

## Chapter 2

# *Baccharis*: Diversity and Distribution



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**Abstract** *Baccharis* is a monophyletic genus characterized by functionally unisexual florets, generally distributed in distinct individuals (dioecy), but also including monoecious, gynodioecious, and polygamous species. The genus has not been revised taxonomically as a whole for nearly two centuries. Recent country- or dependent territory-level checklists are hardly comparable and mostly outdated. A comprehensive checklist on the diversity and distributions of *Baccharis* at generic, infrageneric, and specific levels, including putative hybrids, and adventitious occurrences is provided. *Baccharis* comprises 442 species classified into 47 sections and 7 subgenera. The genus is native in the Americas, from southeastern Canada and northwestern USA to Tierra del Fuego, with species native to the Falkland/Malvinas Islands, across most of the Caribbean islands and the Galápagos archipelago. Complete lists of species per country and territory are provided. Brazil (185 species, 114 endemics), Argentina (110 species, 25 endemics), and Bolivia (76 species, 22 endemic) are the richest countries for the genus. Four species are highlighted for occurring in more than ten countries or territories within their native range (*B. dioica*, *B. pedunculata*, *B. trinervis*, *B. salicifolia*), while at least 218 species are endemic to a single country or territory. The role of hybridization in the genus diversity, ecology, and evolution is still a neglected subject, and 38 putative hybrid taxa were described so far. Some species were spread outside the American continent by anthropogenic dispersals, and at least two have established naturalized alien populations: *B. halimifolia* in Europe and Oceania and *B. spicata* in Europe.

**Keywords** Endemism · Infrageneric classification · Phylogeny · Plant distribution · Taxonomy

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## 1 What Is *Baccharis*?

*Baccharis* L. (Asteraceae, Astereae, Baccharidinae) is a monophyletic American genus mostly characterized by a tufted indumentum of trichomes with several adjoining basal cells on leaves and stems and functionally unisexual florets (Heiden et al. 2019). The broad circumscription of *Baccharis* proposed by Nesom (1988) and Müller (2006), including monoecious (*Baccharidastrum* Cabrera), gynodioecious (*Heterothalamus* Less.), and polygamous taxa (*Baccharidiopsis* G.M.Barroso), is supported by molecular data and phylogenetic reconstructions (Heiden et al. 2019).

Nesom (2020) presented an updated subtribal classification of Astereae and proposed a new expanded concept of Baccharidinae including hypothesis of relationships within the subtribe influenced by the phylogenetic molecular data published by Vargas et al. (2017), Vargas (2018) and Heiden et al. (2019). *Baccharis* and several genera formerly placed in the now synonymized subtribes Podocomininae and Hinterhuberinae are currently included in Baccharidinae. So, subtribe Baccharidinae encompasses 24 genera and is advocated to represent a monophyletic group sister to the North American lineages (Nesom 2020).

The best available evidence points that *Baccharis* is sister to *Exostigma* G.Sancho (Vargas 2018). These two genera are sisters of a clade composed by the Central Andean genera *Floscaldasia* Cuatrec., *Parastrephia* Nutt., and *Diplostephium* Kunth. This clade containing *Baccharis*, *Exostigma*, and the Central Andean genera is then nested in a clade with Central and South American *Archibaccharis* Heering, *Aztecaster* G.L.Nesom, *Laennecia* Cass., *Lagenophora* Cass., and *Westoniella* Cuatrec., which is sister of a mostly North Andean clade composed by *Laestadia* Kunth ex Less, *Hinterhubera* Sch.Bip., *Blakiella* Cuatrec., and *Linochilus* Benth. (Vargas et al. 2017).

The available phylogenies support a South American origin of *Baccharis*. The most recent common ancestor of *Baccharis* and *Exostigma* has split about 6.93 million years ago (Vargas et al. 2017) in the Miocene. After an early diversification in South America (Heiden et al. 2019), some derived lineages entered the North America subcontinent several times by multiple events of dispersal followed by subsequent radiations as represented by the occurrence of independent but not closely related lineages (Heiden et al. 2019) such as *Baccharis* sect. *Aristidentes* G.L.Nesom, *B.* sect. *Baccharis*, *B.* sect. *Bogotenses* Cuatrec., *B.* sect. *Corymbosae* Heering, and *B.* sect. *Punctatae* Giuliano & G.L.Nesom in North America, Central America, and the Caribbean. The most recent common ancestor of *B.* subgen. *Heterothalamus* (Less.) G.Heiden and *B.* subgen. *Baccharis* has split 4.02 million years ago in the Pliocene, and the first divergence event within *B.* subgen. *Baccharis* (*B.* sect. *Caulopterae* and the remaining sections within the subgenus) occurred 2.44 million years ago (Vargas et al. 2017) in the Pliocene/Pleistocene transition.

Functionally unisexual florets are present in all lineages of *Baccharis*, while its disposition in distinct plants (dioecy) is known in all the subgenera and most of the sections (Fig. 2.1). Variations from perfect dioecy are scattered in some lineages as



**Fig. 2.1** Representative of a functionally dioecious species: *Baccharis tarchonanthoides*. (a) Habit. (b) Male capitula with only tubulose staminate florets. (c) Female capitula with only filiform pistillate florets. (Photos a, b, c: G.Heiden)

secondarily derived states. Monoecious taxa are represented by the sister species *B. breviseta* DC. and *B. vulneraria* Baker (Fig. 2.2), as well as *B. monoica* G.L.Nesom. Gynodioecious species are represented by *B. aliena* (Spreng.) Joch. Müll. (Fig. 2.3), *B. hyemalis* Deble, and *B. psiadioides* (Less.) Joch.Müll., while *B. pohlii* (Baker) Deble & A.S.Oliveira, *B. polygama* Ariza, and *B. punctulata* DC. (Fig. 2.4) are polygamous taxa sister to dioecious species.

The tufted indumentum cannot be considered as a synapomorphy of *Baccharis*, as suggested by Müller (2006), since it is absent in *B.* subgen. *Tarchonanthoides* Heering, which is the first diverging lineage within the genus. This subgenus shares the functionally unisexual florets with its sister clade composed of the remaining species of *Baccharis* but lacks the tufted indumentum. So, the tufted indumentum occurs only in the sister clade composed of the remaining species of *Baccharis*, with a posterior reversal (loss) in *B.* subgen. *Coridifoliae* (Heiden et al. 2019).

*Baccharis* has never been revised taxonomically as a whole since Candolle (1836). Recently published checklists are hardly comparable and mostly outdated due to differences in the genus circumscription, nomenclatural changes, description of new species, and adoption of conflicting taxa circumscriptions by different authors. Heiden et al. (2019) published a revised checklist at infrageneric and species level, but data on distribution was not encompassing species distributions at country, dependent territory, and first political division level. In this chapter, an updated checklist on the diversity and distributions of *Baccharis* at generic, infrageneric, and specific levels, including putative hybrids, and adventitious occurrences for countries and dependent territories is provided.

## 2 How Was This List Built?

The taxonomic checklist and geographical distributional data provided here are the results of the collation of published and original information. An updated checklist was obtained by means of literature species citations revisited based on nomenclatural updating, author circumscription of the accepted species, and double-checking of vouchers cited in references. This checklist was then complemented by fieldwork data, revision of herbaria specimens personally or remotely, and punctual additions of occurrence data from databases with verifiable and confident information, hence representing the most updated and solid information on this genus.

The baseline for the new checklist construction is the infrageneric classification published by Heiden et al. (2019), complemented with data from Malagarriga (1976), Müller (2013), Plants of the World Online (POWO 2019), and Vascular Plants of the Americas (Ulloa et al. 2018). These sources resulted in the addition of ten neglected names missing from the previous list by Heiden et al. (2019) (*B. argentina* Heering, *B. concava* (Ruiz. & Pav.) Pers., *B. cordobensis* Heering, *B. douglasii* DC., *B. emoryi* A.Gray, *B. glomerata* Joch.Müll., *B. isabellae* Soria & Zardini,





**Fig. 2.2** Representative of a gynodioecious species: *Baccharis aliena*. (a) Habit. (b) Hermaphrodite capitula with pistillate ray florets and tubulose staminate disk florets. (c) Female capitula with only short-rayed pistillate florets. (Photos a, b, c: G.Heiden)



**Fig. 2.3** Two representatives of monoecious species. *Baccharis breviseta*: (a) Habit. (b) Hermaphrodite capitula with marginal filiform pistillate florets and one to few central tubulose staminate florets. *B. vulneraria*: (c) Habit. (d) Hermaphrodite capitula with marginal filiform pistillate florets and few central tubulose staminate florets. (Photos a, b, c, d: G.Heiden)





**Fig. 2.4** Representative of a polygamous species: *Baccharis punctulata*. (a) Habit. (b) Male capitula with only tubulose staminate florets. (c) Female capitula with only filiform pistillate florets. Hermaphrodites are rare and not shown here; their capitula have marginal filiform pistillate florets and few central tubulose staminate florets. (Photos a, b, c: G.Heiden)

*B. lancifolia* DC., *B. polygama* Ariza, and *B. vitis-idaea* Oliver. ex Thurn.), plus the acceptance of the recircumscription of *B. trimera* (Less.) DC. by Valtierra (2018), and other two new species described later (*B. funkiae* Bonif. et al. and *B. rectialata* V. Valtierra et al.).

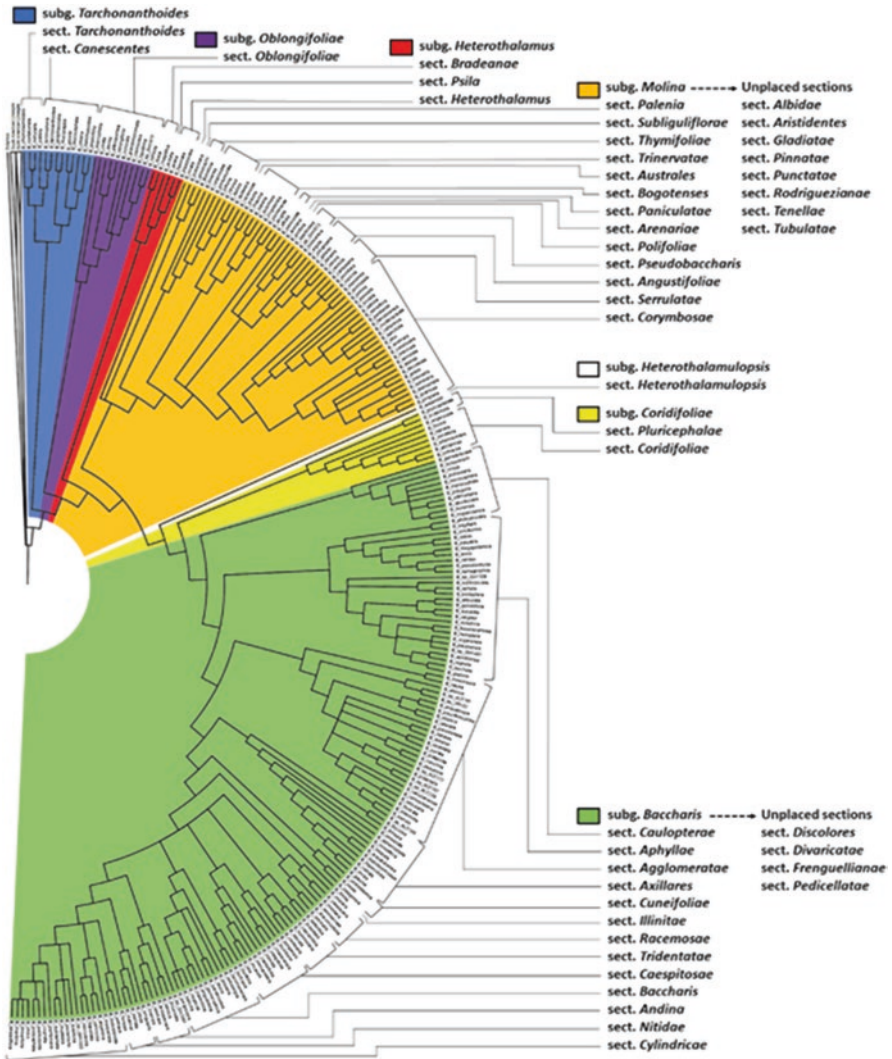
Subsequently, regional floras and checklists available for North America (Sundberg and Bogler 2006), Mesoamerica (Pruski and Robinson 2018), the Caribbean (Acevedo-Rodríguez and Strong 2007), the United Kingdom Overseas Territories (UKOT 2020), the Guiana Shield (Funk et al. 2007), and the Southern Cone of South America (Zuloaga et al. 2008) were consulted for country and first political order geographical subdivision distribution records. Country-level checklists, floras, and new occurrences were then consulted to Argentina (Giuliano and Plos 2014), Bolivia (Müller 2006; Hind 2011), Brazil (Heiden 2020), Canada (Fielding 2001), Chile (Heering 1903; Hellwig 1990; Moreira-Muñoz et al. 2016), Colombia (Cuatrecasas 1967; Ávila et al. 2020), Cuba (Alain 1962; Greuter and Rodríguez 2017), Ecuador (Robinson et al. 1999), Mexico (Villaseñor 2016), Peru (Brako and Zarucchi 1993; Beltrán et al. 2006; Gonzáles et al. 2019), Uruguay (Valtierra and Bonifacino 2014; Valtierra 2018), and Venezuela (Hocke et al. 2008). All the species lists and voucher specimens, when cited, were nomenclaturally updated and taxonomically checked for identification. The information on this regard is comprehensive for most cases; however, it is clearly not perfect and reflects current knowledge, especially for subdivisions of countries lacking recent taxonomic studies focusing on *Baccharis*, especially the Northern Andean countries of Colombia, Ecuador, and Peru.

The data from literature were checked and complemented with information from herbaria specimens consulted personally (B, BAA, BAB, BHCB, BHZB, BM, C, CDS, CEN, CEPEC, CESJ, COL, CORD, CTES, E, ECT, ESA, F, FCAB, FLOR, FUEL, FURB, G, GB, GUA, HAC, HAJB, HAS, HB, HBG, HBR, HEPH, HPL, HRJ, HUCS, HUEFS, HURG, HVAT, IAC, IBGE, ICN, INPA, IPA, JPB, K, LIL, LP, MBM, MBML, MEDEL, MEXU, MG, MO, MOL, MT, MVFA, MVFQ, MVJB, MVM, NY, O, OUPR, P, PACA, PAMG, QCEN, PEL, R, RB, RBR, RFFP, RUSU, S, SI, SP, SPF, SPSF, TOLI, UB, UEC, UFP, UFRN, UPCB, US, USZ) or remotely (BR, GH, GOET, HCSM, HDCF, JE, LE, M, MA, OBI, OXF, W, WU).

GBIF (2020) data were used for building the genus overview distribution map (Fig. 2.5). This database was also used when species records contributed for occurrence knowledge in some states, provinces, or departments and some Caribbean Islands that were missing from previous publications. However, GBIF data were included only when these specimens' records were determined by specialists who have published confident taxonomic studies on the genus along the last hundred years (Barroso, Bonifacino, Cuatrecasas, Giuliano, Heiden, Hellwig, Hind, Malagarrija Heras, Müller, Nesom, Pruski, Robinson, Soria, and Valtierra).

Modern taxonomic revisions independent of regional constraints and revising monophyletic groups are scarce, and the work of Heiden & Pirani (2016) is still the only recent revision under this framework. Doubtlessly, revisions of other clades





**Fig. 2.5** Schematic phylogenetic infrageneric classification of *Baccharis* (Asteraceae) comprising 7 subgenera, 47 sections, and 248 sampled taxa out of 442 accepted species. (Based on Heiden et al. 2019)

currently underway and fully or almost fully sampled in the phylogeny (*B.* subgen. *Oblongifolia*, *B.* subgen. *Heterothalamus*, *B.* subgen. *Coridifoliae*, and *B.* subgen. *Heterothalamulopsis*) will greatly improve the understanding of these subgenera and its sections, series, and species composition and relationships. Whereas deeper knowledge for *B.* subgen. *Molina* and *B.* subgen. *Baccharis* are still far from being

achieved completely, progress continues to be done with the reevaluation of complicated species complexes and description of new species by several botanists.

Despite the great efforts for herbaria revision, 105,952 specimens were consulted by the author so far, while GBIF (2020) has a current record of 147,141 occurrences, and lots of herbaria collections are still to be digitized, and most of the digitized ones do not have digital images of the specimens which would allow confirming more identification records and permit acceleration of the taxonomy of a large and widespread group such *Baccharis*. Doubtlessly, the genus still has many new species never collected to be described to science or housed at herbaria and waiting for taxonomists to describe them, as well as it is not a secret that uncountable areas of the Americas has never been stepped and sampled by a plant collector. Several of these areas are being destroyed even before scientists had a chance to study them, and conservation actions could be taken (Tedesco et al. 2012; Pimm and Joppa 2015). Time urges for a great effort on sampling the genus in potential areas and for funding towards digitizing all the collections allowing the taxonomic work to be sped up. Moreover, even well-explored and relatively accessible areas keep surprising researchers with noteworthy and remarkable new taxa being described even in well-known and well-sampled areas (e.g., Heiden et al. 2009, 2012, 2014; Heiden and Pirani 2014). A reasonable knowledge would allow the proposition of conservation measures and avoid the irreversible loss of biodiversity which characterizes the Anthropocene.

### 3 How Many Species of *Baccharis* Are There and Where?

*Baccharis* comprises 442 formally described and accepted species classified into 47 sections and 7 subgenera (Fig. 2.5). The infrageneric placement of 33 species at sectional level, 17 in *B.* subgen. *Molina* and 16 in *B.* subgen. *Baccharis*, remains pending. The genus is native in the Americas (Fig. 2.6), from the southeastern island of Nova Scotia in Canada and coastal Washington State in northwestern USA to southern Isla Hornos in Tierra del Fuego in the Chilean Patagonia, with species native to the Falkland/Malvinas Islands, most of the Caribbean islands, including several endemics, and the Galápagos archipelago, including one endemic species too. *Baccharis halimifolia* L. from North America was introduced as an ornamental in Europe and Oceania and became naturalized in coastal environments (Fried et al. 2016), while *B. spicata* (Lam.) Baill. was accidentally introduced in Europe and became naturalized (Verloove et al. 2018).

The highlands of eastern Brazil are the main area for the early radiations of *Baccharis* with the likely highest phylogenetic and species diversity. This assumption is attested by the presence of all the seven recognized subgenera and by the distribution of several of the earliest-divergent lineages of the genus.

Most of the infrageneric taxa accepted here are based on the results of the Bayesian analyses of combined molecular data (nuclear ETS and ITS and



**Fig. 2.6** World distribution of *Baccharis* within its native range in the Americas and naturalized introduced populations in Europe and Oceania. Orange spots and dots represent specimens and observation records distributions based on cleaned GBIF occurrence data

chloroplastial *trnH-psbA* and *trnL-F* DNA) and are mostly strongly supported by statistical posterior probability (PP) values, as published by Heiden et al. (2019). The complete infrageneric classification of *Baccharis* comprising the subgenera, sections, and taxa accepted at species level is presented in a simplified schematic tree (Fig. 2.5) based on the cladograms as an index/guideline to reflect the hierarchical divergence events and relationships among subgenera and sections. Therefore, subgenera and sections are presented in the text following the divergence events reconstructed in the trees and from less-diversified to more-diversified/sampled groups when no hierarchical order (polytomies) was recovered. Species placed within each section, sections with unknown relationships within a subgenus (not sampled in the phylogeny, but confident taxonomic position in a subgenus proposed based on morphology), and species with unknown relationships within a subgenus (not sampled in the phylogeny, but confident taxonomic position possible based on morphology in a subgenus but not within a section) are presented alphabetically by the end of *Baccharis* subgen. *Molina* and *Baccharis* subgen. *Baccharis*.

Synthetic data on *Baccharis* diversity and distributions are further recorded and detailed in this chapter. The complete list of subgenera, sections, and species distributions across the 35 American sovereign countries and the 24 dependent territories from the Americas along with the introduced potentially naturalized occurrences in Europe and Oceania are presented in the paragraph: “***Baccharis* diversity and distribution: who they are and where to find them?**” section. Countries with the higher number of species richness are Brazil (185 species, 114 endemics), Argentina (110 species, 25 endemics), Bolivia (76 species, 22 endemic), Peru (61 species, 21 endemics), Uruguay (54 species, 5 endemic), Chile (48 species, 15 endemics), Paraguay (47 species, 2 endemics), Mexico (46 species, 22 endemic), Colombia (39



species, 15 endemics), Ecuador (38 species, 10 endemic), and the USA (23 species, 4 endemics). Conversely, 2 Caribbean countries (Barbados and Grenada) and 16 dependent territories (Anguilla, Aruba, Bonaire, British Virgin Islands, Clipperton Island, Curaçao, French Guiana, Greenland, Navassa Island, Saint Barthélemy, Saint Martin, Saint Pierre and Miquelon, Sint Eustatius, Sint Maarten, South Georgia and the South Sandwich Islands, and Turks and Caicos Islands) do not have any record of native *Baccharis* species. All of them are island countries or territories except for French Guiana, which lies within the Amazon rainforest and the Guiana Shield.

A list of “**Confirmed and putative hybrid species: who are them?**” is presented subsequently and separately. Taxonomic status of most of the putative hybrids proposed based on morphology and distribution of likely sympatric parent species remains to be confirmed or rejected by means of further experimental crosses and in situ population genetic studies.

Complete checklists of recorded species and endemics for the 35 American sovereign countries and the 24 dependent territories from the Americas are presented in the “**Distribution of *Baccharis* by sovereign countries or dependent territories: how many species are out there?**” section followed by the “**Going worldwide? List of introduced naturalized adventitious distributions outside the Americas**” section, where records of established self-sustained populations (historically recorded but currently eradicated or still thriving and under no efficient human intervention for extirpation) are presented. Furthermore, there are sparse records in herbaria and literature of historical or recent exotic species occurrences, beyond the listed areas of Europe and Oceania, of species of *Baccharis* out of their native range in Africa, Asia, Europe, and Oceania, but these other punctual records representing cultivate or waifs (not naturalized, not persistent introductions) are not presented here, since they do not represent sustainable alien introductions.

Several *Baccharis* species have the potential to become invasive outside the Americas, as have happened with *B. halimifolia* (Caño et al. 2013; Fried et al. 2016) and *B. spicata* (Verloove et al. 2018). Thus, on purpose introductions should be avoided as well as preventive measures and monitoring to suppress any new record of introduction outside the native range should always be considered priorities.

The genus is commonly seen as weedy or invasive because some species of *Baccharis* are widespread within the Americas. Twenty-eight species occur in more than five countries or territories within their native ranges. Four species of *Baccharis* are highlighted since they are recorded to more than ten countries and territories (Fig. 2.7). *B. dioica* Vahl (Fig. 2.7a) grows in coastal vegetations from 12 Caribbean countries and territories, many of them occupying smallish lands, including the Caribbean coast of Mexico and USA, although it is locally extinct in the later and currently recorded for this country only under cultivation. *B. pedunculata* (Mill.) Cabrera (Fig. 2.7b) is a common forest species occurring in the understory and forest edges and climbing up to the canopy in tropical forests, being widespread in 19



**Fig. 2.7** Four species of *Baccharis* recorded to more than ten countries and territories (a) *Baccharis dioica* in the USA. (b) *B. pedunculata* in Bolivia. (c) *B. salicifolia* in Argentina. (d) *B. trinervis* in Brazil. (Photos a, b, c, d: G.Heiden)

countries and territories from Central America, the Caribbean islands, and Northern Andean South America countries. *B. salicifolia* (Ruiz & Pav.) Pers. (Fig. 2.7b) is by far the most widespread species of the genus occurring in a wide range of biomes from deserts to tropical forests and high-elevation vegetations. It is considered a phreatophyte and always occurs in sunny sites around springs and along riverine vegetation from North America, Central America, and South America, but it is not recorded in the Caribbean Islands. *B. trinervis* Pers. (Fig. 2.7d) is also a common forest species occurring in the understory and forest edges and climbing up to the canopy in tropical forests, but it also grows as a shrub in savannas and anthropogenic areas, being widespread in 18 countries and territories in Central America, South America, and Trinidad and Tobago.

There are other widely distributed species occurring in 7 (*B. glutinosa* Pers., *B. linearifolia* (Lam.) Pers., *B. nitida* (Ruiz & Pav.) Pers., *B. oblongifolia* (Ruiz & Pav.) Pers., and *B. sagittalis* (Less.) DC.) or 6 countries (*B. alpina* Kunth, *B. chilco* Kunth, *B. latifolia* (Ruiz & Pav.) Pers., and *B. trimera* (Less.) DC.), while 47 species are recorded occurring in 3–5 countries and 105 recorded from 2 countries or territories.

Some of the widespread species are highly variable morphologically, which could be a result of the wide distribution and/or the fate caused by the merging of distinct species into a single broad species concept, such as *B. linearifolia*, *B. oblongifolia*, *B. sagittalis*, *B. salicifolia*, and *B. trinervis*. These taxa have an extensive list of synonyms, some segregated as distinct species by different authors, and the circumscription of them and their segregates or synonyms is far from consensus, demanding further taxonomic research to elucidate narrower or broader hypothesis for these entities.

Conversely, the genus is prolific in species restricted to just one country or dependent territory with 263 species in this situation, although several of them could be common and widely distributed within countries as big as Argentina, Brazil, Mexico, and the USA. Countries with the higher absolute number of endemic species are Brazil (114 endemics), Argentina (25 endemics), Bolivia (22 endemics), Mexico (22 endemics), Peru (21 endemics), Chile (15 endemics), Colombia (15 endemics), and Ecuador (10 endemics). However, it is important to keep in mind that political borders are generally not a precise way to count endemics, due to the incomparable size of political entities, distinct levels of geographical isolation, and frequent geographical meaninglessness of several political frontiers. Moreover, some really narrow distributed species could occur exactly along geographical barriers that divide political territories giving the false idea that such species are largely spread. Anyway, counting of endemics under political geographical boundaries gives an idea of the importance of endemism within the genus and allows us to recognize the responsibility of each political entity in protecting its endemic biota.

Narrow endemics are found from the USA (e.g., *B. glabrata* (Hoover) G.Heiden) to Chilean Patagonia (e.g., *B. mylodontis* F.H.Hellw.), including endemics in the Caribbean (e.g., *B. mornicola* (Urb.) G.Heiden) and Galápagos (e.g., *B. steetzii* Andersson) islands. All the seven recognized subgenera have narrow endemic species, and some of them are depicted (Figs. 2.8 and 2.9) and exemplified here,





**Fig. 2.8** Narrow endemic species of *Baccharis*. (a) *B.* (subgen. *Tarchonanthoides*) *chionolaenoides* in Santa Catarina, Brazil. (b) *B.* (subgen. *Oblongifoliae*) *friburgensis* in Rio de Janeiro, Brazil. (c). *B.* (subgen. *Heterothalamus*) *magnifica* in Espírito Santo, Brazil. (d). *B.* (subgen. *Molina*) *bifrons* in Rio de Janeiro, Brazil. (Photos a, b, d: G.Heiden; c: M.A.T.Silva)



**Fig. 2.9** Narrow endemic species of *Baccharis*. **(a)** *B.* (subgen. *Heterothalamulopsis*) *wagenitzii* in Santa Catarina, Brazil. **(b)** *B.* (subgen. *Coridifoliae*) *pluricapitulata* in Rio Grande do Sul, Brazil. **(c)** *B.* (subgen. *Baccharis*) *scopulorum* in Santa Catarina, Brazil. **(d)** *B.* (subgen. *Baccharis*) *obdeltata* in Minas Gerais, Brazil. (Photos **a**, **b**, **c**: G.Heiden; **d**: C.M.Siniscalchi)

although the number of narrow endemics is much higher than the eight illustrative examples shown.

For example, *B. chionolaenoides* D.B.Falkenb. & Deble (Fig. 2.8a), belonging to *B.* subgen. *Tarchonanthoides* Heering, is one of the narrowest endemic species of the genus occurring only adhered to steep cliffs in Morro da Igreja, Parque Nacional de São Joaquim, in Urubici, Santa Catarina, Brazil (Heiden and Pirani 2016). *B. friburgensis* G.Heiden & al. (Fig. 2.8b), belonging to *B.* subgen. *Oblongifoliae* (DC.) G.Heiden, is only known for a few inselbergs within the Atlantic Rainforest in a small area of Macaé de Cima District, in Nova Friburgo, Rio de Janeiro, Brazil (Heiden et al. 2009). *B. magnifica* G.Heiden & al. (Fig. 2.8c), belonging to *B.* subgen. *Heterothalamus* (Less.) G.Heiden, is a rare endemic from the escarpments of Pico da Bandeira massif, at Parque Nacional do Caparaó, in the border between Espírito Santo and Minas Gerais, Brazil (Heiden et al. 2014). *B. bifrons* Baker, belonging to *B.* subgen. *Molina* (Pers.) Heering (Fig. 2.8d), has a restricted area of occurrence and is only known for the seasonally dry tropical forests and coastal vegetation in the Cabo Frio peninsula in Rio de Janeiro, Brazil (Heiden et al. 2012).

Another example is *B. wagenitzii* (F.H.Hellw.) Joch.Müll. (Fig. 2.9a), the only species belonging to *B.* subgen. *Heterothalamopsis* (Deble, A.S.Oliveira & Marchiori) G.Heiden that only occurs amid basaltic and sandstone rock outcrops or edges of cloud forests on the canyon cliffs of Parque Nacional Aparados da Serra and Serra Geral, along the borders of Rio Grande do Sul and Santa Catarina, Brazil (Hellwig 2003). *B. pluricapitulata* (Deble) G.Heiden (Fig. 2.9b), belonging to *B.* subgen. *Coridifoliae* (DC.) G.Heiden, is known only for few localities in swamps and peat bogs in the hilltops of Serra do Sudeste, amid the pampas temperate grasslands, in the municipalities of Pedras Altas and Pinheiro Machado, Rio Grande do Sul, Brazil (Heiden 2013). *B. scopulorum* A.A.Schneid. & G.Heiden (Fig. 2.9c), belonging to the first early divergent lineage from the remaining *B.* subgen. *Baccharis*, is restricted to a single locality growing on sandstone shaded cliffs in Serra do Corvo Branco, the boundary between Grão Pará and Urubici municipalities at Santa Catarina, Brazil (Schneider et al. 2011), while *B. obdeltata* G.Heiden (Fig. 2.9d), belonging to the core of *B.* subgen. *Baccharis*, is endemic to the mountaintop quartzite tropical grasslands (*campos rupestres*) on the slopes of Pico do Breu, a massif in the Espinhaço Range at Santana do Riacho, Minas Gerais, Brazil (Heiden and Pirani 2014). *Baccharis* has plenty of other examples of narrow endemic species, and mapping their occupied area and studying their species population demography and ecology would be worthwhile for conservation measures to be proposed and put into action.



#### 4 What Do We Know (or Not) About the Role of Hybridization on *Baccharis* Diversity?

The role of hybridization on *Baccharis* diversity, distribution, evolution, and ecology remains a neglected subject deserving more attention. Several authors were puzzled by complexes of similar species and morphologically intermediate specimens between not morphologically closely related taxa. Natural interspecific hybrids are scarcely properly documented in the literature and herbaria, although it is commonly advocated as a widespread phenomenon within the genus. Alboff and Kurtz (1896) and Spegazzini (1896), as cited by Hellwig (1990), were among the first ones to highlight the hybridization of *B. magellanica* (Lam.) Pers. and *B. patagonica* Hook. & Arn., on studies of the Tierra del Fuego flora.

Malagarriga (1949, under his priest name Irmão Teodoro Luis) was the first to formally recognize a putative hybrid (*B. × paulopolitana* L.Teodoro & W.Hoehne). Later, he described other specimens as additional natural hybrids (*B. × fraudulentata* L.Teodoro, *B. × heeringiana* L.Teodoro, *B. × hoehneana* L.Teodoro, *B. × wilsoniana* L.Teodoro) suggesting the likely parental taxa (Malagarriga 1954, also as Irmão Teodoro Luis). This author defended the legitimacy of naming and describing hybrid taxonomical entities and the indication of putative parental species towards the recognition of the role of hybridization for the understanding of hybrid complexes represented by the segregation of an offspring between not closely related species. Malagarriga (1954) also briefly discussed the role of dioecy in hybridization and introgression and their consequences, for example, the hybrids' occupancy of intermediate ecological niches, not suitable for the parental taxa.

Hellwig (1990) described 18 hybrid species and 15 hybrid subspecies and hypothesized the hybrid origin of 3 taxa (*B. × concava* (Ruiz & Pav.) Pers., *B. × intermedia* DC., and *B. × volckmannii* Phil.) published by former authors, discussing their likely origins, geography, and ecology in Chile, intending to draw attention from future collectors and deeper research on this subject. He highlighted the fact that *B. intermedia* behaves as a complex of hybridization, with the parental *B. macraei* Hook. & Arn. occurring along sandy soils by the coast, while *B. linearis* (Ruiz & Pav.) Pers., the other parent species, is widespread but restricted to inland, never found close to the sea. The gap of ecological distribution, as well as the morphological spectrum between the two parental species, is filled by *B. × intermedia*. Besides the case of *B. intermedia*, whose individuals can be easily spotted as hybrids, Hellwig (1990) also explained other cases as the hybrids between *B. obovata* and *B. magellanica*, yielding large and easily recognizable swarms of intermediate forms. Meanwhile, on the opposite side, he also gave the example of other hybrids more difficult to recognize, as when hybridization takes part between morphologically similar parent species as the cases of crosses of *B. neaei* versus *B. linearis*, whose offspring is hard to tell apart from the parent species.

The case of *B. × intermedia* was later investigated by Faini et al. (1991), who examined a zone of sympatric occurrence between *B. linearis* and *B. macraei*, to determine the hybrid nature of *B. × intermedia* using morphological and chemical

data. The authors found that hybrids show intermediate branching pattern, all intermediate shapes of leaves, and intermediate peduncle size and capitula arrangement. For the chemical profile, it was found that while *B. linearis* has five species-specific components, predominantly aromatic derivatives, *B. macraei* metabolizes mainly furanoclerodane diterpenes and, apart from the triterpenoids of common occurrence in the genus, the chemical composition of *B. × intermedia* is a clear combination of the metabolites present in the two parent species. The main conclusion of the work was that these abovementioned taxa form part of a homogamic complex which comprises almost the whole genus in Chile with the species adapted to conditions which characterize their habitats and connected by hybrids that inhabit transitional zones between the ranges of the parental species. They highlight that in some cases, alteration of the natural vegetation by human impact resulted in the formation of degraded vegetation types where contact zones create conditions for the establishment of hybrids and backcross progeny which are favorable.

Zanowiak (1991) investigated, by the mean of cpDNA, nrDNA, and pollen fertility data, a region of overlapping distribution for *B. halimifolia* L. and *B. neglecta* Britton, where a continuum of leaf morphology from broader to narrower, characterizing the first and the last species respectively, occurs. The results confirmed that hybridization does indeed exist between the two species and that hybrids retain a level of fertility sufficient for introgression to occur. By the way, according to Sundberg and Bogler (2006), not formally named natural hybrids between *B. halimifolia* and *B. angustifolia* Michx. or *B. neglecta* have been recorded in Arkansas, Louisiana, and East Texas, while hybrids between *B. halimifolia* and *B. angustifolia* are also known in Florida.

Meanwhile, many doubts remain concerning the patterns and processes of hybridization in *Baccharis*; this mechanism is being successfully explored by the applied sciences since a while, and it gives a lot of clues of what could be happening under natural circumstances. Artificial hybrids, between the allopatric *B. pilularis* (coyote bush), from California and Oregon, and *B. sarothroides* (desert broom), from Arizona, California, New Mexico, and Texas in the USA and Baja California, Baja California Sur, Sinaloa, and Sonora in Mexico, were successfully obtained by Thompson et al. (1976). The aim of the author was to apply the desirable hybrid forms as an ornamental shrub for desert landscaping combining desirable features of arid-land adaptability and drought tolerance of the desert broom with the leafiness and compact, procumbent growth habit of the coyote bush. A total of 301 hybrid plants within the progeny of this cross were evaluated by Lee et al. (1984) over a period of 6 years, and individual plant selections were successfully propagated asexually by means of rooted cuttings. Thompson et al. (1995) later described in detail the whole process of obtaining these hybrids, and the reading is worthwhile as the most thorough case study of hybridization and backcrossing in *Baccharis*. The hybrid plants started to flower during the second year of growth. Morphologically, the size and shape of the leaves of the fully grown hybrid plants were intermediate between the two parental types at the same stage of maturity. The pistillate capitula of the hybrid plants were identical to those of the desert broom maternal parent, but

they were variable in size and reduced in length and diameter, and the bristles of the pappus were noticeably shorter. In general, hybrid plants produced fewer capitula and smaller and lighter seeds. The high degree of variation in height, width, width/height ratio, leaf shapes, branching habit, and number of florets per plant suggests a high level of genetic heterogeneity within the hybrid population. Although the hybrid plants have not been subjected to rigorous testing, according to Thompson (1995), they appeared to have a high level of tolerance to various abiotic stresses, especially drought and low humidity. The plants survived summer heat of 45 °C without wilting and winter cold as low as -10 °C. After evaluations (Lee et al. 1984), one plant was selected as having the best combination of desirable horticultural characteristics and was released as a new cultivar called “Centennial” to commemorate the 100th year of the University of Arizona. All the interspecific hybrid plants were pistillate, and the reason for this type of sex expression has not been determined by Thompson (1985), but he proposed that maternal cytoplasmic factor could be operating. Because excessive production of pappus on female plants can be a nuisance and fire hazard, in an area naturally prone for this phenomena, male or staminate flowering would be preferred, and later Thompson (1995) selected hybrid plants that have been backcrossed to the parental *B. sarothroides*, and seedlings of the resulting progenies were evaluated and utilized to clarify the mechanism and inheritance of sex expression with the aim to obtain superior selections from these progenies to combine drought tolerance, procumbent and compact growth habit, and staminate sex expression. The second-generation seedling plants displayed a wide range of leaf types. As the plants matured, most tended to exhibit either the oblong, serrated leaf shape of “Centennial” or the smooth, linear shape of the desert broom parent. Backcrossed hybrids revealed the presence of several staminate plants. Because some genetic segregation for sex expression was evident in the second-generation hybrid seedlings, propagation focused on an all-staminate hybrid that would eliminate the dispersion of unwanted seedlings, although potentially creating backcross hybrid progeny via pollen dispersal. Thompson (1995) stated that the most positive aspect would be eliminating dispersal of unwanted pappus, and after growing the selections in field plots for 3 years, a staminate, second-generation hybrid plant, which had the desirable degree of procumbency and vigor, was chosen and propagated resulting in a plant which has a leaf shape intermediate between “Centennial” and the male backcross parent. This new cultivar was named “Thompson” and represents a second-generation interspecific hybrid.

Although it was not the aim of the plant breeders, the development of the two cultivars demonstrated the feasibility of hybridization and backcrossing in *Baccharis*, resulting in a wide range of intermediate forms and factual evidence of introgression. Conversely, if it is proven possible for different *Baccharis* species to hybridize, it is still not understood what are the genetic and ecological barriers that keep species boundaries working at a high degree in nature, and research on this field would raise lots of interesting questions and answers on the evolution and origins of diversity in the genus.



## 5 *Baccharis* Diversity and Distribution: Who They Are and Where to Find Them?

The complete list of subgenera, sections, and species distributions across the 35 American sovereign countries and the 24 dependent territories from the Americas along with the introduced potentially naturalized occurrences in Europe and Oceania is presented in the following section.

I. *Baccharis* subgen. *Tarchonantheoides* Heering: Two sections and thirteen species.

The group has diversified mainly in open vegetation of southeastern South America, occurring in Brazil, Paraguay, Uruguay, and Argentina. The main center of species richness is found in the southern Brazilian highlands along the states of Paraná, Santa Catarina, and Rio Grande do Sul. Nonetheless, endemic taxa also occur in the highland rocky grasslands (*campos rupestres*) of Minas Gerais, in southeastern Brazil, and in the lowland temperate grasslands from the pampas of Argentina, Uruguay, and southern Brazil (Heiden et al. 2019).

I.I. *Baccharis* sect. *Tarchonantheoides* (Heering) Cuatrec.: Six species occurring in savannas and grasslands from southeastern Brazil to southern Uruguay.

1. *B. chionolaenoides* D.B.Falkenb. & Deble. **Brazil** (Santa Catarina).
2. *B. curitybensis* Heering ex Malme. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).
3. *B. lychnophora* Gardner. **Brazil** (Minas Gerais).
4. *B. nebularis* G.Heiden. **Brazil** (Paraná, Santa Catarina).
5. *B. patens* Baker. **Brazil** (Rio Grande do Sul). **Uruguay** (Canelones, Lavalleja, Maldonado, Montevideo, Rocha, San José).
6. *B. tarchonantheoides* DC. **Brazil** (Bahia, Minas Gerais, Paraná, Rio de Janeiro, Santa Catarina, São Paulo).

I.II. *Baccharis* sect. *Canescentes* Giuliano: Seven species occurring in a wide array of ecosystems in southeastern South America, from eastern Paraguay and southeastern Brazil south to the province of Buenos Aires in Argentina.

7. *B. gibertii* Baker. **Brazil** (Rio Grande do Sul). **Uruguay** (Canelones, Cerro Largo, Maldonado, Montevideo, Rocha, San José).
8. *B. gnaphalioides* Spreng. **Argentina** (Buenos Aires). **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Canelones, Maldonado, Montevideo, Rivera, Rocha, Tacuarembó, San José).
9. *B. helichrysoides* DC. **Argentina** (Misiones). **Brazil** (Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Amambay, Caaguazú, Caazapá, Guairá).
10. *B. leucocephala* Dusén. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
11. *B. leucopappa* DC. **Brazil** (Rio Grande do Sul, Santa Catarina).
12. *B. phyllicifolia* DC. **Brazil** (Minas Gerais, Rio de Janeiro, Rio Grande do Sul, Paraná, Santa Catarina, São Paulo).

13. *B. uleana* Malag. **Brazil** (Rio Grande do Sul, Santa Catarina, São Paulo).

II. *Baccharis* subgen. *Oblongifoliae* (DC.) G.Heiden: 18 species mostly in the summits of the main mountainous ranges of South America, the highest diversity found in southeastern Brazil. Species such as *B. oblongifolia* (Ruiz & Pav.) Pers. and *B. rufidula* (Spreng.) Joch.Müll. occur in submontane forests. *Baccharis* sect. *Oblongifoliae* is the only known section to this subgenus (Heiden et al. 2019).

II.I. *Baccharis* sect. *Oblongifoliae* DC.: Same composition and distribution of the subgenus.

14. *B. alpestris* Gardner. **Brazil** (Rio de Janeiro).

15. *B. antioquiensis* Killip & Cuatrec. **Colombia** (Antioquia, Valle de Cauca).

16. *B. ciliata* Gardner. **Brazil** (Rio de Janeiro).

17. *B. coronata* Giuliano. **Brazil** (Rio Grande do Sul, Santa Catarina).

18. *B. crassipappa* Deble & A.S.Oliveira. **Brazil** (Minas Gerais).

19. *B. cutervensis* Hieron. **Ecuador** (Azuay). **Peru** (Amazonas, Cajamarca).

20. *B. densa* (N.E.Br.) V.M.Badillo. **Guyana**. **Brazil** (Roraima). **Venezuela** (Amazonas, Bolívar).

21. *B. dichotoma* G.Heiden & L.D.Meireles. **Brazil** (Minas Gerais, São Paulo).

22. *B. friburgensis* G.Heiden & al. **Brazil** (Rio de Janeiro).

23. *B. grandimucronata* L.Teodoro & J.Vidal. **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Santa Catarina, São Paulo).

24. *B. ligustrina* DC. **Brazil** (Bahia, Distrito Federal, Goiás, Minas Gerais, Paraná, São Paulo).

25. *B. macrophylla* Dusén. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).

26. *B. meridensis* Steyerem. **Venezuela** (Mérida).

27. *B. myricifolia* DC. **Brazil** (Distrito Federal, Goiás, Minas Gerais, Paraná, Santa Catarina, São Paulo).

28. *B. oblongifolia* (Ruiz & Pav.) Pers. **Argentina** (Misiones). **Bolivia** (Cochabamba, La Paz, Santa Cruz). **Brazil** (Amazonas, Bahia, Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Roraima, Santa Catarina, São Paulo). **Colombia** (Antioquia, Boyacá, Caquetá, Cauca, Cesar, Chocó, Cundinamarca, La Guajira, Huila, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Santander, Valle de Cauca). **Ecuador** (Azuay, Carchi, Loja, Morona-Santiago, Napo, Pichincha, Sucumbios, Tungurahua, Zamora-Chinchi). **Peru** (Amazonas, Cajamarca, Cuzco, Junín, Huánuco, Loreto, Pasco, San Martín, Ucayali). **Venezuela** (Amazonas, Bolívar, Lara, Mérida, Táchira, Trujillo, Zulia).

29. *B. rufidula* (Spreng.) Joch.Müll. **Brazil** (Espírito Santo, Minas Gerais, Rio de Janeiro).

30. *B. vismioides* DC. **Brazil** (Minas Gerais, Paraná, São Paulo).

31. *B. vitis-idaea* Oliver. ex Thurn. **Brazil** (Amazonas, Roraima). **Guyana**. **Venezuela** (Amazonas, Bolívar).

III. *Baccharis* subgen. *Heterothalamus* (Less.) G.Heiden: Three sections and seven species. The three lineages are found in distinct regions, in Serra do Caparaó, southeastern Brazil, along the Andes from northern Argentina to Peru, and in pampean mountains and hilly ranges of Argentina, southern Brazil, and Uruguay (Heiden et al. 2019).

III.I. *Baccharis* sect. *Bradeanae* G.Heiden: Two species, both endemic to Serra do Caparaó in southeastern Brazil.

32. *B. dubia* Deble & A.S.Oliveira. **Brazil** (Espírito Santo, Minas Gerais).

33. *B. magnifica* G.Heiden & al. **Brazil** (Espírito Santo, Minas Gerais).

III.II. *Baccharis* sect. *Psila* (Phil.) Cuatrec.: Two species restricted to salt plains, marshes, and streams in high-elevation areas along the Andes.

34. *B. acaulis* (Wedd. ex R.E.Fr.) Cabrera. **Argentina** (Catamarca, Jujuy, Salta). **Bolivia** (Cochabamba, La Paz, Oruro, Potosí, Tarija). **Chile** (Arica y Parinacota, Tarapacá). **Peru** (Cusco, Puno).

35. *B. davidsonii* Cuatrec. **Peru** (Junín).

III.III. *Baccharis* sect. *Heterothalamus* (Less.) Giuliano: Three species occurring in central Argentina, southern Brazil, and Uruguay.

36. *B. aliena* (Spreng.) Joch.Müll. **Argentina** (Córdoba, La Rioja, San Luis). **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Canelones, Cerro Largo, Durazno, Florida, Lavalleja, Maldonado, Montevideo, Río Negro, Rivera, Rocha, Tacuarembó, Treinta y Tres).

37. *B. hyemalis* Deble. **Brazil** (Rio Grande do Sul).

38. *B. psiadioides* (Less.) Joch.Müll. **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Cerro Largo, Rivera, Tacuarembó, Treinta y Tres).

IV. *Baccharis* subgen. *Molina* (Pers.) Heering: 21 sections and 150 species, from southwestern USA to southern South America. Mexico, the Andes, and southeastern Brazil are the main centers of species richness. 27 species are still placed in 8 sections with unknown relationships, and 18 species still lack a hypothesis of relationships with any of the remaining sections and species of the subgenus (Heiden et al. 2019).

IV.I. *Baccharis* sect. *Palenia* Giuliano: *Baccharis nivalis* is the only species placed in the section, occurring in Argentinean and Chilean Patagonia.

39. *B. nivalis* (Wedd.) Sch.Bip. ex Phil. **Argentina** (Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego). **Chile** (Aysén, Araucanía, Los Lagos, Los Ríos, Magallanes y Antártica, Maule).

IV.II. *Baccharis* sect. *Subliguliflorae* Giuliano: Seven species occurring mostly in the monte dry thorn scrub and prepuna and puna mountain vegetations from northwestern Argentina and Bolivia.

40. *B. beckii* Joch.Müll. **Bolivia** (Chuquisaca, Potosí, Tarija).

41. *B. cabreræ* Ariza. **Argentina** (Catamarca, Salta, Tucumán).
42. *B. niederleinii* Heering. **Argentina** (La Rioja, San Juan).
43. *B. potosiensis* H.Rob. **Bolivia** (Chuquisaca, Potosí).
44. *B. potrerillana* (Ariza) G.Heiden. **Argentina** (La Rioja, San Juan).
45. *B. torricoi* Joch.Müll. **Bolivia** (Cochabamba, Potosí, Tarija).
46. *B. woodii* Joch.Müll. **Bolivia** (Potosí).

IV.III. *Baccharis* sect. *Thymifoliae* Giuliano: Two species from the prepuna and puna vegetations from northwestern Argentina and Bolivia.

47. *B. grisebachii* Hieron. **Argentina** (Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, Tucumán). **Bolivia** (Potosí, Tarija).
48. *B. thymifolia* Hook. & Arn. **Argentina** (Mendoza).

IV.IV. *Baccharis* sect. *Trinervatae* DC.: 13 species, most of them are widespread and distributed in forest edges of tropical Central and South America. *Baccharis pedunculata* (Mill.) Cabrera and *B. trinervis* Pers. are widespread species, while *B. steetzii* Andersson is endemic to the Galápagos, and *B. acutata* (Alain) Borhidi, *B. nipensis* Urb., and *B. orientalis* Alain are endemic to Cuba. *Baccharis retamoides* Phil. is a desert subshrub from central Argentina.

49. *B. acutata* (Alain) Borhidi. **Cuba**.
50. *B. bifrons* Baker. **Brazil** (Rio de Janeiro).
51. *B. cinerea* DC. **Brazil** (Alagoas, Bahia, Ceará, Distrito Federal, Espírito Santo, Minas Gerais, Paraíba, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Sergipe, São Paulo).
52. *B. debilis* Rusby. **Argentina** (Chaco, Corrientes, Formosa, Jujuy, Misiones, Salta). **Bolivia** (Beni, Chuquisaca, Cochabamba, La Paz, Pando, Santa Cruz, Tarija). **Paraguay** (Concepción). **Peru** (Cajamarca, Cusco, Huánuco, San Martín). **Venezuela** (Aragua, Mérida).
53. *B. nervosa* DC. **Guadeloupe. Martinique. Trinidad and Tobago**.
54. *B. nipensis* Urb. **Cuba**.
55. *B. orientalis* Alain. **Cuba**.
56. *B. pedunculata* (Mill.) Cabrera. **Bolivia** (Beni, Cochabamba, La Paz, Santa Cruz). **Colombia** (Antioquia, Boyacá, Caldas, Cauca, Chocó, Cundinamarca, Huila, Nariño, Norte de Santander, Putumayo, Quindío, Santander, Tolima, Valle de Cauca). **Costa Rica. Dominica. Ecuador** (Azuay, Cañar, Chimborazo, Cotopaxi, Imbabura, Morona-Santiago, Napo, Pastaza, Pichincha, Sucumbíos, Tungurahua, Zamora-Chinchipe). **El Salvador. Guatemala. Honduras. Martinique. Mexico** (Chiapas). **Montserrat. Nicaragua. Panama. Peru** (Cajamarca, Cusco, Huánuco, Junín, Madre de Dios, Pasco, Piura, San Martín). **Saba. Saint Kitts and Nevis. Saint Lucia. Saint Vincent and the Grenadines. Venezuela** (Distrito Federal, Mérida, Miranda, Portuguesa, Táchira, Trujillo).
57. *B. quitensis* Kunth. **Argentina** (Catamarca, Jujuy, La Rioja, Salta, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz, Tarija). **Brazil** (Mato Grosso, Mato Grosso do Sul, Minas Gerais, Rondônia, São Paulo).



- Ecuador** (Guayas, Loja, Pichincha). **Peru** (Amazonas, Apurímac, Cajamarca, La Libertad, Loreto, Piura, Puno).
58. *B. retamoides* Phil. **Argentina** (Catamarca, La Rioja, Mendoza, Salta, San Juan, Tucumán).
59. *B. spartea* Benth. **Peru** (Ancash, Ayacucho, Cajamarca, La Libertad, Lima).
60. *B. steetzii* Andersson. **Ecuador** (Galápagos).
61. *B. trinervis* Pers. **Argentina** (Chaco, Corrientes, Formosa, Jujuy, Misiones, Salta, Santiago del Estero). **Belize**. **Bolivia** (Beni, Chuquisaca, Cochabamba, La Paz, Pando, Santa Cruz, Tarija). **Brazil** (Acre, Alagoas, Bahia, Distrito Federal, Espírito Santo, Minas Gerais, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Rondônia, Roraima, Santa Catarina, São Paulo). **Colombia** (Antioquia, Atlántico, Bolívar, Boyacá, Caldas, Caquetá, Cauca, Cesar, Chocó, Cundinamarca, La Guajira, Guaviare, Huila, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Quindío, Risaralda, Santander, Sucre, Tolima, Valle de Cauca). **Costa Rica**. **Ecuador** (Azuay, Bolívar, Carchi, Chimborazo, Cotopaxi, El Oro, Esmeraldas, Guayas, Imbabura, Loja, Los Ríos, Manabí, Morona-Santiago, Napo, Orellana, Pastaza, Pichincha, Sucumbíos, Tungurahua, Zamora-Chinchipec). **El Salvador**. **Guatemala**. **Guyana**. **Honduras**. **Mexico** (Campeche, Chiapas, Colima, Estado de México, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Oaxaca, Puebla, Querétaro, Quintana Roo, San Luis Potosí, Sinaloa, Tabasco, Tamaulipas, Veracruz, Yucatán). **Nicaragua**. **Panama**. **Paraguay** (Alto Paraguay, Amambay, Boquerón, Canindeyú, Central, Concepción, Cordillera, Guairá, Paraguari, Presidente Hayes, San Pedro). **Peru** (Amazonas, Cajamarca, Cuzco, Huánuco, Junín, Lambayeque, La Libertad, Loreto, Madre de Dios, Pasco, Piura, Puno, San Martín, Tumbes, Ucayali). **Trinidad and Tobago**. **Venezuela** (Amazonas, Anzoátegui, Aragua, Barinas, Bolívar, Carabobo, Distrito Federal, Lara, Mérida, Miranda, Monagas, Nueva Esparta, Portuguesa, Sucre, Táchira, Trujillo, Zulia).
- IV.V. *Baccharis* sect. *Austerales* Giuliano: *Baccharis racemosa* is the only species and occurs in Patagonia.
62. *B. racemosa* (Ruiz & Pav.) DC. **Argentina** (Chubut, Neuquén, Río Negro). **Chile** (Araucanía, Aysén, Bío Bío, Coquimbo, Los Lagos, Los Ríos, Maule, Ñuble, O'Higgins, Valparaíso).
- IV.VI. *Baccharis* sect. *Bogotenses* Cuatrec.: 18 species occurring from Argentina and Uruguay to North America, where it is slightly more diverse.
63. *B. bogotensis* Kunth. **Colombia** (Boyacá, Cesar, Cundinamarca, Meta, Norte de Santander, Santander).
64. *B. brachyphylla* A.Gray. **Mexico** (Baja California, Baja California Sur, Chihuahua, Sonora). **USA** (Arizona, California, Nevada, New Mexico, Texas).
65. *B. charucoensis* G.L.Nesom. **Mexico** (Michoacán).
66. *B. erosoricola* Rzed. **Mexico** (Estado de México, Hidalgo, Quintana Roo).
67. *B. glabrata* (Hoover) G.Heiden. **USA** (California).

68. *B. gracilis* DC. **Brazil** (Distrito Federal, Goiás, Minas Gerais, Paraná, Rio de Janeiro, São Paulo). **Paraguay** (Caazapá, Guairá).
69. *B. macrocephala* Sch.Bip. ex Greenm. **Mexico** (Estado de México, Hidalgo, Morelos, Puebla, Veracruz).
70. *B. maxima* Baker. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).
71. *B. mutisiana* Cuatrec. **Colombia** (Boyacá, Cundinamarca, Meta, Norte de Santander, Santander). **Venezuela** (Mérida, Táchira, Trujillo).
72. *B. occidentalis* S.F.Blake. **Mexico** (Guanajuato, Guerrero, Jalisco, Nayarit, Sinaloa, San Luis Potosí, Zacatecas).
73. *B. plummerae* A.Gray. **USA** (California).
74. *B. pteronioides* DC. **Mexico** (Aguascalientes, Chihuahua, Coahuila, Colima, Durango, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Tlaxcala, Veracruz, Zacatecas). **USA** (Arizona, New Mexico, Texas).
75. *B. ramiflora* A.Gray. **Mexico** (Guanajuato, Guerrero, Hidalgo, Querétaro, San Luis Potosí, Veracruz, Yucatán).
76. *B. saliens* Rusby. **Bolivia** (Cochabamba, La Paz, Santa Cruz). **Peru** (Cusco).
77. *B. serranoi* H.Rob. **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz).
78. *B. solomonii* H.Rob. **Bolivia** (La Paz).
79. *B. texana* (Torr. & A.Gray) A.Gray. **Mexico** (Chihuahua, Coahuila, Durango, Nuevo León, Tamaulipas). **USA** (New Mexico, Oklahoma, Texas).
80. *B. wrightii* A.Gray. **Mexico** (Chihuahua, Durango, Sonora). **USA** (Arizona, Colorado, Kansas, New Mexico, Oklahoma, Texas, Utah).
- IV.VII. *Baccharis* sect. *Paniculatae* Heering: Two species, *B. paniculata*, from Chile, and *B. effusa*, from northwestern Argentina and southwestern Bolivia.
81. *B. effusa* Griseb. **Argentina** (Catamarca, Jujuy, Salta, Tucumán).
82. *B. paniculata* DC. **Chile** (Atacama, Bío Bío, Coquimbo, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso).
- IV.VIII. *Baccharis* sect. *Arenariae* Giuliano: *Baccharis arenaria* is the only species and occurs in riverine and lake shore vegetation in northeastern Argentina, southern Brazil, and Uruguay.
83. *B. arenaria* Baker. **Argentina** (Corrientes, Entre Ríos). **Brazil** (Rio Grande do Sul). **Uruguay** (Canelones, Cerro Largo, Colonia, Florida, Lavalleja, Maldonado, Montevideo, Rocha, San José, Tacuarembó).
- IV.IX. *Baccharis* sect. *Polifoliae* G.Heiden: *Baccharis polifolia* is the only species and occurs in the Andes from northwestern Argentina to southwestern Bolivia.
84. *B. polifolia* Griseb. **Argentina** (Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, Tucumán). **Bolivia** (Tarija).

IV.X. *Baccharis* sect. *Pseudobaccharis* (Cabrera) Cuatrec.: Three species, occurring in the puna, prepuna, and altoandina vegetations in northwestern Argentina and Bolivia.

85. *B. boliviensis* (Wedd.) Cabrera. **Argentina** (Catamarca, Jujuy, Salta, Tucumán). **Bolivia** (Cochabamba, La Paz, Oruro, Potosí, Tarija). **Chile** (Arica y Parinacota, Antofagasta, Tarapacá). **Peru** (Arequipa, Cusco, La Libertad, Puno, Tacna).
86. *B. spartioides* (Hook. & Arn. ex DC.) Remy. **Argentina** (Buenos Aires, Catamarca, Chubut, Córdoba, Jujuy, La Pampa, La Rioja, Mendoza, Neuquén, Río Negro, Salta, Santa Cruz, San Juan, San Luis, Tucumán). **Chile** (Atacama).

IV.XI. *Baccharis* sect. *Angustifoliae* Baker: Seven species from the northern Andes (*B. arguta*) to Patagonia, where most of the species are found, with one species (*B. orbignyana* Klatt) in the eastern Bolivian and central Brazilian tropical savannas (cerrado).

87. *B. arguta* Gillies ex Hook. & Arn. **Argentina** (Catamarca, Córdoba, Jujuy, La Rioja, Mendoza, Salta, San Juan, San Luis, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz). **Peru** (Apurímac, Ayacucho, Cusco, Puno).
88. *B. darwinii* Hook. & Arn. **Argentina** (Buenos Aires, Catamarca, Chaco, Chubut, Córdoba, Corrientes, Entre Ríos, Formosa, La Pampa, La Rioja, Mendoza, Neuquén, Río Negro, Salta, Santa Cruz, Tucumán). **Bolivia** (Cochabamba, La Paz, Potosí). **Uruguay** (Río Negro).
89. *B. gilliesii* A.Gray. **Argentina** (Buenos Aires, Catamarca, Chaco, Chubut, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Mendoza, Río Negro).
90. *B. melanopotamica* Speg. **Argentina** (Buenos Aires, Chubut, Córdoba, La Pampa, Río Negro, San Luis).
91. *B. orbignyana* Klatt. **Bolivia** (Santa Cruz). **Brazil** (Bahia, Distrito Federal, Goiás, Minas Gerais).
92. *B. petrophila* R.E.Fr. **Argentina** (Jujuy, Salta).
93. *B. ulicina* Hook. & Arn. **Argentina** (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Río Negro, Salta, Santa Cruz, Santiago del Estero, Santa Fe, San Luis, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, Potosí, Santa Cruz, Tarija).

IV.XII. *Baccharis* sect. *Serrulatae* Cuatrec.: Eight species from the páramos vegetation of the northern Andes, mainly Colombia and Ecuador.

94. *B. arbutifolia* Vahl. **Ecuador** (Azuay, Bolívar, Carchi, Chimborazo, Cotopaxi, Imbabura, Morona-Santiago, Napo, Pichincha, Tungurahua).
95. *B. caldasiana* Cuatrec. **Colombia** (Caldas, Risaralda, Tolima).
96. *B. ledifolia* Kunth. **Colombia** (Amazonas, Cajamarca).

97. *B. padifolia* Hieron. **Colombia** (Cauca, Magdalena, Nariño). **Ecuador** (Azuay, Carchi, Chimborazo, Cotopaxi, Imbabura, Napo, Pichincha, Tungurahua).
98. *B. prunifolia* Kunth. **Colombia** (Antioquia, Arauca, Boyacá, Caldas, Cauca, Cesar, Cundinamarca, Magdalena, Meta, Nariño, Norte de Santander, Santander, Valle de Cauca). **Venezuela** (Lara, Mérida, Táchira, Trujillo).
99. *B. revoluta* Kunth. **Colombia** (Boyacá, Caldas, Cundinamarca, Tolima, Santander, Valle de Cauca).
100. *B. rupicola* Kunth. **Colombia** (Arauca, Boyacá, Caldas, Cauca, Cundinamarca, Meta, Norte de Santander, Risaralda, Santander, Tolima, Valle de Cauca).
101. *B. vacciniifolia* Cuatrec. **Colombia** (Boyacá, Cundinamarca, Tolima, Valle de Cauca).

IV.XIII. *Baccharis* sect. *Corymbosae* Heering: 37 species occurring from the southwestern USA to central Argentina and Chile. Two centers of diversity: one along the eastern slope of the Andes and the other along the mountain ranges of south-eastern Brazil.

102. *B. alnifolia* Meyen & Walp. **Chile** (Arica y Parinacota, Antofagasta, Tarapacá). **Peru** (Arequipa, La Libertad, Moquegua, Tacna).
103. *B. anomala* DC. **Argentina** (Entre Ríos, Misiones). **Brazil** (Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Caaguazú, Caazapá, Guairá). **Uruguay** (Artigas, Cerro Largo, Durazno, Maldonado, Río Negro, Rivera, Rocha, Tacuarembó, Treinta y Tres).
104. *B. auriculigera* Hieron. **Ecuador** (Chimborazo, Cañar, Loja). **Peru** (Amazonas, Cajamarca, Cusco, La Libertad, Lambayeque, Piura).
105. *B. breviseta* DC. **Argentina** (Buenos Aires, Chaco, Corrientes, Entre Ríos, Misiones). **Brazil** (Bahia, Distrito Federal, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Colombia** (Antioquia, Boyacá, Cundinamarca). **Paraguay** (Caazapá, Central, Concepción, Cordillera, Guairá, Itapúa, Paraguari). **Uruguay** (Canelones, Cerro Largo, Colonia, Florida, Montevideo, Río Negro, Rocha, San José, Tacuarembó).
106. *B. calliprinos* Griseb. **Argentina** (Catamarca, La Rioja, Mendoza, Salta, San Juan, Tucumán).
107. *B. cana* Joch.Müll. **Bolivia** (Chuquisaca).
108. *B. capitalensis* Heering. **Argentina** (Jujuy, Salta, Tucumán). **Bolivia** (Santa Cruz, Tarija).
109. *B. clavata* (Joch.Müll.) G.Heiden. **Argentina** (Catamarca, Jujuy, La Rioja, Salta). **Bolivia** (Cochabamba, La Paz, Oruro, Potosí, Tarija).
110. *B. conyzoides* (Less.) DC. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).



111. *B. decussata* (Klatt) Hieron. **Colombia** (Antioquia, Boyacá, Caldas, Cauca, Cundinamarca, Huila, Nariño, Norte de Santander, Putumayo, Santander, Tolima, Valle de Cauca). **Ecuador** (Cotopaxi, Loja, Morona-Santiago, Pichincha). **Peru** (Amazonas, Cajamarca, Huánuco). **Venezuela** (Mérida, Táchira, Trujillo).
112. *B. douglasii* DC. **Mexico** (Baja California). **USA** (California, Oregon).
113. *B. densiflora* Wedd. **Bolivia** (Chuquisaca, Cochabamba, La Paz).
114. *B. famatinensis* Ariza. **Argentina** (La Rioja).
115. *B. floribundoides* Cuatrec. **Colombia** (Valle de Cauca).
116. *B. glutinosa* Pers. **Argentina** (Buenos Aires, Catamarca, Chaco, Chubut, Córdoba, Corrientes, Distrito Federal, Entre Ríos, Formosa, Jujuy, La Pampa, La Rioja, Mendoza, Misiones, Neuquén, Río Negro, Salta, Santiago del Estero, Santa Fe, San Juan, San Luis, Tucuman). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz, Tarija). **Brazil** (Bahia, Espírito Santo, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Chile** (Bío Bío, Los Lagos, Los Ríos, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso). **Paraguay** (Alto Paraguay, Amambay, Caaguazú, Canindeyú, Central, Chaco, Concepción, Cordillera, Guairá, Misiones, Nueva Asunción, Paraguari, Presidente Hayes). **Peru** (Cusco). **Uruguay** (Canelones, Cerro Largo, Colonia, Maldonado, Montevideo, Paysandú, Río Negro, Salto, San José, Soriano).
117. *B. haitiensis* Heering. **Dominican Republic. Haiti**.
118. *B. imbricata* L. Teodoro & J. Vidal. **Brazil** (Espírito Santo, Minas Gerais).
119. *B. jelskii* Hieron. **Bolivia** (Cochabamba, La Paz). **Colombia** (Antioquia, Boyacá, Cauca, Cundinamarca, Huila, Meta, Nariño, Tolima, Valle de Cauca). **Ecuador** (Azuay, Bolívar, Chimborazo, Loja, Napo, Pastaza, Pichincha, Tungurahua, Zamora-Chinchipec). **Peru** (Amazonas, Cajamarca, Pasco).
120. *B. juncea* (Lehm.) Desf. **Argentina** (Buenos Aires, Catamarca, Chubut, Córdoba, Entre Ríos, Jujuy, La Pampa, La Rioja, Mendoza, Neuquén, Río Negro, Salta, Santa Cruz, Santiago del Estero, Santa Fe, San Juan, San Luis, Tucumán). **Chile** (Arica y Parinacota, Antofagasta, Atacama, Coquimbo, Maule, Tarapacá). **Uruguay** (Montevideo).
121. *B. latifolia* (Ruiz & Pav.) Pers. **Argentina** (Catamarca, Jujuy, La Rioja, Salta, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz, Tarija). **Colombia** (Antioquia, Bolívar, Boyacá, Caldas, Cauca, Chocó, Cundinamarca, La Guajira, Huila, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Quindío, Risaralda, Santander, Tolima, Valle de Cauca). **Ecuador** (Azuay, Bolívar, Cañar, Carchi, Chimborazo, Cotopaxi, Imbabura, Loja, Morona-Santiago, Napo, Orellana, Pastaza, Pichincha, Sucumbíos, Tungurahua, Zamora-Chinchipec). **Peru** (Amazonas, Ancash, Apurimac, Arequipa, Ayacucho, Cajamarca, Callao, Cuzco, Huánuco, Huancavelica, Junín, La Libertad, Lima, Moquegua, Pasco, Puno). **Venezuela** (Mérida, Táchira, Trujillo).

122. *B. lewisii* (H. Rob.) Joch. Müll. **Bolivia** (La Paz).
123. *B. lilloi* Heering. **Argentina** (Catamarca, Jujuy, Salta, Tucumán). **Bolivia** (Tarija).
124. *B. monoica* G.L. Nesom. **El Salvador. Guatemala. Honduras. Nicaragua.**
125. *B. multibracteata* (Joch. Müll.) G. Heiden. **Peru** (Apurímac, Cusco, Junín).
126. *B. multiflosculosa* Heering. **Argentina** (Catamarca, Salta Tucumán). **Bolivia** (Tarija).
127. *B. oxyodonta* DC. **Argentina** (Misiones). **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Alto Paraguay, Amambay, Caazapá, Central, Guairá, Paraguari). **Uruguay** (Canelones, Colonia, Florida, Maldonado, Montevideo).
128. *B. pentlandii* DC. **Bolivia** (Cochabamba, La Paz). **Peru** (Puno).
129. *B. perulata* Kuntze. **Argentina** (Catamarca, Jujuy, La Rioja, Salta, Tucumán).
130. *B. pingraea* DC. **Argentina** (Buenos Aires, Catamarca, Chaco, Chubut, Córdoba, Corrientes, Distrito Federal, Entre Ríos, Formosa, Jujuy, La Pampa, La Rioja, Mendoza, Misiones, Neuquén, Río Negro, Salta, San Juan, San Luis, Santa Fé, Santiago del Estero). **Chile** (Araucanía, Atacama, Bío Bío, Coquimbo, Maule, Metropolitana, Ñuble, O'Higgins, Tarapacá, Valparaíso). **Brazil** (Rio Grande do Sul). **Paraguay** (Misiones). **Uruguay** (Colonia, Lavalleja, Montevideo, Salto, San José, Soriano).
131. *B. polygama* Ariza. **Argentina** (Tucumán).
132. *B. punctulata* DC. **Argentina** (Buenos Aires, Catamarca, Chaco, Corrientes, Entre Ríos, Formosa, Jujuy, Misiones, Santa Fe, Tucumán, Salta). **Bolivia** (Chuquisaca, Santa Cruz). **Brazil** (Espírito Santo, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Amambay, Caaguazú, Caazapá, Canindeyú, Central, Cordillera, Guairá, Paraguari, San Pedro). **Uruguay** (Artigas, Cerro Largo, Colonia, Durazno, Florida, Maldonado, Montevideo, Paysandú, Salto, San José, Soriano, Tacuarembó, Treinta y Tres).
133. *B. pycnantha* Phil. **Chile** (Atacama, Tarapacá).
134. *B. salicifolia* (Ruiz & Pav.) Pers. **Argentina** (Buenos Aires, Catamarca, Chaco, Chubut, Córdoba, Corrientes, Distrito Federal, Entre Ríos, Formosa, Jujuy, La Pampa, La Rioja, Mendoza, Misiones, Neuquén, Río Negro, Salta, Santa Cruz, Santiago del Estero, Santa Fe, San Juan, San Luis, Tucumán). **Bolivia** (Beni, Chuquisaca, Cochabamba, La Paz, Oruro, Potosí, Santa Cruz, Tarija). **Brazil** (Acre, Mato Grosso, Minas Gerais). **Chile** (Antofagasta, Araucanía, Arica y Parinacota, Atacama, Bío Bío, Coquimbo, Los Lagos, Los Ríos, Maule, Metropolitana, Ñuble, O'Higgins, Tarapacá, Valparaíso). **Colombia** (Casanare, Cauca, Huila, Meta, Putumayo, Tolima). **Ecuador** (Chimborazo, Loja, Napo, Zamora-Chinchipe). **El Salvador. Guatemala. Honduras. Mexico** (Aguascalientes, Baja California, Baja California Sur, Chiapas, Chihuahua, Coahuila,

- Colima, Durango, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Tlaxcala, Veracruz, Zacatecas). **Paraguay** (Alto Paraguay, Boquerón, Central, Nueva Asunción, Presidente Hayes). **Peru** (Amazonas, Ancash, Arequipa, Apurímac, Cajamarca, Callao, Cusco, Huánuco, Ica, Junín, La Libertad, Lambayeque, Lima, Loreto, Madre Dios, Pasco, San Martín, Tacna, Tumbes, Ucayali). **USA** (Arizona, California, Colorado, Nevada, New Mexico, Texas, Utah). **Uruguay** (Colonia). **Venezuela** (Portuguesa, Trujillo).
135. *B. scandens* (Ruiz & Pav.) Pers. **Chile** (Antofagasta, Arica y Parinacota, Atacama, Tarapacá). **Peru** (Arequipa, Cajamarca, Lambayeque, La Libertad, Lima, Tacna).
136. *B. sculpta* Griseb. **Argentina** (Catamarca, Jujuy, La Rioja, Salta, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, Oruro, Potosí, Tarija).
137. *B. serrulata* (Lam.) Pers. **Brazil** (Alagoas, Bahia, Espírito Santo, Minas Gerais, Paraíba, Pernambuco, Rio de Janeiro, São Paulo).
138. *B. sphaerocephala* Hook. & Arn. **Chile** (Araucanía, Bío Bío, Los Lagos, Los Ríos).
139. *B. stenophylla* Ariza. **Argentina** (Buenos Aires, Catamarca, Córdoba, La Pampa, La Rioja, Santa Fe, San Luis). **Uruguay** (Colonia, Flores, Florida, Montevideo, Río Negro).
140. *B. stylosa* Gardner. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).
141. *B. vulneraria* Baker. **Argentina** (Buenos Aires, Chaco, Corrientes, Entre Ríos, Misiones, Santa Fe). **Brazil** (Espírito Santo, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caaguazú, Central, Cordillera, Guairá, Paraguairí). **Uruguay** (Artigas, Canelones, Colonia, Florida, Maldonado, Montevideo, Río Negro, Rivera, Rocha, Salto, San José, Tacuarembó, Treinta y Tres).

**Sections of unknown relationships within *Baccharis* subgen. *Molina*.**

IV.XIV. *Baccharis* sect. *Albidae* Giuliano: *Baccharis albida* is the only species and occurs in marshes in northeastern Argentina.

142. *B. albida* Hook. & Arn. **Argentina** (Buenos Aires, Chaco, Corrientes, Entre Ríos, Santa Fe).

IV.XV. *Baccharis* sect. *Aristidenthes* G.L.Nesom: Nine species, mostly from North America, except for *B. hirta* DC. Native to southeastern Brazil and Uruguay.

143. *B. brevipappa* (McVaugh) G.L.Nesom. **Mexico** (Aguascalientes, Colima, Durango, Guerrero, Jalisco, Michoacán, Zacatecas).
144. *B. herbacea* (McVaugh) G.L.Nesom. **Mexico** (Michoacán).
145. *B. hirta* DC. **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Uruguay** (Maldonado, Montevideo, Rivera).

146. *B. horizontalis* G.L.Nesom. **Mexico** (Durango, Sinaloa).  
 147. *B. malibuensis* R.M.Beauch. & Henrickson. **USA** (California).  
 148. *B. multiflora* Kunth. **Mexico** (Chiapas, Durango, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Morelos, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Tlaxcala, Veracruz, Zacatecas).  
 149. *B. praetermissa* G.L.Nesom. **Mexico** (Baja California Sur).  
 150. *B. serrifolia* DC. **El Salvador. Guatemala. Honduras. Mexico** (Chiapas, Estado de México, Guerrero, Hidalgo, Oaxaca, Puebla, San Luis Potosí, Tlaxcala, Veracruz). **Nicaragua**.  
 151. *B. sordescens* DC. **Mexico** (Chiapas, Estado de México, Guanajuato, Guerrero, Hidalgo, Michoacán, Morelos, Oaxaca, Puebla, Querétaro, San Luis Potosí, Tamaulipas, Tlaxcala, Veracruz).

IV.XVI. *Baccharis* sect. *Gladiatae* Cuatrec.: *Baccharis marcetiifolia* is the only species and occurs in the Andes from southern Colombia to Ecuador.

152. *B. marcetiifolia* Benth. **Ecuador** (Chimborazo, Napo, Pichincha). **Colombia** (Nariño).

IV.XVII. *Baccharis* sect. *Pinnatae* Cuatrec.: Three species that occur in the northern Andes from Colombia to Ecuador.

153. *B. ayacuchensis* Cuatrec. **Peru** (Ayacucho).  
 154. *B. buddlejoides* Kunth. **Colombia** (Antioquia, Cauca, Nariño, Tolima, Valle de Cauca). **Ecuador** (Imbabura, Morona-Santiago, Napo, Pastaza, Pichincha, Sucumbíos, Tungurahua, Zamora-Chinchipec).  
 155. *B. raulii* S.Díaz & Cuatrec. **Colombia** (Quindío).

IV.XVIII. *Baccharis* sect. *Punctatae* Giuliano & G.L.Nesom: Eight North American species, from Mexico and southwestern USA.

156. *B. bigelovii* A.Gray. **Mexico** (Chihuahua, Coahuila, Durango, Nuevo León, San Luis Potosí, Sonora, Tamaulipas). **USA** (Arizona, New Mexico, Texas).  
 157. *B. crassicuneata* G.L.Nesom. **Mexico** (Coahuila, Nuevo León, Tamaulipas).  
 158. *B. mexicana* Cuatrec. **Mexico** (Guerrero, Oaxaca, Puebla, Tamaulipas, Tlaxcala, Veracruz).  
 159. *B. sulcata* DC. **Mexico** (Aguascalientes, Chihuahua, Coahuila, Durango, Guanajuato, Hidalgo, Jalisco, Michoacán, Nuevo León, Querétaro, San Luis Potosí, Tamaulipas, Zacatecas). **USA** (New Mexico, Texas).  
 160. *B. supplex* G.L.Nesom. **Mexico** (Durango).  
 161. *B. thesioides* Kunth. **Mexico** (Aguascalientes, Chihuahua, Durango, Estado de México, Guanajuato, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Nuevo León, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Tlaxcala, Veracruz, Zacatecas). **USA** (Arizona, New Mexico).  
 162. *B. zamoranensis* Rzed. **Mexico** (Guanajuato, Queretaro).  
 163. *B. zamudiorum* Rzed. **Mexico** (Queretaro).



IV.IX. *Baccharis* sect. *Rodrigueziana* Giuliano: *Baccharis rodriguezii* is the only species and occurs in the pre-puna vegetation in northwestern Argentina.

164. *B. rodriguezii* Ariza. **Argentina** (Salta, Tucumán).

IV.XX. *Baccharis* sect. *Tenellae* Giuliano: *Baccharis tenella* is the only species placed in the section and occurs in central and southern Argentina.

165. *B. tenella* Hook. & Arn. **Argentina** (Buenos Aires, Catamarca, Chubut, Córdoba, Corrientes, La Pampa, La Rioja, Mendoza, Néuquen, Río Negro, San Luis, Santa Cruz).

IV.XXI. *Baccharis* sect. *Tubulatae* Cuatrec.: Seven species, occurring mostly in the northern Andes, mainly between Peru and Venezuela.

166. *B. farallonensis* (Cuatrec.) G.Heiden. **Colombia** (Valle de Cauca).

167. *B. fraterna* Cuatrec. **Colombia** (Antioquia, Quindío).

168. *B. grandiflora* Kunth. **Ecuador** (Azuay, Carchi, Chimborazo, Cotopaxi, Imbabura, Napo, Pichincha, Sucumbíos). **Colombia** (Caldas, Cauca, Cundinamarca, Nariño, Tolima, Valle de Cauca).

169. *B. huairacajensis* Hieron. **Ecuador** (Azuay, Chimborazo, Cañar, Cotopaxi, Loja).

170. *B. klattii* Benoist. **Ecuador** (Azuay, Carchi, Chimborazo, Imbabura, Napo, Pichincha). **Colombia** (Nariño, Putumayo).

171. *B. volubilis* Kunth. **Ecuador** (Azuay, Cañar, Loja, Napo, Pichincha). **Peru** (Amazonas, Lambayeque, Piura, San Martín).

172. *B. zumbadorensis* V.M.Badillo. **Venezuela** (Táchira).

IV.XXX. Species with unknown relationships in *B. subgen. Molina*.

173. *B. alamosana* S.F.Blake. **Mexico** (Sonora).

174. *B. cymosa* Phil. **Chile** (Los Lagos, Los Ríos).

175. *B. gnidiifolia* Kunth. **Bolivia** (La Paz). **Chile** (Tarapacá). **Ecuador** (Chimborazo, Loja, Orellana). **Peru** (Amazonas, Ancash, Ayacucho, Cajamarca, La Libertad, Lambayeque, Lima, Piura, Tacna).

176. *B. hambatensis* Kunth. **Ecuador** (Chimborazo, Tungurahua).

177. *B. hutchisonii* Cuatrec. **Peru** (Cajamarca, La Libertad, Lambayeque, Piura).

178. *B. johnwurdackiana* H.Rob. **Peru** (Cusco).

179. *B. libertadensis* (S.B.Jones) H.Rob. **Peru** (La Libertad).

180. *B. mandonii* Klatt. **Bolivia** (Cochabamba, La Paz).

181. *B. mollis* Kunth. **Ecuador** (Pichincha).

182. *B. palmeri* Greenm. **Mexico** (Aguascalientes, Durango, Guanajuato, Jalisco, Zacatecas).

183. *B. pohlii* (Baker) Deble & A.S.Oliveira. **Brazil** (Distrito Federal, Goiás, Minas Gerais).

184. *B. seemannii* A.Gray. **Mexico** (Aguascalientes, Durango, Guanajuato, Jalisco, Nayarit, San Luis Potosí, Zacatecas).

185. *B. taltalensis* I.M.Johnst. **Chile** (Antofagasta, Atacama).

186. *B. tarmensis* Cuatrec. **Peru** (Amazonas, Cajamarca, Junín).
187. *B. uniflora* (Ruiz & Pav.) Pers. **Peru** (Ancash, Cusco, Ica, Junín, La Libertad, Lambayeque).
188. *B. vanessae* R.M.Beauch. **USA** (California).
189. *B. zongoensis* Joch.Müll. **Bolivia** (Cochabamba, La Paz).
- V. *Baccharis* subgen. *Heterothalamulopsis* (Deble, A.S.Oliveira & Marchiori) G. Heiden: *Baccharis* sect. *Heterothalamulopsis* is the only known section to belong to the subgenus, and *B. wagenitzii*, a rupicolous shrub found in cloud forest edges on basaltic cliffs in southern Brazil, is the only species known to belong to this depauperate lineage (Heiden et al. 2019).
- VI. *Baccharis* sect. *Heterothalamulopsis* (Deble, A.S.Oliveira & Marchiori) G. Heiden: A monospecific section, as stated above.
190. *B. wagenitzii* (F.H.Hellw.) Joch.Müll. **Brazil** (Santa Catarina).
- VI. *Baccharis* subgen. *Coridifoliae* (DC.) G.Heiden: Two sections and ten species occurring in moist or dry grasslands and savannas from Bolivia and central Brazil, south to central Argentina (Heiden et al. 2019).
- VI.I. *Baccharis* sect. *Pluricephalae* (Deble) G.Heiden: Two narrowly endemic species from southern Brazil, occurring in highland marshes and peat bogs.
191. *B. pluricapitulata* (Deble) G.Heiden. **Brazil** (Rio Grande do Sul).
192. *B. scabrifolia* G.Heiden. **Brazil** (Rio Grande do Sul, Santa Catarina).
- VI.II. *Baccharis* sect. *Coridifoliae* Giuliano: Eight species occurring in grasslands and savannas from Bolivia and central Brazil, south to central Argentina.
193. *B. albilanosa* A.S.Oliveira & Deble. **Brazil** (Rio Grande do Sul).
194. *B. artemisoides* Hook. & Arn. **Argentina** (Buenos Aires, Catamarca, Córdoba, Corrientes, Entre Ríos, La Pampa, Río Negro, Santa Fe, San Luis, Tucumán). **Uruguay** (Soriano).
195. *B. bicolor* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba, La Paz).
196. *B. coridifolia* DC. **Argentina** (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, La Pampa, La Rioja, Mendoza, Misiones). **Bolivia** (Chuquisaca, Santa Cruz, Tarija). **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Misiones). **Uruguay** (Artigas, Canelones, Cerro Largo, Colonia, Durazno, Flores, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, San José, Soriano, Tacuarembó, Treinta y Tres).
197. *B. erigeroides* DC. **Argentina** (Misiones). **Brazil** (Distrito Federal, Goiás, Mato Grosso do Sul, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
198. *B. napaea* G.Heiden. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
199. *B. ochracea* Spreng. **Argentina** (Entre Ríos). **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina). **Uruguay** (Cerro Largo, Lavalleja, Maldonado, Montevideo, Rivera, Rocha, Tacuarembó, Treinta y Tres).
200. *B. subrectifolia* A.S.Oliveira & Deble. **Brazil** (Paraná).

VII. *Baccharis* subgen. *Baccharis*: 17 sections and 241 species, occurring from the northeastern USA to southern South America.

VII.I. *Baccharis* sect. *Caulopterae* DC.: 15 species occurring from Colombia to central Argentina, with the greatest diversity in southeastern and southern Brazil (Heiden et al. 2019).

201. *B. alpina* Kunth. **Argentina** (Catamarca, Jujuy, Salta, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Oruro, Potosí, Tarija). **Chile** (Arica y Parinacota, Tarapacá). **Colombia** (Caldas, Cauca, Cundinamarca, La Guajira, Risaralda). **Ecuador** (Azuay, Carchi, Chimborazo, Cotopaxi, Imbabura, Napo, Pichincha, Tungurahua). **Peru** (Apurímac, Arequipa, Cusco, Huancavelica, Junín, Pasco, Puno, Tacna).
202. *B. altimontana* G.Heiden & al. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).
203. *B. crispa* Spreng. **Uruguay** (Lavalleja, Maldonado).
204. *B. decurrens* (Vell.) Steff. **Brazil** (Rio de Janeiro),
205. *B. dunensis* A.A.Schneid. & G.Heiden. **Brazil** (Rio Grande do Sul).
206. *B. genistelloides* (Lam.) Pers. **Bolivia** (Cochabamba, La Paz, Oruro). **Chile** (Arica y Parinacota, Tarapacá). **Colombia** (Antioquia, Caldas, Cauca, Cundinamarca, Huila, Nariño, Putumayo, Risaralda, Tolima, Valle de Cauca). **Ecuador** (Azuay, Bolívar, Cañar, Carchi, Chimborazo, Cotopaxi, El Oro, Imbabura, Loja, Morona-Santiago, Napo, Orellana, Pastaza, Pichincha, Sucumbíos, Tungurahua, Zamora-Chinchi). **Peru** (Amazonas, Ancash, Arequipa, Cajamarca, Cuzco, Junín, Huancavelica, Huánuco, La Libertad, Lambayeque, Lima, Loreto, Moquegua, Pasco, Piura, Puno, San Martín, Tacna).
207. *B. jocheniana* G.Heiden & Macias. **Brazil** (Rio Grande do Sul). **Uruguay** (Canelones, Lavalleja, Maldonado, Rocha).
208. *B. lorentzii* (Joch.Müll.) Deble. **Argentina** (Buenos Aires, Córdoba).
209. *B. microcephala* (Less.) DC. **Argentina** (Chaco, Corrientes, Distrito Federal, Entre Ríos, Formosa, Misiones, Santa Fe). **Brazil** (Bahia, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caaguazú, Caazapá, Central, Concepción, Cordillera, Guairá, Ñeembucú, Paraguari, Presidente Hayes, San Pedro). **Uruguay** (Artigas, Canelones, Cerro Largo, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rocha, Salto, San José, Soriano, Tacuarembó, Treinta y Tres).
210. *B. myriocephala* DC. **Brazil** (Bahia, Ceará, Distrito Federal, Espírito Santo, Goiás, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caazapá).
211. *B. opuntioides* Mart. ex Baker. **Brazil** (Espírito Santo, Minas Gerais).
212. *B. polygona* Baker. **Brazil** (Rio Grande do Sul).
213. *B. rectialata* V.Valtierra et al. **Uruguay** (Cerro Largo, Durazno, Treinta y Tres).
214. *B. riograndensis* L.Teodoro & J.Vidal. **Brazil** (Rio Grande do Sul). **Uruguay** (Cerro Largo, Rivera, Treinta y Tres).

215. *B. scopulorum* A.A.Schneid. & G.Heiden. **Brazil** (Santa Catarina).
216. *B. triangularis* Hauman. **Argentina** (Buenos Aires, Chubut, La Pampa, Río Negro, San Luis).
217. *B. trimera* (Less.) DC. **Argentina** (Buenos Aires, Catamarca, Chubut, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Mendoza, Misiones, Río Negro, Salta, Santa Fe, San Juan, San Luis, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz, Tarija). **Brazil** (Bahia, Distrito Federal, Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Amambay, Caaguazú, Caazapá, Canindeyú, Central, Concepción, Guairá, Itapúa, Misiones, Paraguari, San Pedro). **Peru** (Cusco, Puno). **Uruguay** (Artigas, Canelones, Cerro Largo, Colonia, Durazno, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, San José, Soriano, Tacuarembó, Treinta y Tres).

VII.II. *Baccharis* sect. *Aphyllae* Baker: 33 species found along a diverse array of habitats, from sand dunes and dry grasslands to edges of forests and swampy environments, reaching its greatest diversity in southern Brazil, but with many endemic taxa in marginal areas of distribution such as Bolivia, Peru, and the Argentinean Patagonia.

218. *B. aphylla* (Vell.) DC. **Bolivia** (La Paz, Santa Cruz). **Brazil** (Bahia, Minas Gerais, Paraná, São Paulo).
219. *B. apicifoliosa* A.A.Schneid. & Boldrini. **Brazil** (Rio Grande do Sul, Santa Catarina).
220. *B. articulata* (Lam.) Pers. **Argentina** (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Misiones, Salta, Santiago del Estero, Santa Fe, San Luis, Tucumán). **Bolivia** (Chuquisaca, Santa Cruz). **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Amambay, Caaguazú, Central, Cordillera, Guairá, Itapúa, Paraguari, San Pedro). **Uruguay** (Artigas, Canelones, Cerro Largo, Colonia, Durazno, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, San José, Soriano, Treinta y Tres).
221. *B. burchellii* Baker. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).
222. *B. campos-portoana* Malag. **Brazil** (São Paulo).
223. *B. chubutensis* Speg. **Argentina** (Chubut).
224. *B. deblei* A.S.Oliveira & Marchiori. **Brazil** (Rio Grande do Sul, Santa Catarina).
225. *B. flexuosiramosa* A.A.Schneid. & Boldrini. **Brazil** (Rio Grande do Sul, Santa Catarina).
226. *B. genistifolia* DC. **Argentina** (Buenos Aires, Chubut, Córdoba, La Pampa, Santa Fe). **Uruguay** (Canelones, Flores, Maldonado, Montevideo, Rocha, San José).



227. *B. glaziovii* Baker. **Brazil** (Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná).
228. *B. hemiptera* G.Heiden & A.A.Schneid. **Brazil** (Espírito Santo, Minas Gerais).
229. *B. junciformis* DC. **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Uruguay** (Cerro Largo, Rivera).
230. *B. megapotamica* Spreng. **Argentina** (Misiones). **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caaguazú, Caazapá, Guairá). **Uruguay** (Rivera, Rocha, Tacuarembó, Treinta y Tres).
231. *B. milleflora* (Less.) DC. **Brazil** (Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
232. *B. organensis* Baker. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).
233. *B. palustris* Heering. **Brazil** (Minas Gerais, Rio Grande do Sul, Santa Catarina). **Uruguay** (Canelones, Florida).
234. *B. paranensis* Heering & Dusén. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
235. *B. penningtonii* Heering. **Argentina** (Buenos Aires, Corrientes, Distrito Federal, Entre Ríos, Santa Fe). **Brazil** (Rio Grande do Sul). **Uruguay** (Canelones, Cerro Largo, Colonia, Lavalleja, Rocha, San José, Treinta y Tres).
236. *B. pentaptera* (Less.) DC. **Brazil** (Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
237. *B. phyteuma* Heering. **Argentina** (Buenos Aires, Entre Ríos, Santa Fe).
238. *B. phyteumoides* (Less.) DC. **Argentina** (Buenos Aires, Chaco, Corrientes, Entre Ríos, Misiones, Santa Fe). **Brazil** (Rio Grande do Sul). **Paraguay** (Ñeembucú). **Uruguay** (Artigas, Canelones, Cerro Largo, Colonia, Flores, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, San José, Soriano, Tacuarembó).
239. *B. pseudovillosa* L.Teodoro & J.Vidal. **Brazil** (Rio Grande do Sul, Santa Catarina).
240. *B. ramboi* G. Heiden & Macias. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
241. *B. regnellii* Sch.Bip. ex Baker. **Brazil** (Espírito Santo, Minas Gerais, São Paulo).
242. *B. reticulata* (Ruiz & Pav.) Pers. **Ecuador** (Azuay, Loja, Morona-Santiago, Napo, Zamora-Chinchipec). **Peru** (Amazonas, Cajamarca, Huánuco, San Martín).
243. *B. sagittalis* (Less.) DC. **Argentina** (Chubut, Mendoza, Neuquén, Río Negro, San Juan). **Bolivia** (Cochabamba, La Paz, Santa Cruz). **Brazil** (Bahia, Espírito Santo, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Chile** (Aysén, Araucanía, Atacama, Bío Bío,

- Coquimbo, Los Lagos, Los Ríos, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso). **Ecuador** (Azuay, Loja). **Paraguay** (Alto Paraná, Caaguazú, Caazapá). **Peru** (Amazonas, Cajamarca, Junín, La Libertad, Pasco, Piura).
244. *B. sphagnophila* A.A.Schneid. & G.Heiden. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
245. *B. subalata* Wedd. **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz). **Peru** (Cusco, Puno).
246. *B. subbimera* Hieron. **Ecuador** (Zamora-Chinchipec). **Peru** (Amazonas, Cajamarca, Loreto, San Martín).
247. *B. subtropicalis* G.Heiden. **Uruguay** (Florida, Maldonado, Montevideo, Rocha, San José, Soriano).
248. *B. vargasii* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba, Santa Cruz).
249. *B. vincifolia* Baker. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
250. *B. weirii* Baker. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Uruguay** (Rivera).
251. *B. woytkowskii* Joch.Müll. **Peru** (Amazonas, Cajamarca).

VII.III. *Baccharis* sect. *Agglomeratae* Giuliano: 34 species with a high level of diversity and endemism in southeastern Brazil, mainly in the tropical savannas and tropical high-elevation grasslands, some species reaching subtropical highland grasslands from southern Brazil, while *B. platypoda* has a disjunct distribution occurring in the eastern slope of the Andes close to the Bolivian and Peruvian border and along the main mountain chains of eastern Brazil.

252. *B. alleluia* A.S.Oliveira & Deble. **Brazil** (Bahia).
253. *B. angusticeps* Heering ex Malme. **Brazil** (Paraná, Santa Catarina).
254. *B. claussenii* Baker. **Brazil** (Minas Gerais).
255. *B. concinna* G.M.Barroso. **Brazil** (Minas Gerais).
256. *B. elliptica* Gardner. **Brazil** (Bahia, Minas Gerais).
257. *B. intermixta* Gardner. **Brazil** (Bahia, Minas Gerais, Espírito Santo, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).
258. *B. itatiaiae* Wawra. **Brazil** (Minas Gerais, Rio de Janeiro).
259. *B. lateralis* Baker. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).
260. *B. mesoneura* DC. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
261. *B. obdelata* G.Heiden. **Brazil** (Minas Gerais).
262. *B. orbiculata* Deble & A.S.Oliveira. **Brazil** (Bahia).
263. *B. oreophila* Malme. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Santa Catarina, São Paulo).
264. *B. parvidentata* Malag. **Brazil** (Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo).
265. *B. pauciflosculosa* DC. **Brazil** (Paraná, Minas Gerais, Santa Catarina, São Paulo).
266. *B. perlata* Sch.Bip. ex Baker. **Brazil** (Minas Gerais).

267. *B. platypoda* DC. **Bolivia** (La Paz). **Brazil** (Bahia, Espírito Santo, Minas Gerais, Rio de Janeiro, São Paulo). **Peru** (Puno).
268. *B. polyphylla* Gardner. **Brazil** (Bahia, Minas Gerais).
269. *B. pseudomyriocephala* Malag. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, São Paulo).
270. *B. pseudovaccinioides* L.Teodoro. **Brazil** (Rio de Janeiro).
271. *B. ramosissima* Gardner. **Brazil** (Bahia, Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, São Paulo).
272. *B. reticularia* DC. **Brazil** (Bahia, Distrito Federal, Espírito Santo, Goiás, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Santa Catarina, São Paulo).
273. *B. reticularioides* Deble & A.S.Oliveira. **Brazil** (Paraná, São Paulo).
274. *B. retusa* DC. **Brazil** (Rio Grande do Sul, Santa Catarina).
275. *B. salzmannii* DC. **Brazil** (Bahia, Minas Gerais).
276. *B. schultzii* Baker. **Brazil** (Minas Gerais, Rio de Janeiro, São Paulo).
277. *B. serrula* Sch.Bip. ex Baker. **Brazil** (Minas Gerais).
278. *B. simplex* G.Heiden. **Brazil** (Minas Gerais).
279. *B. truncata* Gardner. **Brazil** (Bahia, Minas Gerais).

VII.IV. *Baccharis* sect. *Axillares* (Giuliano) G.Heiden: 14 species diversified on the high-elevation tropical and subtropical grasslands from eastern Brazil and on the low-elevation temperate grasslands from southern Brazil and Uruguay.

280. *B. aracatubaensis* Malag. **Brazil** (Paraná, Santa Catarina).
281. *B. axillaris* DC. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
282. *B. cultrata* Baker. **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Lavalleja, Maldonado, Rivera, Tacuarembó).
283. *B. floccosa* Deble & A.S.Oliveira. **Brazil** (Rio Grande do Sul, Santa Catarina).
284. *B. gaucha* G.Heiden. **Brazil** (Rio Grande do Sul).
285. *B. hypericifolia* Baker. **Brazil** (Rio Grande do Sul, Santa Catarina).
286. *B. incisa* Hook. & Arn. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
287. *B. leptospermoides* DC. **Brazil** (Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo).
288. *B. lymanii* G.M.Barroso ex G.Heiden. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
289. *B. minutiflora* Mart. ex Baker. **Brazil** (Minas Gerais).
290. *B. sphenophylla* Dusén ex Malme. **Brazil** (Minas Gerais, Paraná, Santa Catarina, São Paulo).
291. *B. trilobata* A.S.Oliveira & Marchiori. **Brazil** (Paraná, Santa Catarina).
292. *B. trineura* Soria & Zardini. **Brazil** (Minas Gerais, São Paulo).
293. *B. umbellata* G.Heiden & Ribas. **Brazil** (Paraná).

VII.V. *Baccharis* sect. *Cuneifoliae* DC.: 14 species, all from Argentinean and Chilean Patagonia.

294. *B. concava* (Ruiz. & Pav.) Pers. **Chile** (Bío Bío).
295. *B. elaeoides* Remy. **Argentina** (Chubut, Río Negro). **Chile** (Los Lagos).
296. *B. macraei* Hook. & Arn. **Chile** (Coquimbo, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso).
297. *B. magellanica* (Lam.) Pers. **Argentina** (Chubut, Mendoza, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego). **Chile** (Aysén, Araucanía, Bío Bío, Los Lagos, Los Ríos, Magallanes y Antártica, Maule, Metropolitana, Ñuble, O'Higgins). **Falkland/Malvinas Islands**.
298. *B. minor* (F.H.Hellw.) G.Heiden. **Chile** (Magallanes y Antártica).
299. *B. mylodontis* F.H.Hellw. **Chile** (Magallanes y Antártica).
300. *B. neaei* DC. **Argentina** (Chubut, Mendoza, Neuquén, Río Negro). **Chile** (Aysén, Bío Bío, Coquimbo, Los Lagos, Los Ríos, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso).
301. *B. neotruncata* G.Heiden. **Chile** (Bío Bío, Maule, O'Higgins, Valparaíso).
302. *B. palenae* Phil. **Chile** (Aysén, Araucanía, Bío Bío, Los Lagos, Los Ríos).
303. *B. patagonica* Hook. & Arn. **Argentina** (Chubut, Neuquén, Río Negro, Santa Cruz, Tierra del Fuego). **Chile** (Araucanía, Aysén, Los Lagos, Los Ríos, Magallanes).
304. *B. pilcensis* F.H.Hellw. **Chile** (Bío Bío, Maule).
305. *B. rhomboidalis* Remy. **Chile** (Araucanía, Bío Bío, Los Lagos, Los Ríos).
306. *B. umbelliformis* DC. **Argentina** (Neuquén). **Chile** (Araucanía, Bío Bío).
307. *B. vernalis* F.H.Hellw. **Chile** (Bío Bío, Coquimbo, Maule, Ñuble, O'Higgins, Valparaíso).
308. *B. zoellneri* F.H.Hellw. **Chile** (Aysén, Los Lagos, Magallanes y Antártica). **Falkland/Malvinas Islands**.

VII.VI. *Baccharis* sect. *Illinitae* G.Heiden: Two species of moist or flooded grasslands from southern and central Brazil and eastern Paraguay.

309. *B. illinita* DC. **Brazil** (Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Amambay, Caaguazú).
310. *B. illinitoides* Malag. **Brazil** (Mato Grosso do Sul). **Paraguay** (Amambay, Caaguazú).

VII.VII. *Baccharis* sect. *Racemosae* Ariza: Nine species, most of them from north-eastern Argentina, southeastern Brazil, and eastern Paraguay and Uruguay in grasslands, forests, and savannas. *Baccharis dracunculifolia* has a wider distribution and is also recorded from the Bolivian Andes.

311. *B. amambayensis* Zardini & Soria. **Paraguay** (Amambay).
312. *B. calvescens* DC. **Brazil** (Bahia, Espírito Santo, Minas Gerais, Paraná, Pernambuco, Rio Grande do Sul, Rio de Janeiro, Santa Catarina, São Paulo).



313. *B. dracunculifolia* DC. **Argentina** (Buenos Aires, Catamarca, Chaco, Corrientes, Entre Ríos, Formosa, Jujuy, Misiones, Salta, Santiago del Estero, Santa Fe, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Oruro, Potosí, Santa Cruz, Tarija). **Brazil** (Bahia, Distrito Federal, Espírito Santo, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio Grande do Sul, Rio de Janeiro, Santa Catarina, São Paulo). **Paraguay** (Amambay, Caaguazú, Caazapá, Canindeyú, Central, Cordillera, Guairá, Misiones, Paraguari). **Uruguay** (Artigas, Canelones, Cerro Largo, Florida, Lavalleja, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Salto, Tacuarembó, Treinta y Tres).
314. *B. erioclada* DC. **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Amambay).
315. *B. longiattenuata* A.S.Oliveira & Deble. **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Cerro Largo, Treinta y Tres).
316. *B. montana* DC. **Argentina** (Misiones). **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Caaguazú, Canindeyú, Guairá, Itapúa, Paraguari).
317. *B. rivularis* Gardner. **Brazil** (Distrito Federal, Goiás, Mato Grosso do Sul, Minas Gerais, São Paulo, Tocantins).
318. *B. semiserrata* DC. **Argentina** (Misiones). **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Guairá, Itapúa, Paraguari).
319. *B. uncinella* DC. **Brazil** (Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).
- VII.VIII. *Baccharis* sect. *Tridentatae* Giuliano: Six species, from Bolivia and southeastern Brazil south to eastern Argentina, most of the species occurring in southern Brazil.
320. *B. caprariifolia* DC. **Argentina** (Buenos Aires, Corrientes, Entre Ríos, Misiones). **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Alto Paraná, Caaguazú, Canindeyú, Guairá, San Pedro). **Uruguay** (Rivera, Treinta y Tres).
321. *B. deltoidea* Baker. **Brazil** (Rio Grande do Sul).
322. *B. isabellae* Soria & Zardini. **Paraguay** (Central, Cordillera, Paraguari).
323. *B. nummularia* Heering ex Malme. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina).
324. *B. spicata* (Lam.) Baill. **Argentina** (Buenos Aires, Chaco, Córdoba, Corrientes, Distrito Federal, Entre Ríos, Formosa, La Pampa, Santiago del Estero, Santa Fe). **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Central, Cordillera, Paraguari, Presidente Hayes). **Uruguay** (Canelones, Cerro Largo, Colonia, Florida, Lavalleja, Maldonado, Montevideo, Río Negro, Rocha, Salto, San José, Soriano, Tacuarembó, Treinta y Tres). *Introduced in Portugal.*

325. *B. tridentata* Vahl. **Argentina** (Buenos Aires, Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, La Pampa, Misiones, Salta, Santa Fe). **Bolivia** (Chuquisaca, Cochabamba, Santa Cruz, Tarija). **Brazil** (Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Amambay, Central, Caaguazú, Caazapá, Canindeyú, Concepción, Cordillera, Guairá, Misiones). **Uruguay** (Canelones, Lavalleja, Maldonado, Montevideo, Rivera, Tacuarembó).
326. *B. urvilleana* Brongn. **Brazil** (Rio Grande do Sul, Santa Catarina).

VII.IX. *Baccharis* sect. *Caespitosae* Giuliano: 20 Andean species, occurring from Colombia to Argentina and Chile.

327. *B. buchtienii* H.Rob. **Bolivia** (Cochabamba, La Paz, Santa Cruz). **Peru** (Cusco).
328. *B. caespitosa* (Ruiz & Pav.) Pers. **Bolivia** (Cochabamba, La Paz, Oruro, Potosí, Tarija). **Peru** (Ancash, Apurímac, Arequipa, Ayacucho, Cajamarca, Cusco, Huánuco, Huancavelica, Junín, La Libertad, Lambayeque, Lima, Moquegua, Pasco, Puno).
329. *B. chaparensis* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba).
330. *B. chrysophylla* (F.H.Hellw.) G.Heiden. **Bolivia** (Oruro). **Chile** (Arica y Parinacota, Tarapacá).
331. *B. corymbosa* (Ruiz & Pav.) Pers. **Peru** (Huánuco, Pasco).
332. *B. fimbriata* (Joch.Müll.) G.Heiden. **Argentina** (Jujuy, Salta). **Bolivia** (Potosí, Oruro, Tarija).
333. *B. incarum* (Wedd.) Perkins. **Argentina** (Jujuy). **Bolivia** (Cochabamba, La Paz, Oruro, Potosí, Tarija). **Chile** (Tarapacá). **Peru** (Arequipa, Puno, Tacna).
334. *B. integrifolia* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba, La Paz, Santa Cruz).
335. *B. kessleri* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba).
336. *B. lapidosa* Deble & A.S.Oliveira. **Bolivia** (Chuquisaca, Santa Cruz).
337. *B. longipedicellata* (Joch.Müll.) G.Heiden. **Bolivia** (La Paz). **Peru** (Puno).
338. *B. neoaustralis* G.Heiden. **Bolivia** (Chuquisaca, Cochabamba, Potosí).
339. *B. neorupestris* Deble & A.S.Oliveira. **Argentina** (Catamarca, Jujuy, Salta, Tucumán).
340. *B. odorata* Kunth. **Colombia** (Nariño).
341. *B. papillosa* Rusby. **Bolivia** (Chuquisaca, Cochabamba, La Paz, Potosí).
342. *B. procumbens* Hieron. **Peru** (Cajamarca, La Libertad).
343. *B. santelicensis* Phil. **Argentina** (Mendoza, San Juan). **Chile** (Arica y Parinacota).
344. *B. tola* Phil. **Argentina** (Catamarca, Jujuy, La Rioja, Mendoza, Salta, San Juan, Tucumán). **Bolivia** (Chuquisaca, Oruro, Potosí, Tarija). **Chile** (Atacama, Tarapacá).
345. *B. viscosissima* (Kuntze) G.Heiden. **Argentina** (Salta). **Bolivia** (Potosí). **Chile** (Antofagasta).

346. *B. yungensis* (Joch.Müll.) G.Heiden. **Bolivia** (Cochabamba, La Paz).

VII.X. *Baccharis* sect. *Baccharis*: 24 species, most from North America and the Caribbean. Species in the section show a wide array of variation, from broom-like shrubs with leaves reduced to scales to leafy treelets.

347. *B. angustifolia* Michx. **Bahamas. USA** (Alabama, Massachusetts, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina).

348. *B. angustior* (DC.) Britton ex Malag. **Cuba**.

349. *B. buxifolia* (Lam.) DC. **Colombia** (Nariño). **Ecuador** (Azuay, Bolívar, Cañar, Carchi, Chimborazo, Cotopaxi, Imbabura, Loja, Morona-Santiago, Napo, Pichincha, Tungurahua). **Peru** (Ancash, Ayacucho, Apurímac, Cajamarca, Cusco, Huánuco, Junín, La Libertad, Lima, San Martín).

350. *B. conferta* Kunth. **Mexico** (Chiapas, Durango, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Oaxaca, Puebla, Querétaro, San Luis Potosí, Tlaxcala, Veracruz).

351. *B. confertoides* G.L.Nesom. **El Salvador. Guatemala. Honduras. Mexico** (Chiapas).

352. *B. dioica* Vahl. **Antigua and Barbuda. Bahamas. Cayman Islands. Cuba. Dominican Republic. Haiti. Jamaica. México** (Campeche, Quintana Roo, Yucatán). **Montserrat. Puerto Rico. United States Virgin Islands. USA** (Florida).

353. *B. emoryi* A.Gray. **Mexico** (Baja California, Sonora). **USA** (Arizona, California, Nevada, Utah).

354. *B. glandulifera* G.L.Nesom. **Guatemala. Mexico** (Chiapas, Oaxaca).

355. *B. glomeruliflora* Pers. **Bahamas. Bermuda. Cuba. USA** (Alabama, Massachusetts, Florida, Georgia, Mississippi, North Carolina, South Carolina).

356. *B. halimifolia* L. **Bahamas. Canada** (Nova Scotia). **Mexico** (Nuevo León, San Luis Potosí, Tamaulipas, Veracruz). **USA** (Alabama, Arkansas, Connecticut, Delaware, Florida, Georgia, Louisiana, Massachusetts, Maryland, Mississippi, North Carolina, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia). **Introduced in Australia** (*New South Wales, Queensland, Victoria, Western Australia*). **Belgium. France. Georgia. Italy. Netherlands. New Zealand. Spain. United Kingdom** (*England, Scotland*).

357. *B. heterophylla* Kunth. **Guatemala. Mexico** (Aguascalientes, Chiapas, Chihuahua, Colima, Durango, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Nuevo León, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tamaulipas, Tlaxcala, Veracruz, Zacatecas).

358. *B. kurtziana* Ariza. **Argentina** (La Rioja, Salta, San Juan).

359. *B. lancifolia* DC. **Mexico** (Hidalgo, Queretaro, Veracruz).

360. *B. mornicola* (Urb.) G.Heiden. **Dominican Republic. Haiti.**

361. *B. myrsinites* (Lam.) Pers. **Dominican Republic. Haiti. Puerto Rico.**

362. *B. neglecta* Britton. **Mexico** (Chihuahua, Coahuila, Durango, Nuevo León, San Luis Potosí, Sonora, Tamaulipas, Zacatecas). **USA** (Texas).
363. *B. nesomiana* Rzed. & Zamudio. **Mexico** (Tamaulipas).
364. *B. notoserghila* Griseb. **Argentina** (Buenos Aires, Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Santiago del Estero, Santa Fe). **Brazil** (Mato Grosso do Sul, Rio Grande do Sul). **Paraguay** (Caaguazú, Central, Cordillera, Presidente Hayes). **Uruguay** (Canelones, Flores, Florida, Maldonado, Montevideo, Paysandú, Río Negro, Salto, San José, Soriano, Tacuarembó).
365. *B. pilularis* DC. **Mexico** (Baja California). **USA** (California, New Mexico, Oregon).
366. *B. salicina* Torr. & A.Gray. **Mexico** (Baja California, Chihuahua, Coahuila, Durango, Nuevo León, Sonora, Tamaulipas). **USA** (Arizona, California, Colorado, Kansas, Nevada, New Mexico, Oklahoma, Texas, Utah).
367. *B. sarothroides* A.Gray. **Mexico** (Baja California, Baja California Sur, Chihuahua, Sinaloa, Sonora). **USA** (Arizona, California, New Mexico, Texas).
368. *B. scoparia* (L.) Sw. **Cuba**. **Jamaica**.
369. *B. scoparioides* Griseb. **Cuba**.
370. *B. sergiloides* A.Gray. **Mexico** (Baja California, Baja California Sur, Sonora). **USA** (Arizona, California, Nevada, Utah).
371. *B. shaferi* Britton. **Cuba**.
372. *B. tucumanensis* Hook. & Arn. **Argentina** (Catamarca, Córdoba, Jujuy, La Rioja, Salta, San Luis, Tucumán). **Bolivia** (Tarija).

VII.XI. *Baccharis* sect. *Andina* G.Heiden: 15 species of shrubs and treelets mostly from subpáramo and páramos of the northern Andes, from Venezuela to Ecuador.

373. *B. angelica* Benoist. **Ecuador** (Carchi).
374. *B. balnearia* Benoist. **Ecuador** (Bolívar, Chañar, Cotopaxi, Loja, Morona-Santiago).
375. *B. boyacensis* Cuatrec. **Colombia** (Boyacá, Cundinamarca).
376. *B. cochensis* Hieron. **Colombia** (Nariño).
377. *B. emarginata* (Ruiz & Pav.) Pers. **Peru** (Amazonas, Ancash, Ayacucho, Cajamarca, Huánuco, Junín, Lambayeque, Piura).
378. *B. grandicapitulata* Hieron. **Peru** (Amazonas, Ayacucho, Ancash, Cajamarca, Huánuco, Piura).
379. *B. lehmannii* Klatt. **Colombia** (Antioquia, Cauca, Cundinamarca, Meta, Nariño, Tolima).
380. *B. lloensis* Hieron. **Colombia** (Arauca, Boyacá, Caldas, Cauca, Cesar, Chocó, Cundinamarca, La Guajira, Huila, Meta, Nariño, Putumayo, Tolima). **Ecuador** (Azuay, Bolívar, Carchi, Chañar, Chimborazo, Cotopaxi, Imbabura, Loja, Morona-Santiago, Napo, Pichincha, Tungurahua).
381. *B. pachycephala* Hieron. **Peru** (Cajamarca).
382. *B. paramicola* Cuatrec. **Colombia** (Caldas, Cauca, Tolima).



383. *B. sinuata* Kunth. **Ecuador** (Azuay, Chañar, Loja, Orellana, Zamora-Chinchipec). **Peru** (Amazonas, Cajamarca, Piura).
384. *B. teindalensis* Kunth. **Colombia** (Cauca, Cundinamarca, Nariño). **Ecuador** (Azuay, Cañar, Carchi, Cotopaxi, Imbabura, Morona-Santiago, Napo, Pichincha).
385. *B. tetraica* G.Heiden. **Colombia** (Boyacá, Cundinamarca, Norte de Santander, Santander). **Venezuela** (Mérida, Táchira, Trujillo).
386. *B. tricuneata* (L.f.) Pers. **Colombia** (Antioquia, Arauca, Boyacá, Caldas, Cundinamarca, Magdalena, Meta, Norte de Santander, Quindío, Risaralda, Santander, Tolima, Valle de Cauca). **Venezuela** (Mérida, Táchira, Trujillo).

VII.XII. *Baccharis* sect. *Nitidae* Cuatrec.: Four species, inhabiting the edges of tropical rainforests, in the Atlantic Rainforest of Brazil or in the Yungas from the northern Andes.

387. *B. dentata* (Vell.) G.M.Barroso. **Argentina** (Misiones). **Brazil** (Espírito Santo, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Amambay, Guairá).
388. *B. malmei* Joch.Müll. **Brazil** (Bahia, Distrito Federal, Espírito Santo, Goiás, Minas Gerais, Paraná, Pernambuco, Rio de Janeiro, Santa Catarina, São Paulo).
389. *B. nitida* (Ruiz & Pav.) Pers. **Argentina** (Salta). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Santa Cruz, Tarija). **Colombia** (Antioquia, Bolívar, Boyacá, Caldas, Caquetá, Cauca, Cesar, Chocó, Cundinamarca, La Guajira, Huila, Magdalena, Meta, Nariño, Norte de Santander, Putumayo, Quindío, Risaralda, Santander, Tolima, Valle de Cauca). **Ecuador** (Bolívar, Carchi, Chimborazo, Cotopaxi, Loja, Napo, Pastaza, Pichincha, Tungurahua). **Guyana**. **Peru** (Amazonas, Ayacucho, Cajamarca, Cuzco, Huánuco, Junín, La Libertad, Lambayeque, Pasco, Puno, San Martín, Ucayali). **Venezuela** (Aragua, Distrito Federal, Lara, Mérida, Miranda, Táchira, Trujillo).
390. *B. singularis* (Vell.) G.M.Barroso. **Brazil** (Bahia, Espírito Santo, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo).

VII.XIII. *Baccharis* sect. *Cylindricae* Heering: 24 species from South America, the highest diversity in the grasslands and savannas from Argentina, Brazil, and Uruguay.

391. *B. argentina* Heering. **Argentina** (Catamarca, La Rioja, Salta).
392. *B. brevifolia* DC. **Brazil** (Bahia, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Uruguay** (Treinta y Tres).
393. *B. chilco* Kunth. **Bolivia** (Beni, La Paz, Santa Cruz). **Brazil** (Mato Grosso). **Colombia** (Boyacá, Caldas, Caquetá, Cauca, Cundinamarca, Huila, Meta, Nariño, Tolima, Valle de Cauca). **Ecuador** (Chimborazo, Imbabura, Loja, Pichincha, Zamora-Chinchipec). **Paraguay** (Presidente Hayes). **Peru** (Amazonas, Ancash, Cajamarca, Cusco, Huánuco, Junín, Puno, San Martín).

394. *B. cognata* DC. **Argentina** (Corrientes, Misiones). **Brazil** (Bahia, Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Amambay, Caaguazú, Caazapá, Central, Concepción, Cordillera, Guairá, Misiones, Paraguari). **Uruguay** (Tacuarembó, Treinta y Tres).
395. *B. cordobensis* Heering. **Argentina** (Córdoba).
396. *B. flabellata* Hook. & Arn. **Argentina** (Córdoba, La Pampa, La Rioja, Santiago del Estero, San Juan, San Luis).
397. *B. funkiae* Bonif. et al. **Uruguay** (Treinta y Tres).
398. *B. gracillima* Heering & Dusén. **Brazil** (Paraná).
399. *B. humilis* Sch.Bip. ex Baker. **Brazil** (Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, São Paulo).
400. *B. inexpectata* Deble & A.S.Oliveira. **Brazil** (Rio Grande do Sul).
401. *B. linearifolia* (Lam.) Pers. **Argentina** (Buenos Aires, Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Jujuy, La Pampa, La Rioja, Mendoza, Misiones, Río Negro, Salta, Santa Fe, San Juan, San Luis). **Brazil** (Amazonas, Bahia, Distrito Federal, Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Sul, Rondônia, Roraima, Santa Catarina, São Paulo, Tocantins). **Guyana**. **Paraguay** (Alto Paraná, Amambay, Caaguazú, Caazapá, Canindeyú, Central, Cordillera, Guairá, Paraguari, Presidente Hayes, San Pedro). **Suriname**. **Uruguay** (Canelones, Colonia, Florida, Maldonado, Montevideo, Paysandú, Río Negro, Rivera, Rocha, Tacuarembó, Treinta y Tres). **Venezuela** (Bolívar).
402. *B. maritima* Baker. **Brazil** (Rio Grande do Sul, Santa Catarina). **Uruguay** (Maldonado, Montevideo, Rocha, San José).
403. *B. microdonta* DC. **Argentina** (Catamarca, Corrientes, Jujuy, Misiones, Salta, Tucumán). **Bolivia** (Chuquisaca, Cochabamba, Santa Cruz, Tarija). **Brazil** (Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Cordillera). **Uruguay** (Canelones, Florida, Lavalleja, Maldonado, Montevideo, Rocha, Salto).
404. *B. multifolia* A.S.Oliveira & al. **Brazil** (Rio Grande do Sul).
405. *B. pampeana* A.S.Oliveira & al. **Brazil** (Rio Grande do Sul).
406. *B. pedersenii* Cabrera. **Argentina** (Corrientes, Entre Ríos, Santa Fe). **Brazil** (Rio Grande do Sul). **Paraguay** (Cordillera, Ñeembucú). **Uruguay** (Colonia).
407. *B. pentodonta* Malme. **Brazil** (Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caaguazú, Guairá).
408. *B. petraea* Heering. **Argentina** (Misiones). **Brazil** (Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Central, Cordillera, Paraguari). **Uruguay** (Flores, Florida).
409. *B. polycephala* Wedd. **Argentina** (Jujuy, Salta). **Bolivia** (Chuquisaca, Cochabamba, La Paz, Potosí, Santa Cruz, Tarija). **Peru** (Puno).
410. *B. saltensis* Baker. **Uruguay** (Salto).
411. *B. santiagensis* Heering. **Chile** (Metropolitana).

412. *B. sessiliflora* Vahl. **Argentina** (Corrientes, Misiones, Salta). **Bolivia** (Santa Cruz). **Brazil** (Bahia, Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco, Rio Grande do Sul, Santa Catarina, São Paulo, Sergipe). **Paraguay** (Alto Paraná, Alto Paraguay, Amambay, Caaguazú, Canindeyú, Central, Concepción, Cordillera, Presidente Hayes, San Pedro). **Uruguay** (Maldonado, Montevideo, Paysandú, Rivera).
413. *B. subdentata* DC. **Brazil** (Bahia, Distrito Federal, Goiás, Mato Grosso, Mato Grosso do Sul, Maranhão, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, São Paulo). **Paraguay** (Caaguazú, Caazapá).
414. *B. subopposita* DC. **Brazil** (Rio Grande do Sul). **Paraguay** (Caaguazú, Caazapá, Canindeyú, Cordillera, Guairá, Misiones).
415. *B. variabiliflora* Deble & A.S.Oliveira. **Brazil** (Minas Gerais).
416. *B. vernicosa* Hook. & Arn. **Argentina** (Misiones). **Brazil** (Rio Grande do Sul). **Uruguay** (Artigas, Paysandú, Rivera, Salto).

**Sections of unknown relationships within *Baccharis* subgen. *Baccharis*.**

VII.XIV. *Baccharis* sect. *Discolores* DC.: *Baccharis phyllicoides* is the only species and occurs along the Andes from Ecuador to Bolivia.

417. *B. phyllicoides* Kunth. **Bolivia** (Amazonas, Ancash, Ayacucho, Cajamarca, Cusco, Huánuco, Junín, La Libertad, Lambayeque, Piura). **Peru** (La Paz).

VII.XV. *Baccharis* sect. *Divaricatae* Giuliano: *Baccharis divaricata* is the only species and occurs in coastal dunes of the Argentinean Patagonia.

418. *B. divaricata* Hauman. **Argentina** (Buenos Aires, Chubut, Río Negro).

VII.XVI. *Baccharis* sect. *Frenguellianae* Giuliano: *Baccharis frenguelli* is the only species and occurs in riverine vegetation in northeastern Argentina and Paraguay.

419. *B. frenguelli* Cabrera. **Argentina** (Chaco, Corrientes, Entre Ríos, Santa Fe). **Paraguay** (Central, Cordillera, Paraguari).

VII.XVII. *Baccharis* sect. *Pedicellatae* Heering: Seven species from Argentina and Chile.

420. *B. austropedicellata* (F.H.Hellw.) G.Heiden. **Argentina** (Neuquén). **Chile** (Bío Bío, Maule, Ñuble, O'Higgins).
421. *B. linearis* (Ruiz & Pav.) Pers. **Argentina** (Chubut, Mendoza, Neuquén, Río Negro, San Juan). **Chile** (Araucanía, Atacama, Bío bío, Coquimbo, Los Lagos, Los Ríos, Maule, Metropolitana, Ñuble, O'Higgins, Valparaíso).
422. *B. lycioides* Remy. **Argentina** (Neuquén). **Chile** (Araucanía, Bío Bío, Los Lagos, Los Ríos).
423. *B. obovata* Hook. & Arn. **Argentina** (Chubut, Neuquén, Río Negro, Santa Cruz). **Chile** (Aysén, Araucanía, Bío Bío, Los Lagos, Los Ríos, Maule, Ñuble, O'Higgins, Valparaíso).
424. *B. ocellata* Phil. **Argentina** (Neuquén). **Chile** (Bío Bío, Maule, Ñuble, O'Higgins).

425. *B. poeppigiana* DC. **Argentina** (Neuquén). **Chile** (Coquimbo, Metropolitana, Valparaíso).
426. *B. pycnocephala* (F.H.Hellw.) G.Heiden. **Argentina** (Chubut, Neuquén, Río Negro). **Chile** (Araucanía, Bío Bío, Los Lagos, Los Ríos, Maule, Ñuble, Valparaíso).

**Species of unknown relationships within *Baccharis* subgen. *Baccharis*.**

427. *B. alaternoides* Kunth. **Peru** (Amazonas, Áncash, Cajamarca, Cuzco, La Libertad, Lima).
428. *B. chachapoyasensis* Cuatrec. **Peru** (Amazonas, Cajamarca).
429. *B. dependens* (Ruiz & Pav.) Pers. **Peru** (Huánuco).
430. *B. erectifolia* Steyererm. **Venezuela** (Anzoátegui, Sucre, Trujillo).
431. *B. glomerata* Joch.Müll. **Bolivia** (La Paz).
432. *B. hieronymi* Heering. **Ecuador** (Azuay, Cañar, Morona-Santiago).
433. *B. humifusa* Kunth. **Ecuador** (Azuay, Bolívar, Chañar, Chimborazo, Cotopaxi, Imbabura, Napo, Pastaza, Pichincha, Tungurahua).
434. *B. itapircensis* A.S.Oliveira & Deble. **Brazil** (Paraná).
435. *B. paucicostata* Joch.Müll. & Giuliano. **Argentina** (Mendoza, San Juan).
436. *B. pseudoalpestris* L.Teodoro. **Brazil** (Minas Gerais).
437. *B. pumila* Joch.Müll. **Bolivia** (Tarija).
438. *B. samensis* Joch.Müll. **Argentina** (Salta). **Bolivia** (Tarija).
439. *B. scabra* (Ruiz & Pav.) Pers. **Peru** (Junín).
440. *B. schomburgkii* Baker. **Brazil** (Roraima). **Guyana**. **Venezuela** (Amazonas, Bolívar, Táchira, Trujillo).
441. *B. tenuicapitulata* Joch.Müll. **Ecuador** (Azuay, Chimborazo, Chañar, Loja).
442. *B. tomentosa* (Ruiz & Pav.) Pers. **Peru** (Ancash).

## 6 Confirmed and Putative Hybrid Species: Who Are They?

Putative hybrid species and subspecies were formally described 38 times for *Baccharis* (Malagarriga 1949, 1954; Hellwig 1990). They are presented here ordered alphabetically. Likely parental species are within brackets, followed by geographic distribution and, when pertinent, comments on current taxonomic status. Taxonomic status of most of the putative hybrids proposed based on morphology and distribution of likely sympatric parent species remains to be confirmed or rejected by means of further experimental crosses and in situ population genetic studies.

- ×1. *B. × alboffii* F.H.Hellw. (*B. patagonica* × *B. zoellneri*). **Chile** (Los Lagos).
- ×2. *B. × antucensis* F.H.Hellw. (*B. umbelliformis* × *B. neaei*). **Chile** (Bío Bío).
- ×3. *B. × arcuata* F.H.Hellw. (*B. magellanica* × *B. obovata*). **Chile** (Aysén).
- ×4. *B. × arcuata* F.H.Hellw. nothosubsp. *arcuata*. (*B. magellanica* × *B. obovata*). **Chile** (Aysén).



- ×5. *B.* × *arcuata* F.H.Hellw. nothosubsp. *chamaearcuata*. (*B. magellanica* × *B. obovata* × *B. umbelliformis*). **Argentina** (Neuquén). **Chile** (Araucanía).
- ×6. *B.* × *australis* F.H.Hellw. (*B. magellanica* × *B. zoellneri*). **Chile** (Los Lagos, Magallanes y Antártica). **Falkland/Malvinas Islands**.
- ×7. *B.* × *australis* F.H.Hellw. nothosubsp. *australis*. (*B. magellanica* × *B. zoellneri*). **Chile** (Los Lagos, Magallanes y Antártica). **Falkland Islands**.
- ×8. *B.* × *australis* F.H.Hellw. nothosubsp. *minutifolia*. (*B. magellanica* × *B. minor*). **Chile**. (Araucanía).
- ×9. *B.* × *caramavidensis* F.H.Hellw. (*B. minor* × *B. obovata*). **Chile** (Bío Bío).
- ×10. *B.* × *caramavidensis* F.H.Hellw. nothosubsp. *caramavidensis*. (*B. minor* × *B. obovata*). **Chile** (Bío Bío).
- ×11. *B.* × *caramavidensis* F.H.Hellw. nothosubsp. *maior*. (*B. zoellneri* × *B. obovata*). **Chile** (Los Lagos).
- ×12. *B.* × *chillanensis* F.H.Hellw. (*B. magellanica* × *B. ocellata*). **Chile** (Bío Bío).
- ×13. *B.* × *chillanensis* F.H.Hellw. nothosubsp. *chillanensis*. (*B. magellanica* × *B. ocellata*). **Chile** (Bío Bío).
- ×14. *B.* × *chillanensis* F.H.Hellw. nothosubsp. *procumbens*. (*B. magellanica* × *B. austropedicellata*). **Chile** (Bío Bío, Maule).
- ×15. *B.* × *concava* (Ruiz & Pav.) Pers. (*B. rhomboidalis* × *B. obovata*). **Chile** (Bío Bío). =Currently accepted as *B. concava*.
- ×16. *B.* × *concavoides* F.H.Hellw. (*B. rhomboidalis* × *B. elaeoides* × *B. obovata*). **Chile** (Los Lagos).
- ×17. *B.* × *crenatolycioides* F.H.Hellw. (*B. obovata* × *B. lycioides*). **Chile** (Bío Bío).
- ×18. *B.* × *demissa* F.H.Hellw. (*B. magellanica* × *B. mylodontis*). **Chile** (Magallanes y Antártica).
- ×19. *B.* × *expectata* F.H.Hellw. (*B. obovata* × *B. patagonica*). **Chile** (Los Lagos).
- ×20. *B.* × *expectata* F.H.Hellw. nothosubsp. *expectata*. (*B. obovata* × *B. patagonica*). **Chile** (Los Lagos).
- ×21. *B.* × *expectata* F.H.Hellw. nothosubsp. *crenatopalenae*. (*B. palenae* × *B. patagonica*). **Chile** (Los Lagos).
- ×22. *B.* × *fraudulenta* L.Teodoro. (*B. subopposita* × *B. subdentata*). **Brazil** (São Paulo). =Currently accepted as *B. linearifolia*.
- ×23. *B.* × *heeringiana* L.Teodoro (*B. junciformis* × *B. milleflora*). **Brazil** (São Paulo). =Currently accepted as *B. sagittalis*.
- ×24. *B.* × *hoehneana* L.Teodoro. (*B. linearifolia* × *B. cognata*). **Brazil** (São Paulo). =Currently accepted as *B. linearifolia*.
- ×25. *B.* × *intermedia* DC. (*B. macraei* × *B. linearis*). **Chile** (Coquimbo, O'Higgins, Valparaíso). Hybrid status supported by morphological and chemical data (Faini et al. 1991).
- ×26. *B.* × *paulopolitana* L.Teodoro & W.Hoehne. (*B. dracunculifolia* × *B. linearifolia*). **Brazil** (São Paulo). Currently accepted as *B. linearifolia*.
- ×27. *B.* × *pseudolycioides* F.H.Hellw. (*B. neaei* × *B. lycioides*). **Chile** (Bío Bío, Araucanía).

- ×28. *B. × pseudoneaei* F.H.Hellw. (*B. neaei* × *B. magellanica*). **Chile**. (Maule).
- ×29. *B. × pseudopalenae* F.H.Hellw. (*B. elaeoides* × *B. palenae*). **Chile** (Los Lagos).
- ×30. *B. × pseudopilcensis* F.H.Hellw. (*B. pilcensis* × *B. neaei*). **Chile** (Bío Bío).
- ×31. *B. × septentrionalis* F.H.Hellw. (*B. macraei* × *B. vernalis*). **Chile** (Coquimbo, Valparaíso).
- ×32. *B. × spegazzinii* F.H.Hellw. (*B. magellanica* × *B. patagonica*). **Chile** (Magallanes y Antártica).
- ×33. *B. × subaequalis* F.H.Hellw. (*B. elaeoides* × *B. rhomboidalis*). **Chile** (Los Lagos).
- ×34. *B. × tarapacana* F.H.Hellw. (*B. viscosissima* × *B. santelici* or *B. chrysophylla*). **Chile** (Tarapacá).
- ×35. *B. × volckmannii* Phil. (*B. linearis* × *B. neaei*). **Chile** (Coquimbo, Valparaíso, Metropolitana).
- ×36. *B. × volckmannii* Phil. nothosubsp. *volckmannii*. (*B. linearis* × *B. neaei*). **Chile** (Coquimbo, Metropolitana, Valparaíso).
- ×37. *B. × volckmannii* Phil. nothosubsp. *hybrida*. (*B. pycnocephala* × *B. neaei*). **Chile** (Bío Bío, Maule).
- ×38. *B. × wilsoniana* L.Teodoro. (*B. linearifolia* × *B. pentodonta*). **Brazil** (São Paulo). Currently accepted as *B. microdonta*.

## 7 Distribution of *Baccharis* by Sovereign Countries or Dependent Territories: How Many Species Are Out There?

A checklist of recorded species and endemics for the 35 American sovereign countries and the 24 dependent territories from the Americas is presented in the following section.

### Sovereign Countries

**Argentina.** 110 species, 25 of them endemic\*: *B. acaulis*, *B. albida*\*, *B. aliena*, *B. alpina*, *B. anomala*, *B. arenaria*, *B. argentina*\*, *B. arguta*, *B. artemisioides*, *B. articulata*, *B. austropedicellata*, *B. boliviensis*, *B. breviseta*, *B. cabreræ*\*, *B. calliprinos*\*, *B. capitalensis*, *B. caprariifolia*, *B. chubutensis*\*, *B. clavata*, *B. cognata*, *B. cordobensis*\*, *B. coridifolia*, *B. darwinii*, *B. debilis*, *B. dentata*, *B. divaricata*\*, *B. dracunculifolia*, *B. effusa*, *B. elaeoides*, *B. famatinensis*\*, *B. fimbriata*, *B. flabellata*\*, *B. frenguelli*, *B. genistifolia*, *B. gilliesii*\*, *B. glutinosa*, *B. gnaphalioides*, *B. grisebachii*, *B. helichrysoides*, *B. incarum*, *B. juncea*, *B. kurtziana*\*, *B. latifolia*, *B. lilloi*, *B. linearifolia*, *B. linearis*, *B. lorentzii*\*, *B. lycioides*, *B. magellanica*, *B. megapotamica*, *B. melanopotamica*\*, *B. microcephala*, *B. microdonta*, *B. montana*, *B. multiflosculosa*, *B. neaei*, *B. neorupestris*\*, *B. niederleinii*\*, *B. nitida*, *B. nivalis*, *B. notosergila*, *B. oblongifolia*, *B. obovata*, *B. ocellata*, *B. ochracea*, *B. oxydonta*, *B. patagonica*, *B. paucicostata*\*, *B. peder-*

*senii*, *B. penningtonii*, *B. perulata*\*, *B. petraea*, *B. petrophila*\*, *B. phyteuma*\*, *B. phyteumoides*, *B. pingraea*, *B. poeppigiana*, *B. polifolia*, *B. polycephala*, *B. polygama*\*, *B. potrerillana*\*, *B. punctulata*, *B. pycnocephala*, *B. quitensis*, *B. racemosa*, *B. retamoides*\*, *B. rodriguezii*\*, *B. sagittalis*, *B. salicifolia*, *B. samensis*, *B. santelicensis*, *B. sculpta*, *B. semiserrata*, *B. sessiliflora*, *B. spartioides*, *B. spicata*, *B. stenophylla*, *B. tenella*\*, *B. thymifolia*\*, *B. tola*, *B. triangularis*, *B. tridentata*, *B. trimera*, *B. trinervis*, *B. tucumanensis*, *B. ulicina*, *B. umbelliformis*, *B. vernicosa*, *B. viscosissima*, *B. vulneraria*.

**Antigua and Barbuda.** 1 species: *B. dioica*.

**Bahamas.** 4 species. *B. angustifolia*, *B. dioica*, *B. glomeruliflora*, *B. halimifolia*.

**Barbados.** 0 species native, 1 cultivated: *B. halimifolia*.

**Belize.** 1 species: *B. trinervis*.

**Bolivia.** 76 species, 22 endemic\*: *B. acaulis*, *B. alpina*, *B. aphylla*, *B. arguta*, *B. articulata*, *B. beckii*\*, *B. bicolor*\*, *B. boliviensis*, *B. buchtienii*, *B. caespitosa*, *B. cana*\*, *B. capitalensis*, *B. chaparensis*\*, *B. chilco*, *B. chrysophylla*, *B. clavata*, *B. coridifolia*, *B. darwinii*, *B. debilis*, *B. densiflora*\*, *B. dracunculifolia*, *B. effusa*, *B. fimbriata*, *B. genistelloides*, *B. glomerata*\*, *B. glutinosa*, *B. gnidiifolia*, *B. grisebachii*, *B. incarum*, *B. integrifolia*\*, *B. jelskii*, *B. kessleri*\*, *B. lapidosa*\*, *B. latifolia*, *B. lewisii*\*, *B. lilloi*, *B. longipedicellata*, *B. mandonii*\*, *B. microdonta*, *B. multiflosculosa*, *B. neoaustralis*\*, *B. nitida*, *B. oblongifolia*, *B. orbignyana*, *B. papillosa*\*, *B. pedunculata*, *B. pentlandii*, *B. phyllicoides*, *B. platypoda*, *B. polifolia*, *B. polycephala*, *B. potosiensis*\*, *B. pumila*\*, *B. punctulata*, *B. quitensis*, *B. sagittalis*, *B. salicifolia*, *B. saliens*, *B. samensis*, *B. sculpta*, *B. serranoi*\*, *B. sessiliflora*, *B. solomonii*\*, *B. subalata*, *B. tola*, *B. torricoi*\*, *B. tridentata*, *B. trimera*, *B. trinervis*, *B. tucumanensis*, *B. ulicina*, *B. Vargasii*\*, *B. viscosissima*, *B. woodii*\*, *B. yungensis*\*, *B. zongoensis*\*.

**Brazil.** 185 species, 114 of them endemic\*: *B. albilanosa*\*, *B. aliena*, *B. alleluia*\*, *B. alpestris*\*, *B. altimontana*\*, *B. angusticeps*\*, *B. anomala*, *B. aphylla*, *B. apicifoliola*\*, *B. aracatubaensis*\*, *B. arenaria*, *B. articulata*, *B. axillaris*\*, *B. bifrons*\*, *B. brevifolia*, *B. breviseta*, *B. burchellii*\*, *B. calvescens*\*, *B. camposportoana*\*, *B. caprariifolia*, *B. chilco*, *B. chionolaenoides*\*, *B. ciliata*\*, *B. cinerea*\*, *B. claussenii*\*, *B. cognata*, *B. concinna*\*, *B. conyzoides*\*, *B. coridifolia*, *B. coronata*\*, *B. crassipappa*\*, *B. cultrata*, *B. curitybensis*\*, *B. deblei*\*, *B. decurrens*\*, *B. deltoidea*\*, *B. densa*, *B. dentata*, *B. dichotoma*\*, *B. dracunculifolia*, *B. dubia*\*, *B. dunensis*\*, *B. elliptica*\*, *B. erigeroides*, *B. erioclada*, *B. flexuosiramosa*\*, *B. floccosa*\*, *B. friburgensis*\*, *B. gaucha*\*, *B. gibertii*, *B. glaziovii*, *B. glutinosa*, *B. gnaphalioides*, *B. gracilis*, *B. gracillima*\*, *B. grandimucronata*\*, *B. helichrysoides*, *B. hemiptera*\*, *B. hirta*, *B. humilis*\*, *B. hyemalis*\*, *B. hypericifolia*\*, *B. illinita*, *B. illinitoides*, *B. imbricata*\*, *B. incisa*\*, *B. inexpectata*\*, *B. intermixta*\*, *B. itapirocentensis*\*, *B. itatiaiae*\*, *B. jocheniana*, *B. junciformis*, *B. lateralis*, *B. leptospermoides*\*, *B. leucocephala*\*, *B. leucopappa*\*, *B. ligustrina*\*, *B. linearifolia*, *B. longiattenuata*, *B. lychnophora*\*, *B. lymanii*\*, *B. macrophylla*\*, *B. magnifica*\*, *B. malmei*\*, *B. maritima*, *B. maxima*\*, *B. megapotamica*, *B. mesoneura*\*, *B. microcephala*, *B. microdonta*, *B. milleflora*\*, *B. minutiflora*\*,

*B. montana*, *B. multifolia*\*, *B. myricifolia*\*, *B. myriocephala*, *B. napaea*\*, *B. nebularis*\*, *B. notoserghila*, *B. nummularia*\*, *B. obdelata*\*, *B. oblongifolia*, *B. ochracea*, *B. opuntioides*\*, *B. orbiculata*\*, *B. orbignyana*, *B. oreophila*\*, *B. organensis*\*, *B. oxyodonta*, *B. palustris*, *B. pampeana*\*, *B. paranensis*\*, *B. parvidentata*\*, *B. patens*, *B. pauciflosculosa*\*, *B. pedersenii*, *B. penningtonii*, *B. pentaptera*\*, *B. pentodonta*, *B. perlata*\*, *B. petraea*, *B. phyllicifolia*\*, *B. phyteumoides*, *B. pingraea*, *B. platypoda*, *B. pluricapitulata*\*, *B. pohlii*\*, *B. polygona*\*, *B. polyphylla*\*, *B. pseudoalpestris*\*, *B. pseudomyriocephala*\*, *B. pseudovaccinioides*\*, *B. pseudovillosa*\*, *B. psiadioides*, *B. punctulata*, *B. quitensis*, *B. ramboi*\*, *B. ramosissima*\*, *B. regnellii*\*, *B. reticularia*\*, *B. reticularioides*\*, *B. retusa*, *B. riograndensis*, *B. rivularis*\*, *B. rufidula*\*, *B. sagittalis*, *B. salicifolia*, *B. salzmännii*\*, *B. scabrifolia*\*, *B. schomburgkii*, *B. schultzii*\*, *B. scopulorum*\*, *B. semiserrata*, *B. serrula*\*, *B. serrulata*\*, *B. sessiliflora*, *B. simplex*\*, *B. singularis*\*, *B. sphagnophila*\*, *B. sphenophylla*\*, *B. spicata*, *B. stylosa*\*, *B. subdentata*, *B. suberectifolia*\*, *B. subopposita*, *B. tarchonanthoides*\*, *B. triangularis*, *B. tridentata*, *B. trilobata*\*, *B. trimera*, *B. trinervis*, *B. trineura*\*, *B. truncata*\*, *B. uleana*\*, *B. umbellata*\*, *B. uncinella*\*, *B. urvilleana*\*, *B. variabiliflora*\*, *B. vernicosa*, *B. vincifolia*\*, *B. vismioides*\*, *B. vitis-idaea*, *B. vulneraria*, *B. wagenitzii*\*, *B. weirii*.

**Canada.** 1 species: *B. halimifolia*.

**Chile.** 48 species, 15 endemics\*: *B. acaulis*, *B. alnifolia*, *B. alpina*, *B. austropedunculata*, *B. boliviensis*, *B. chrysophylla*, *B. concava*\*, *B. cymosa*\*, *B. elaeoides*, *B. genistelloides*, *B. glutinosa*, *B. gnidiifolia*, *B. incarum*, *B. juncea*, *B. linearis*, *B. lycioides*, *B. macraei*\*, *B. magellanica*, *B. minor*\*, *B. mylodontis*\*, *B. neaei*, *B. neotruncata*\*, *B. nivalis*, *B. obovata*, *B. ocellata*, *B. palenae*\*, *B. paniculata*\*, *B. patagonica*, *B. pilcensis*\*, *B. pingraea*, *B. poeppigiana*, *B. pycnantha*\*, *B. pycnocephala*, *B. racemosa*, *B. rhomboidalis*\*, *B. sagittalis*, *B. salicifolia*, *B. santelicensis*, *B. santiagensis*\*, *B. scandens*, *B. spartioides*, *B. sphaerocephala*\*, *B. taltalensis*\*, *B. tola*, *B. umbelliformis*, *B. vernalis*\*, *B. viscosissima*, *B. zoellneri*.

**Colombia.** 39 species, 15 endemic\*: *B. alpina*, *B. antioquiensis*\*, *B. bogotensis*\*, *B. boyacensis*\*, *B. breviseta*, *B. buddlejoides*, *B. buxifolia*, *B. caldasiana*\*, *B. chilco*, *B. cochensis*\*, *B. decussata*, *B. farallonensis*\*, *B. floribundoides*\*, *B. fraterna*\*, *B. genistelloides*, *B. grandiflora*, *B. jelskii*, *B. klattii*, *B. latifolia*, *B. lehmannii*\*, *B. lloensis*, *B. marceiifolia*, *B. mutisiana*, *B. nitida*, *B. oblongifolia*, *B. odorata*\*, *B. padifolia*, *B. paramicola*\*, *B. pedunculata*, *B. prunifolia*, *B. raulii*\*, *B. revoluta*\*, *B. rupicola*\*, *B. salicifolia*, *B. teindalensis*, *B. tetroica*, *B. tricuneata*, *B. trinervis*, *B. vacciniifolia*\*.

**Costa Rica.** 2 species: *B. pedunculata*, *B. trinervis*.

**Cuba.** 9 species, 6 endemic\*: *B. acutata*\*, *B. angustior*\*, *B. dioica*, *B. glomeruliflora*, *B. nipensis*\*, *B. orientalis*\*, *B. scoparia*, *B. scoparioides*\*, *B. shaferi*\*.

**Dominica.** 1 species: *B. pedunculata*.

**Dominican Republic.** 4 species: *B. dioica*, *B. haitiensis*, *B. mornicola*, *B. myrsinites*.

- Ecuador.** 38 species, 10 endemic\*: *B. alpina*, *B. angelica*\*, *B. arbutifolia*\*, *B. auriculigera*, *B. balnearia*\*, *B. buddlejoides*, *B. buxifolia*, *B. chilco*, *B. cutervensis*, *B. decussata*, *B. genistelloides*, *B. gnidiifolia*, *B. grandiflora*, *B. hambaten-sis*\*, *B. hieronymi*\*, *B. huairacajensis*\*, *B. humifusa*\*, *B. jelskii*, *B. klattii*, *B. latifolia*, *B. lloensis*, *B. marcetiifolia*, *B. mollis*\*, *B. nitida*, *B. oblongifolia*, *B. padifolia*, *B. pedunculata*, *B. quitensis*, *B. reticulata*, *B. sagittalis*, *B. salicifolia*, *B. sinuata*, *B. steetzii*\*, *B. subbimera*, *B. teindalensis*, *B. tenuicapitulata*\*, *B. trinervis*, *B. volubilis*.
- El Salvador.** 6 species: *B. confertoides*, *B. monoica*, *B. pedunculata*, *B. salicifolia*, *B. serrifolia*, *B. trinervis*.
- Grenada.** 0 species.
- Guatemala.** 8 species: *B. confertoides*, *B. glandulifera*, *B. heterophylla*, *B. mono-ica*, *B. pedunculata*, *B. salicifolia*, *B. serrifolia*, *B. trinervis*.
- Guyana.** 7 species: *B. densa*, *B. linearifolia*, *B. nitida*, *B. oblongifolia*, *B. schom-burgkii*, *B. trinervis*, *B. vitis-idaea*.
- Haiti.** 4 species: *B. dioica*, *B. haitiensis*, *B. mornicola*, *B. myrsinites*.
- Honduras.** 6 species: *B. confertoides*, *B. monoica*, *B. pedunculata*, *B. salicifolia*, *B. serrifolia*, *B. trinervis*.
- Jamaica.** 2 species: *B. dioica*, *B. scoparia*.
- Mexico.** 46 species, 22 endemic\*: *B. alamosana*\*, *B. bigelovii*, *B. brachyphylla*, *B. brevippappa*\*, *B. charucoensis*\*, *B. conferta*\*, *B. confertoides*, *B. crassicuneata*\*, *B. dioica*, *B. douglasii*, *B. emoryi*, *B. erosoricola*\*, *B. glandulifera*, *B. halimifolia*, *B. herbacea*\*, *B. heterophylla*, *B. horizontalis*\*, *B. lancifolia*, *B. macrocephala*\*, *B. mexicana*\*, *B. monoica*, *B. multiflora*\*, *B. neglecta*, *B. nesomiana*\*, *B. occidentalis*\*, *B. palmeri*\*, *B. pedunculata*, *B. pilularis*, *B. praetermissa*\*, *B. pteronioides*, *B. ramiflora*\*, *B. salicifolia*, *B. salicina*, *B. sarothroides*, *B. see-mannii*\*, *B. sergiloides*, *B. serrifolia*, *B. sordescens*\*, *B. sulcata*, *B. supplex*\*, *B. texana*, *B. thesioides*, *B. trinervis*, *B. wrightii*, *B. zamoranensis*\*, *B. zamudiorum*\*.
- Nicaragua.** 4 species: *B. monoica*, *B. pedunculata*, *B. serrifolia*, *B. trinervis*.
- Panama.** 2 species: *B. pedunculata*, *B. trinervis*.
- Paraguay.** 47 species, 2 endemic\*: *B. amambayensis*\*, *B. anomala*, *B. articulata*, *B. breviseta*, *B. caprariifolia*, *B. chilco*, *B. cognata*, *B. coridifolia*, *B. debilis*, *B. dentata*, *B. dracunculifolia*, *B. erigeroides*, *B. erioclada*, *B. frenguelli*, *B. glazio-vii*, *B. glutinosa*, *B. gracilis*, *B. helichrysoides*, *B. illinita*, *B. illinitoides*, *B. isa-belae*\*, *B. linearifolia*, *B. megapotamica*, *B. microcephala*, *B. microdonta*, *B. montana*, *B. myriocephala*, *B. notosergila*, *B. oxyodonta*, *B. pedersenii*, *B. pentodonta*, *B. petraea*, *B. phyteumoides*, *B. pingraea*, *B. punctulata*, *B. retusa*, *B. sagittalis*, *B. salicifolia*, *B. semiserrata*, *B. sessiliflora*, *B. spicata*, *B. subden-tata*, *B. subopposita*, *B. tridentata*, *B. trimera*, *B. trinervis*, *B. vulneraria*.
- Peru.** 61 species, 21 endemic\*: *B. acaulis*, *B. alaternoides*\*, *B. alnifolia*, *B. alpina*, *B. arguta*, *B. auriculigera*, *B. ayacuchensis*\*, *B. boliviensis*, *B. buchtienii*, *B. buxifolia*, *B. caespitosa*, *B. chachapoyasensis*\*, *B. chilco*, *B. clavata*, *B. corym-bosa*\*, *B. cutervensis*, *B. davidsonii*\*, *B. debilis*, *B. decussata*, *B. dependens*\*, *B.*



*emarginata\**, *B. genistelloides*, *B. glutinosa*, *B. gnidiifolia*, *B. grandicapitulata\**, *B. hutchisonii\**, *B. incarum*, *B. jelskii*, *B. johnwurdackiana\**, *B. latifolia*, *B. ledifolia\**, *B. libertadensis\**, *B. longipedicellata*, *B. multibracteata\**, *B. nitida*, *B. oblongifolia*, *B. pachycephala\**, *B. pedunculata*, *B. pentlandii*, *B. phyllicoides*, *B. platypoda*, *B. polycephala*, *B. procumbens\**, *B. quitensis*, *B. reticulata*, *B. sagittalis*, *B. salicifolia*, *B. saliens*, *B. scabra\**, *B. scandens*, *B. sinuata*, *B. spartea\**, *B. subalata*, *B. subbimera*, *B. tarmensis\**, *B. tomentosa\**, *B. trimera*, *B. trinervis*, *B. uniflora\**, *B. volubilis*, *B. woytkowskii\**.

**Saint Kitts and Nevis.** 1 species: *B. pedunculata*.

**Saint Lucia.** 1 species: *B. pedunculata*.

**Saint Vincent and the Grenadines.** 1 species: *B. pedunculata*.

**Suriname.** 1 species: *B. linearifolia*.

**Trinidad and Tobago.** 2 species: *B. nervosa*, *B. trinervis*.

**United States of America.** 23 species, 4 endemic\*: *B. angustifolia*, *B. bigelovii*, *B. brachyphylla*, *B. dioica*, *B. douglasii*, *B. emoryi*, *B. glabrata\**, *B. glomeruliflora*, *B. halimifolia*, *B. malibuensis\**, *B. neglecta*, *B. pilularis*, *B. plummerae\**, *B. pteronioides*, *B. salicifolia*, *B. salicina*, *B. sarothroides*, *B. sergiloides*, *B. sulcata*, *B. texana*, *B. thesioides*, *B. vanessae\**, *B. wrightii*.

**Uruguay.** 54 species, 5 endemic\*: *B. aliena*, *B. anomala*, *B. arenaria*, *B. artemisioides*, *B. articulata*, *B. brevifolia*, *B. breviseta*, *B. caprariifolia*, *B. cognata*, *B. coridifolia*, *B. crispata\**, *B. cultrata*, *B. darwinii*, *B. dracunculifolia*, *B. funkiae\**, *B. genistifolia*, *B. gibertii*, *B. glutinosa*, *B. gnaphalioides*, *B. hirta*, *B. jocheniana*, *B. juncea*, *B. junciformis*, *B. linearifolia*, *B. longiattenuata*, *B. maritima*, *B. megapotamica*, *B. microcephala*, *B. microdonta*, *B. notoserigila*, *B. ochracea*, *B. oxydonta*, *B. palustris*, *B. patens*, *B. pedersenii*, *B. penningtonii*, *B. petraea*, *B. phyteumoides*, *B. pingraea*, *B. psiadioides*, *B. punctulata*, *B. rectialata\**, *B. riograndensis*, *B. salicifolia*, *B. saltensis\**, *B. sessiliflora*, *B. spicata*, *B. stenophylla*, *B. subtropicalis\**, *B. tridentata*, *B. trimera*, *B. vernicosa*, *B. vulneraria*, *B. weirii*.

**Venezuela.** 19 species, 3 endemic\*: *B. debilis*, *B. decussata*, *B. densa*, *B. erectifolia\**, *B. latifolia*, *B. linearifolia*, *B. meridensis\**, *B. mutisiana*, *B. nitida*, *B. oblongifolia*, *B. pedunculata*, *B. prunifolia*, *B. salicifolia*, *B. schomburgkii*, *B. tetraica*, *B. tricuneata*, *B. trinervis*, *B. vitis-idaea*, *B. zumbadorensis\**.

### Dependent Territories

**Anguilla.** 0 species.

**Aruba.** 0 species.

**Bermuda.** 1 species: *B. glomeruliflora*.

**Bonaire.** 0 species.

**British Virgin Islands.** 0 species.

**Cayman Islands.** 1 species: *B. dioica*.

**Clipperton Island.** 0 species.

**Curaçao.** 0 species.

**Falkland/Malvinas Islands.** 2 species: *B. magellanica*, *B. zoellneri*.

**French Guiana.** 0 species.

**Greenland.** 0 species.

**Guadeloupe.** 1 species: *B. nervosa*.

**Martinique.** 2 species: *B. nervosa*, *B. pedunculata*.

**Montserrat.** 2 species: *B. dioica*, *B. pedunculata*.

**Navassa Island.** 0 species.

**Puerto Rico.** 2 species: *B. dioica*, *B. myrsinites*.

**Saba.** 1 species: *B. pedunculata*.

**Saint Barthélemy.** 0 species.

**Saint Martin.** 0 species.

**Saint Pierre and Miquelon.** 0 species.

**Sint Eustatius.** 0 species.

**Sint Maarten.** 0 species.

**South Georgia and the South Sandwich Islands.** 0 species.

**Turks and Caicos Islands.** 0 species.

**United States Virgin Islands.** 1 species: *B. dioica*.

### **Going Worldwide? List of Introduced Naturalized Adventitious Distributions Outside the Americas**

Records of established self-sustained populations of *Baccharis* species, historically recorded outside their native range but currently eradicated or still thriving and under no efficient human intervention for extirpation, are presented as follows.

#### **EUROPE.**

**Belgium. France. Georgia. Great Britain. The Netherlands. Spain.** *B. halimifolia*.

**Portugal.** *B. spicata*.

#### **OCEANIA.**

**Australia** (New South Wales, Queensland, Victoria, Western Australia).

**New Zealand.** *B. halimifolia*.

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