 11(2): 341. 1874.—TYPE: Brazil, Goiás, “prope Caretão”, s.d., *J.B.E. Pohl 1682* (lectotype designated by Muñoz-Rodríguez et al. (2014: 213): W; isolectotypes: G barcode G00383702, and W).

Iconography: Lourteig and O’Donell (1942: 330, fig. 19; 1943, tab. 95).

Description: Cardiel (1995a: 27).

Distribution and habitat: Mexico, Central America, Caribbean, Northern South America, Brazil, Western South

America, Southern South America (Argentina, Paraguay). Brazilian distribution: North (Acre, Rondônia, and Tocantins); Northeast (Bahia and Ceará); Central West (Goiás, Mato Grosso, and Mato Grosso do Sul); Southeast (Minas Gerais, Rio de Janeiro, and São Paulo). Mainly in Caatinga and Cerrado, rarely in Amazonia and Atlantic Forest, (50–) 200–1000 m a. s. l. 194 specimens studied (Fig. 7e).

References: Müller-Argoviensis (1866: 802, 1874: 339), Glaziou (1913: 624), Pax and Hoffmann (1924: 16), Angely (1970: 327, 1977: 81–6), Cordeiro and Carneiro-Torres (2006: 42), Berry et al. (2007: 2013), Matiko Sano et al. (2008: 737), Sobral et al. (2009: 248), Cardiel et al. (2010: 964), Cordeiro et al. (2011: 260), Cardiel et al. (2013a: 173), Muñoz-Rodríguez et al. (2014). Sousa et al. (2017: 347).

Notes: *Acalypha villosa* var. *trichopoda* was described based on a single Brazilian collection, *A.J.E.B. Warming 1567*, of which we have found three duplicates. Due to the lack of a holotype indication, we designate the best preserved specimen, at G, as the lectotype.

Acalypha villosa is the most widely distributed species in this genus in the New World. It is the only Brazilian species belonging to *Acalypha* subgenus *Linostachys* which is characterized by the pistillate flowers pedicellate, calyx with 4 or 5 sepals, and the subtending bracts inconspicuous, not becoming foliaceous in fruit.

Introduced or cultivated species

Acalypha alopecuroidea Jacq., Collectanea 3: 196. 1789. ≡ *Ricinocarpus alopecuroides* (Jacq.) Kuntze, Revis. Gen. Pl. 2: 617. 1891.—TYPE: Venezuela (lectotype designated by Cardiel (1995a, b: 233): tab. 620 in N.J. von Jacquin, Icones plantarum, pariorum 3 (1792)).

Acalypha alopecuroidea is native to Central America and the Caribbean region, and has been introduced to the USA and northern South America (Cardiel et al 2013a). In Brazil we only found two old collections from Goiás state. This species can be confused with *A. arvensis* Poepp., but it is easily distinguished by its acuminate leaf blades with glandular trichomes, some pistillate inflorescences terminal, and unbranched styles, vs. acute leaf blades without glandular trichomes, all pistillate inflorescences axillary, and branched styles in *A. arvensis*.

Acalypha hispida Burm.f., Fl. Ind. 303, pl. 61, f. 1. 1768.—TYPE: Lám. 61 in Burman, Flora Indica: 302 (1768).

Acalypha hispida is a shrub native to Melanesia or Malesia (Sagun et al. 2010); it is frequently used as an ornamental plant in gardens throughout the tropics, and sometimes becomes naturalized.

It is easy to distinguish by its extremely long, and densely flowered pistillate inflorescences with red stigmas. In Brazil we found 18 collections from: **North** (Amazonas), **North-east** (Bahia, Piauí, Rio Grande do Norte), **Central West** (Goiás), **Southeast** (Minas Gerais, Rio de Janeiro), and **South** (Paraná).

Acalypha wilkesiana Müll.Arg. in DC., Prodr. 15(2): 817. 1866, **nom. cons. prop.**—TYPE: Fiji, “in insulis Fidji”, s.d., *Wilkes Expedition s.n.* (U.S. Expl. Exped. under Capt. Wilkes) (lectotype **designated here**: G-DC barcodes G00324021 and G00324022; isolectotypes: GH barcode GH00045512, K barcode K000959008, and US barcodes US00096423 and US00096424). Remaining syntype: *B.C. Seeman s.n.* (GH and US barcode US0096425).

Native to the Melanesian island of Fiji (Sagun et al. 2010), *Acalypha wilkesiana* is used as an ornamental plant in gardens throughout the tropics and frequently appears to be naturalized. In Brazil we found 96 collections from: **Northeast** (Alagoas, Bahia, Paraíba, Pernambuco, Piauí, Rio Grande do Norte); **Central West** (Mato Grosso do Sul); **Southeast** (Espírito Santo, Minas Gerais, Rio de Janeiro e São Paulo); and **South** (Paraná, Rio Grande do Sul, Santa Catarina). *Acalypha wilkesiana* is easily identifiable by its large and broad leaves, usually variegated from coppery green to red colored.

Acalypha wilkesiana was described based on two different collections (syntypes), *Wilkes expedition s.n.* and *B.C. Seeman s.n.* We selected the best preserved of those specimens, *Wilkes Expedition s.n.*, at G-DC, as the lectotype. There are two sheets at G-DC with different barcodes (G00324021 and G00324022) but numbered “1” and “2” in the upper right corner, implying that this is one specimen over two sheets.

Excluded species

Acalypha riedeliana Baill. Adansonia 5: 231. 1865. ≡ *Ricinocarpus riedelianus* (Baill.) Kuntze, Revis. Gen. Pl. 2: 618. 1891.—TYPE: “in caldariis parisiensibus culta”, 1864. *L. Riedel s.n.* (holotype: P barcode P00645419).

Acalypha riedeliana was described by Henry Baillon on the basis of a plant grown from seed in the Paris botanical garden greenhouse. Baillon assumed that this specimen came from a collection made by the German botanist Ludwig Riedel in Brazil (no location specified). Subsequent references

of this species (Müller-Argoviensis 1866: 857, 1874: 356, Pax and Hoffmann 1924: 114, Cardiel et al. 2010: 964) simply repeat this information about its origin.

After studying the single type specimen of *Acalypha riedeliana*, we consider that it belongs to *A. integrifolia* Willd., a species only known from Mauritius and Reunion, in the Western Indian Ocean Region. The type specimen in P does not have a Riedel handwritten label (as almost all of his Paris specimens do). The only handwritten label belongs to Baillon who indicated the supposed Brazilian origin. The plant grown in Paris probably came from one of the French expeditions to the Indian Ocean islands carried out in the nineteenth century. Jean Michel Claude Richard was director of the Jardin du Roi (currently Jardin de l'État) of Reunion, from 1829 to 1868. Richard sent most of his collections to the Muséum d'Histoire Naturelle of Paris. Louis Hyacinthe Boivin, a member of the *Expedición Oise* (1846–1852), also sent his plant collections to P (Dorr 1997; Grouzis et al. 2010). Many specimens of *A. integrifolia*, collected by Boivin in Reunion, are deposited in P.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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References

- Alvarez Filho A (1977) Estudo taxonômico das tribos *Acalypheae* Müll.Arg. e *Hippomaneae* Reichenb. (Euphorbiaceae) no Rio Grande do Sul, Brasil. MSc Thesis, UFRGS, Porto Alegre
- Alves MV (1999) Checklist das Euphorbiaceae Juss. ocorrentes no semi-árido Pernambuco. Brasil. Acta Bot Brasil 12(3 suppl 1):485–495. <https://doi.org/10.1590/S0102-33061998000400016>
- Amorim AM, Fiaschi P, Jardim JG, Thomas WW, Clifton BC, de Carvalho AMV (2005) The vascular plants of a forest fragment in Southern Bahia, Brazil. Sida 21:1727–2752
- Angely J (1970) Flora analítica e fitogeográfica do estado do São Paulo, vol. 2. Phytion, São Paulo
- Angely J (1977) Flora Descritiva do Paraná, parte especial: Phanerogame do Paraná, 12a edn. Phytion, São Paulo
- Bacigalupo NM (2005) *Acalypha*. In: Burkart A, Bacigalupo NM (eds) Flora ilustrada de Entre Ríos (Argentina), vol. 6, no 4. Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, pp 170–176
- Bencke GA, Duarte MM (2008) Plano do manejo do Parque Estadual do Tainhas. Porto Alegre
- Bentham G (1844) The Botany of the voyage of H.M.S. Sulphur, London
- Berry PE, Caruzo MBR, Cordeiro I, Esser HJ, Fernández-Casas FJ, Levin GA, Lima LR, Riina R, Wurdack KJ (2007) *Acalypha*. In: Zuloaga O, Morrone O, Belgrano MJ (eds) Catálogo de las plantas vasculares del Cono Sur (Argentina, Sur de Brasil, Chile, Paraguay y Uruguay). Missouri Botanical Garden Press, St. Louis, pp 2010–2014
- BFG (The Brazilian Flora Group) (2015) Growing knowledge: an overview of seed plant diversity in Brazil. Rodriguésia 66:1085–1113
- Cardiel JM (1995b) Tipificación de las especies de *Acalypha* L. (Euphorbiaceae) descritas por Jacquin. Anales Jard Bot Madrid 54:230–233
- Cardiel JM (1999) Contribuciones a la Flora de Venezuela: revisión del género *Acalypha* L. (Euphorbiaceae). Acta Bot Venez 22:255–324
- Cardiel JM, Muñoz-Rodríguez P (2012) Synopsis of *Acalypha* (Euphorbiaceae) of continental Ecuador. PhytoKeys 17:1–17
- Cardiel JM, Muñoz-Rodríguez P (2015) Synopsis of *Acalypha* (Euphorbiaceae) of Argentina, Paraguay, and Uruguay. Ann Missouri Bot Gard 101:384–405
- Cardiel JM (2010) *Acalypha*. In: Forzza RC et al (eds) Catálogo de plantas e fungos do Brasil, vol. 2. Andrea Jakobsson Estúdio, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro, pp 963–964
- Cardiel JM, Muñoz-Rodríguez P, Muñoz F (2013a) Revised taxonomy and nomenclature of *Acalypha* sect. *Communes* (Euphorbiaceae), a complex group of species widespread in the north of the Southern Cone. Taxon 62:1296–1304. <https://doi.org/10.12705/626.11>
- Cardiel JM, Nee M, Muñoz-Rodríguez P (2013b) Synopsis of *Acalypha* L. (Euphorbiaceae) of Peru and Bolivia, with description of a new species. Anales Jard Bot Madrid 70:152–177. <https://doi.org/10.3989/ajbm.2366>
- Cardiel JM, Montero-Muñoz I, Sancho-García I (2018) Three new species of *Acalypha* (Euphorbiaceae, Acalyphoideae) from Argentina, Bolivia, Brazil, and Paraguay. Phytotaxa 356:158–166
- Cardiel JM, Montero-Muñoz I, Ortúñez E, Dorda E, Sancho-García I (2020) Epidermal crystals in *Acalypha* (Euphorbiaceae, Acalyphoideae) as a new taxonomic trait of the genus. Pl Syst Evol 306:83. <https://doi.org/10.1007/s00606-020-01711-6>
- Cardiel JM, Montero-Muñoz I, Muñoz-Rodríguez P, Dorda E, Pardo de Santallana M (2022) *Acalypha* taxonomic information system. Available at: <http://www.acalypha.es>. Accessed Mar 2022
- Cardiel JM (1995a) *Acalypha* (Euphorbiaceae). Flora de Colombia. Monografía n 15. Universidad Nacional de Colombia y Real Jardín Botánico de Madrid C.S.I.C., Madrid, pp 1–155
- Carneiro DS, Cordeiro I, França F (2002) A Família Euphorbiaceae na Flora de Inselbergs da Região de Milagres, Bahia, Brasil. Bol Bot Univ São Paulo 20:31–47. <https://doi.org/10.11606/issn.2316-9052.v20i0p31-47>
- Carneiro AM, Irgang BE (2005) Origem e distribuição geográfica das espécies ruderais da Vila de SantoAmaro, General Câmara, Rio Grande do Sul. Iheringia 60(2):175–188
- Colla A (1836) Herbarium pedemontanum, vol V. Taurini
- Cordeiro I (2004) Flora de Grão-Mogol, Minas Gerais: Euphorbiaceae. Bol Bot Univ São Paulo 22:109–131
- Cordeiro I, Secco I, Cardiel JM, Steinman V, Caruzo MBR, Riina R, Lima LR, Maya-L CA, Berry PE, Carneiro-Torres DE, Pscheidt AC (2010) Euphorbiaceae. In: Forzza RC (ed) Catálogo de Plantas e Fungos do Brasil, vol. 2. Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro, pp 963–989
- Cordeiro I, Carneiro-Torres DS (2006) Euphorbiaceae. In: Barbosa MRV, Sothers C, Mayo S, Gamarra CFL, Mesquita AC (orgs.) Checklist das plantas do Nordeste brasileiro v. 1: Angiospermas e Gymnospermas. Ministério da Ciência e Tecnologia, Brasília, pp 71–74
- Cordeiro I, Rossi B, Pscheidt AC, Maya-L CA (2011) Euphorbiaceae. In: Wanderley MGL et al (eds) Checklist das Spermatophyta do Estado de São Paulo, Brasil, vol 11, no 1a. Biota Neotrop, Sao Paulo, pp 259–260
- Costa Allem A, Irgang BE (1976) Nuevas especies de Euphorbiaceae de América del Sur. I. Bol Soc Argent Bot 17:301–306
- Costa Allem A, Waechter JL (1977) Nuevas especies de Euphorbiaceae de América del Sur II. Revista Brasil Biol 37:83–90
- de Sampaio AJ (1916) A flora de Matto Grosso. Archiv Mus Nac Rio De Janeiro 19:1–125
- De Sousa MJ, Alves O (2014) Espécies úteis da família Euphorbiaceae no Brasil. Revista Cub Pl Med 19:292–309
- Dodson CH, Gentry AH, Valverde FM (1985) La Flora de Jauneche, Los Ríos, Ecuador. Flórlulas de las Zonas de Vida del Ecuador. Banco Central de Ecuador
- Duarte DB, Do Nascimento ATA, Soares DJ (2013) *Amphobotrys ricini* causing gray mold on *Acalypha herzogiana* in Brazil. Austral Pl Dis Notes 8:133–135. <https://doi.org/10.1007/s13314-013-0115-9>
- Ferreira De Sales M, Mayo SJ, Rodal MJN (1998) Plantas vasculares das florestas serranas de Pernambuco - Um Checklist da flora ameaçada dos Brejos de Altitude. Pernambuco, Recife
- Forzza RC et al (2010) Catálogo de plantas e fungos do Brasil, vol. 1. Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro
- Glaziou AFM (1913) Liste des plantes du Brésil Central recueillies en 1861–1895. Bull Soc Bot France 59 (Mém.3): 1–667
- Govaerts R, Frodin DG, Radcliffe-Smith A (2000) World checklist and bibliography of Euphorbiaceae (with Pandaceae), vol. 1. The Board of Trustees of the Royal Botanic Gardens, Kew, London
- Hassemer G, Ferreira PMA, Trevisan R (2015) A review of vascular plants endemisms in Santa Catarina, southern Brazil, highlights critical knowledge gaps and urgent need of conservation efforts. J Torrey Bot Soc 142:78–95. <https://doi.org/10.3159/TORREY-D-14-00033.1>
- Hurbath F, Carneiro DS, Roque N (2016) Euphorbiaceae na Serra Geral de Licínio de Almeida, Bahia. Brasil Rodriguésia 67:489–531. <https://doi.org/10.1590/2175-7860201667217>
- IBGE (2004) Mapa de biomas do Brasil. Primeira Aproximacao. Available at: <http://mapas.ibge.gov.br/>
- Jacquin NJ von (1797) Plantarum rariorum horti caesari schoenbrunnensis 2. Apud C. F. Wappler, Wien
- João RV, Heiden G, Teresinha S, Pennington RT (2011) Campos de Cima da Serra: the Brazilian Subtropical Highland Grasslands show an unexpected level of plant endemism. Bot J Linn Soc 167:378–393

- Kuhlmann M, Kühn E (1947) A flora do Distrito de Ibiti (Ex- Monte Alegre), município de Amparo. Instituto de Botânica, São Paulo
- Lima BV, Soares DJ, Pereira OL, Barreto RW (2008) Natural infection of *Acalypha hispida* and *Jatropha podagrica* inflorescences by *Amphobotrys ricini* in Brazil. *Austral Pl Dis Notes* 3:5–7
- Lingelsheim A (1912) Eine neue *Acalypha* aus der brasilianischen Flora. *Mitt Thüring Bot Ver* 29:48–49
- Lourteig A, O'donnell CA (1942) *Acalyphaeae argentiniae* (Euphorbiaceae). *Lilloa* 7:273–333
- Lourteig A, O'donnell CA (1943) *Acalypha*. In: Descole HR (ed) *Genera et species plantarum argentinarum*, vol. 1. G. Kraft, Buenos Aires, pp 208–226
- Lucena MFA, Alves MVS (2010) Notas taxonômicas para Euphorbiaceae s.l. do nordeste do Brasil. *Hoehnea* 37:71–85. <https://doi.org/10.1590/S2236-89062010000100005>
- Lucena, MFA, Alves MVS (2009) Diversidade de Euphorbiaceae (s.l.) no Nordeste do Brasil. PhD Thesis, Universidade Federal de Pernambuco, Recife
- Maciel-Júnior L, Cardiel JM, Rossine Y, Athiê-Souza SM, Laurênio de Melo A (2020) An update on *Acalypha inselbergensis* Cardiel & I. Montero (Euphorbiaceae): a recently described species from Brazil. *Check List* 16:957–961. <https://doi.org/10.15560/16.4.957>
- Matiko Sano S, Pedrosa de Almeida S, Ribeiro JF (2008) Cerrado: ecologia e flora, vol. 2. Embrapa Informação Tecnológica, Brasília
- McNeill J (2014) Holotype: specimens and type citations: General issues. *Taxon* 63:1112–1113. <https://doi.org/10.12705/635.7>
- Mendoza RC, de Felfili JM, Walters BMT, da Silva Júnior MC, Rezende AV, Filgueirelguas T de S, Nogueira PE, Fagg CW (2008) Flora vascular do bioma cerrado: checklist com 12.356 espécies. In: Matiko Sano S, Pedrosa de Almeida S, Ribeiro JF (eds) *Cerrado: ecologia e flora*, vol. 2. Embrapa Informação Tecnológica, Brasília, pp 432–442
- Moore SLM (1895) The Panerogamic botany of the Matto Grosso Expedition, 1891–92. *Transact Linn Soc London* 4:265–516
- Moraes PL (2013) Catalogue of Brazilian plants collected by Prince Maximilian of Wied. *Scr Bot Belg* 49:1–249
- Moraes PL, de Smedt S, Guglielmo L (2014) On some Brazilian plants distributed by Martius in 1927 and published by Colla in *Herbarium Pedemontanum-V*. *Harvard Pap Bot* 19(1):143–155
- Moro MF, Lughadha EN, Filer DL, de Araújo FC, Martins FR (2014) A catalogue of the vascular plants of the Caatinga Phytogeographical Domain: a synthesis of floristic and phytosociological surveys. *Pkytotaxa* 160(1):1–118. <https://doi.org/10.11646/phytotaxa.160.1.1>
- Müller-Agroviensis J (1865) Euphorbiaceae. Vorläufige Mittheilungen aus den für De Candolle's Prodrum bestimmt Manuscript über diese Familie. *Linnaea* 34:1–224
- Müller-Agroviensis J (1866) *Acalypha*. In: de Candolle AP (ed) *Prodrum systematis naturalis regni vegetabilis*, vol 15. no 2. Treuttel et Würtz, Paris, pp 799–889
- Müller-Argoviensis J (1874) *Acalypha*. In: von Martius CFP (ed) *Flora Brasiliensis*, vol 11, no 2. Munich, Vienna, Leipzig, pp 338–370
- Muñoz-Rodríguez P, Cardiel JM, Atha D (2014) *Acalypha* subgenus *Linostachys* (Euphorbiaceae, Acalyphoideae): a global review. *Phytotaxa* 166(3):199–221. <https://doi.org/10.11646/phytotaxa.166.3.2>
- Pax FA, Hoffmann K (1924) *Acalypha*. In: Engler A (ed) *Das Pflanzenreich*, IV, 147 (heft 85). Engelmann, Leipzig, pp 1–231
- Poeppig E, Endlicher S (1845) *Nova Genera ac Species Plantarum*, quas in regno Chilensi Peruviano et in terra Amazonica: annis MDCCCXXVII ad MDCCCXXXII. vol. 3, Lipsiae
- Rambo B (1960) Euphorbiaceae Riograndenses, Pesquisas. *Botanica* 9:1–78
- Sagun VG, Levin GA, van Welzen PC (2010) Revision and phylogeny of *Acalypha* (Euphorbiaceae) in Malesia. *Blumea* 55:21–60. <https://doi.org/10.3767/000651910X499141>
- Schwirkowski P (2015) Lista de Espécies Vegetais da Mata Atlântica, Floresta Ombrófila Mista (Mata de Araucária) e Floresta Ombrófila Densa. <http://sites.google.com/site/florasbs/home>
- Secco RS, Esser H, Bery PA, Riina R, Levin GA (2008) Euphorbiaceae. In: Daly DC, Silveira M (eds) *Primeiro catálogo da flora do Acre, Brasil*. EDUFAC, Rio Branco, pp 191–197
- Secco RS, Cordeiro I, Senna-Vale L, de Sales MF, Ribes de Lima L, Medeiros D, de Sá Haiad B, Souza de Oliveira A, Rossi Caruzo MB, Carneiro-Torres D, Bigio NC (2012) An overview of recent taxonomic studies on Euphorbiaceae s.l. in Brazil. *Rodriguésia* 63(1):227–242
- Small JK (1913) Euphorbiaceae. In: Britton NL, Brown A (eds) *An illustrated flora of the Northern United States*. Scribner's sons, New York, pp 452–477
- Smith LB (1971) Herbarium notes, III. *Phytologia* 22(2):87–91
- Smith LB, Downs RJ (1959) *Resumo Preliminar das Euforbiáceas de Santa Catarina*. *Sellowia* 11:155–231
- Smith LB, Downs RJ, Klein RM (1988) *Acalypha*. In: Reitz R (ed) *Flora ilustrada catarinense*. EUFO, Itajai, pp 194–209
- Sobral M, Yoshino LH, Troncoso C (2009) Euphorbiaceae. In: Stehmann JR, Campostini RC, Salino A, Sobral M, Pinheiro D, Yoshino LH (eds) *Plantas da Floresta Atlântica*. Andrea Jakobsson Estúdio, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro, pp 247–259
- Sousa AAC, Cordeiro I, Cardiel JM, Rossi Caruzo MB (2017) Sinopse do gênero *Acalypha* L. (Euphorbiaceae) no Estado de São Paulo, Brasil. *Hoehnea* 44(3):337–349. <https://doi.org/10.1590/2236-8906-79/2016>
- Sousa AAC, Cordeiro I, Caruzo MBR (2019) A new species of *Acalypha* L. (Euphorbiaceae) from the Brazilian Atlantic Rain forest. *Syst Bot* 44(2):346–348. <https://doi.org/10.1600/036364419X15562052252171>
- Sousa AAC, Caruzo MBR, Silva OL, Cordeiro I (2020) *Acalypha* in Flora do Brasil 2020. Jardim Botânico do Rio de Janeiro. Available at: <http://floradobrasil.jbrj.gov.br/reflora/floradobrasil/FB17439>. Accessed Jul 2021
- Sousa AAC (2018) O gênero *Acalypha* (Euphorbiaceae) na Floresta Atlântica. Dissertação de mestrado. Universidade Federal de São Paulo (UNIFESP)
- Stanton WR (1975) *The Great United States exploring expedition of 1838–1842*. University of California Press, Berkeley
- Stehmann JR, Campostini RC, Salino A, Sobral M, Pinheiro D, Yoshino LH (2009) *Plantas da Floresta Atlântica*. Andrea Jakobsson Estúdio, Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rio de Janeiro
- Steinmann VW, Levin GA (2011) *Acalypha herzogiana* (Euphorbiaceae), the correct name for an intriguing and commonly cultivated species. *Brittonia* 63:500–504. <https://doi.org/10.1007/s12228-011-9181-5>
- Thiers B (2021) *Index Herbariorum: a global directory of public herbaria and associated staff*. The New York Botanical Garden's Virtual Herbarium. Available at: <http://sweetgum.nybg.org/ih/>. Accessed Jun 2021
- Turland NJ, Wiersema JH, Barrie FR, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Kusber W-H, Li D-Z, Marhold K, May TW, McNeill J, Monro AM, Prado J, Price MJ, Smith GF (2018) *International code of nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017*. *Regnum Vegetabile* 159. Glashütten: Koeltz Botanical Books. <https://doi.org/10.12705/Code.2018>
- Wanderley MGL, Shepherd GJ, Melhem TS, Giullietti AM, Martins SE (2009) *Flora Fanerogâmica do Estado de São Paulo*, vol 4. Instituto de Botânica, São Paulo, pp 19–23
- Wanderley MGL, Shepherd GJ, Martins SE, Estrada TEMD, Romanini RP, Koch I, Pirani JR, Melhem TS, Harley AMG, Kinoshita LS,

Magenta MAG, Wagner HML, Barros F, Lohmann LG, Amaral MCE, Cordeiro I, Aragaki S, Bianchini RS, Esteves GL (2011) Checklist of spermatophyta of the São Paulo State. *Brazil Biota Neotrop (sao Paulo)* 11:194–390. <https://doi.org/10.1590/S1676-06032011000500013>

Zuloaga FO, Belgrano MJ, Zanotti CA (2019) Actualización del Catálogo de las Plantas Vasculares del Cono Sur. *Darwiniana Nueva Serie* 7(2):208–278

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