

## A new subspecies of *Baccharis salicifolia* (Compositae-Astereae) from Peru

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A new subspecies of the widespread and polymorphic *B. salicifolia* from the Andes of central and southern Peru is described and illustrated. The morphological delimitation of the new taxon is discussed.

*Baccharis salicifolia* (Ruiz & Pav.) Pers. is, besides *B. trinervis* Pers., the most widespread species of the genus. Its distribution encloses the American cordillera and adjacent regions from the southern United States southwards to Patagonia with scattered records also from some regions east of the Andes, eastwards to southeastern Brazil. As it might be expected by its large distribution area, the species is very polymorphic. Well characterized subspecific entities include *B. salicifolia* subsp. *monoica* (G. L. Nesom) Joch. Müll. from Central America and subsp. *calliprinos* (Griseb.) Joch. Müller from the Andes of northwestern and central western Argentina (Müller 2006). Variability of *B. salicifolia* in Peru and Chile is yet not well investigated. Nevertheless, another infraspecific taxon, which can be easily identified by unique characters, widely replaces subsp. *salicifolia* at high altitudes of the Andes of central and southern Peru.

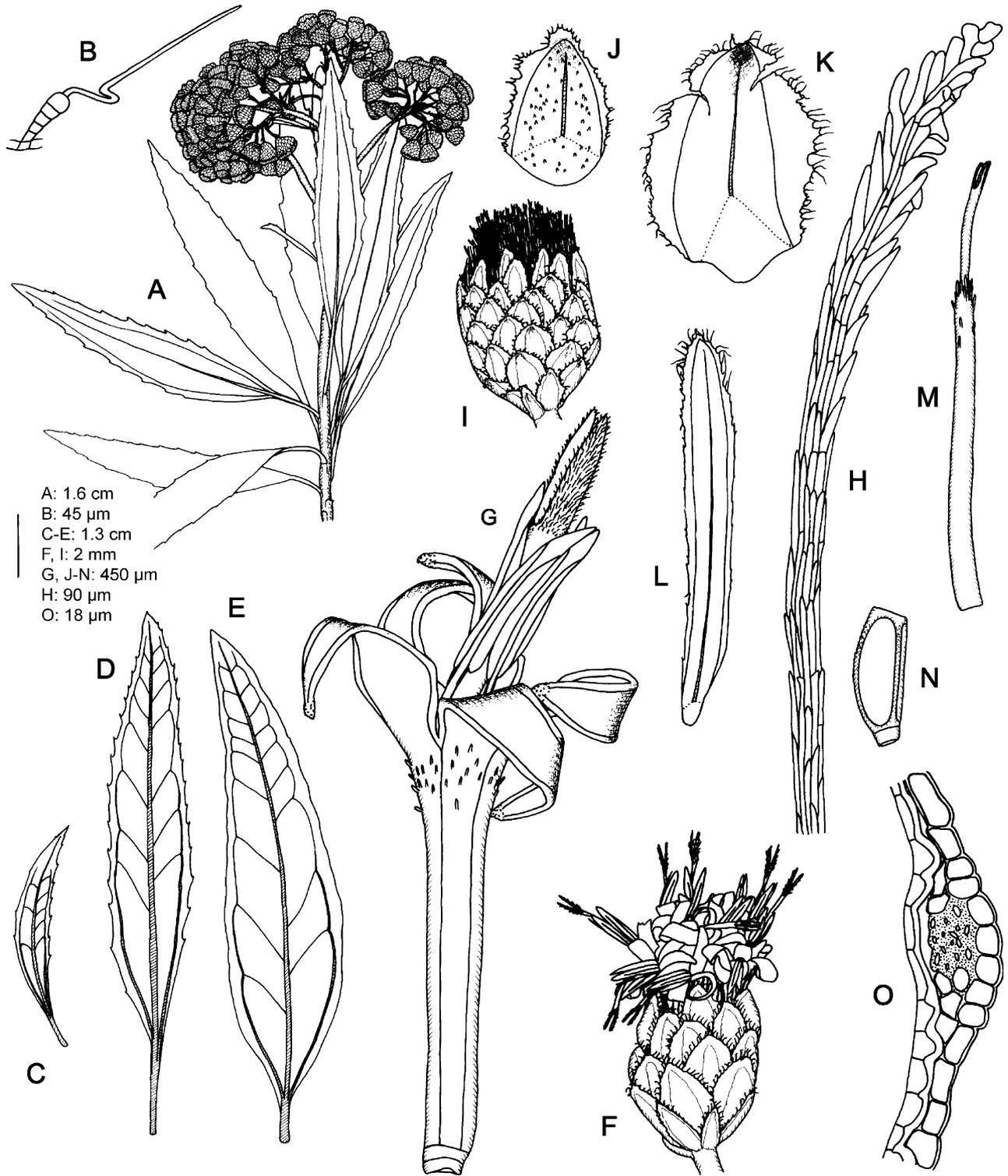
### *Baccharis salicifolia* subsp. *multibracteata* Joch. Müll. subsp. nov.

*Baccharis salicifoliae* subsp. *salicifoliae proxima*, sed *phyllariis medianis latioribus, valde induratis, ex marginibus fissuratis, in capitulis femineis (7–)8–12-seriatis (non 4–7-seriatis), pilis flagellatis marginalibus differt.*

**Type:** Peru, Dept Apurímac, vicinity of Acobamba, 5 km northwest of Chalhuanca, ♀; 17 Dec 1962; H. H. Iltis et al. 611 (MO holotype).

Shrub, 50–400 cm tall; branching sympodial, erectopatent; shoots mostly terminating in a capitulescence, green, like the leaves resinous; older shoots brown, the bark of main stems grooved. Larger leaves 3.5–12 cm long, 0.4–3 cm wide, (3–)4–10(–15) times as long as wide; the petioles 0.5–2 mm long; the leaf blades coriaceous, narrowly to broadly

lanceolate, rarely narrowly elliptic, the apex acute, the base cuneate, the margin on each side with 0–17 rather small and acute teeth often over nearly the whole length, 3-veined from near the base with up to 12 pairs of major lateral veins more distally; the midrib adaxially prominent or (rarely) flat; the central vascular strand with a sclerenchyma strand on both sides; leaves amphistomatic with palisade parenchyma on both sides; both leaf surfaces (and shoots) with tufts of 5–9-celled (excluding basal cell) flagellate hairs and biseriolate glandular hairs; the guard cells of stomata 20–40 µm long. Capitula pedunculate, the borne in terminal corymbiform panicles 2.5–12 cm wide; the peduncles 0.5–15 mm long; bracts 0–3. Male capitula 6–8 mm long; flowers 10–40; involucre 4–5.5 mm long, 3.3–4.2 mm wide, campanulate; phyllaries 27–50 in (5–)6–8 series; the clinanthium flat or convex, glabrous, ridges lacking or vertically much shorter than scar diameter, at the points of intersection forming a short, obtuse apex; the phyllaries strongly indurate, often laterally lacerating; the outer phyllaries ovate or broadly ovate, median phyllaries broadly ovate or broadly elliptic to wider than long, the innermost phyllaries lanceolate, oblanceolate, narrowly elliptic or linear, 1.5–3 times as long as the outermost; all phyllaries light brown, often slightly to distinctly darker subapically, the margins of the outermost and innermost phyllaries rather narrowly, those of the median phyllaries conspicuously broadly scarious, long-fimbriate, in part by marginal flagellate hairs; the outermost phyllaries abaxially mostly with few or scattered biseriolate glandular hairs and rarely with a few flagellate hairs, the median and innermost phyllaries abaxially glabrous, rarely with a few glandular or flagellate hairs. Corolla 4.3–6.3 mm long, the tube 2.2–3.3 mm long, the throat 0.3–0.6 mm long, cup-shaped or campanulate, lobes 1.7–2.7 mm long, coiled at maturity, externally with biseriolate eglandular or glandular hairs on the throat and sometimes near the lobe apex and in the most distal portion of the tube. Anthers including apical



A: 1.6 cm  
 B: 45  $\mu$ m  
 C-E: 1.3 cm  
 F, I: 2 mm  
 G, J-N: 450  $\mu$ m  
 H: 90  $\mu$ m  
 O: 18  $\mu$ m

Fig. 1. *Baccharis salicifolia* subsp. *multibracteata*. (A) female plant, flowering shoot, (B) flagellate hair (leaf); (C)–(E) leaves; (F), male capitulum (G), male flower (H), apex of male pappus bristle (I), female capitulum (J)–(L). Phyllaries of female capitulum, outer to inner (M), female flower (N), Achene (O). Achene cross section, pericarp and testa epidermis (rib). (A, B, I–M) from Iltis & al. 611, (C) from Killip & Smith 21994, (D, F–H) from McDaniel & Gorski 11390, (E) from Hunnewell 16164, (N). (O) from Chávez & Cornejo 777.

appendage 1.2–2.5 times longer than the filaments; the pollen grains 22–28  $\mu$ m in diameter. Style exceeding the corolla, the apex almost completely divided into lanceolate branches. Sterile ovary smooth, glabrous or with a few twin hairs. Pappus uniseriate, 3–4.5 mm long, the bristles 17–28,

apically broadened, with moderately long-protruding, erectopate cell ends. Female capitula 5–9 mm long; flowers 100–200; involucre 4–8 mm long, 3.5–4.5 mm wide, campanulate; phyllaries 4–80 in (7)–8–12 series; phyllaries and clinanthium like those of male capitula. Corolla

2.2–3.2 mm long, apically truncate and with a wreath of biseriate hairs, otherwise glabrous or with few or scattered biseriate hairs in the distal half. Style 3–5 mm long, the branches 0.2–0.6 mm long. Achenes 1–1.7 mm long, 0.35–0.45 mm wide, straw-colored or brown, glabrous or with a few twin hairs, nearly cylindrical, narrowed at base or at both ends, slightly compressed laterally, with 5–7 narrow and low longitudinal ribs; the pericarp cells medium-sized in cross section: the pericarp about as thick as the testa epidermis, the ribs with scattered, rather low distal terminal papillae, the cuticle smooth; the ribs with thin sclerenchyma bundles, the fiber walls about as thick as or slightly thicker than lumen diameter. Epidermal cells of the testa with scarcely or moderately thickened outer walls and sometimes (in the outer half) thickened radial walls. Pappus uniseriate, 2.7–5 mm long, shorter to slightly longer than the style, not elongated at achene maturity, bristles 17–28, persistent (Fig. 1).

## Distribution and habitat

*Baccharis salicifolia* subsp. *multibracteata* is restricted to central and southern Peru (Dept Junín-Cusco), where it grows at rocky and gravelly places, mostly beside rivers and rivulets, and at roadsides (2800–3700 m). Flowering material has been collected all around the year.

## Taxonomic remarks

*Baccharis salicifolia* subsp. *multibracteata* is well characterized by its multiseriate (in female capitula usually at least in 8 series), broad, strongly indurate phyllaries with marginal flagellate hairs. The median phyllaries are often wider than long and fissured from the broadly scarious margins. In other *B. salicifolia* material the phyllaries are 4–7-seriate (in female capitula), thinner, lack marginal flagellate hairs; and the median phyllaries are always conspicuously longer than

wide, are not fissured from the margins, and have narrower scarious margins. The achenes are somewhat papillose and the pericarp cells are rather broad in *B. salicifolia* subsp. *multibracteata*; these conditions are uncommon in *Baccharis salicifolia*. Additionally, the leaves of *B. salicifolia* subsp. *multibracteata* are remarkably thick and coriaceous. A putative hybrid (female plants) with *Baccharis latifolia* (Ruiz & Pav.) Pers. was collected together with *B. salicifolia* subsp. *multibracteata* (male plant) in southern Peru (Iltis 575). It can be recognized by broader, partly ovate, leaves, fewer (about six) series of rather narrow phyllaries, capitula with more than 200 flowers, and achenes with scattered twin hairs and dense papillae (characters of *B. latifolia*) but smooth cuticle (character of *B. salicifolia*).

## Additional specimens examined

Peru. Dept Apurímac, valley of Río Colcachaca at Cotarusi-Colca ca 15 km (air) S of Chalhuanca, Iltis et al. 575 (MO, ♂, with putative hybrid with *B. latifolia*, ♀, NY, ♂); Dept Cusco, puna near Pisac, Hunnewell 16164 (GH, ♀); valley of Río Urubamba below Pisac, McDaniel & Gorski 11390 (US, ♂); Pucapucara, 7 km from Cusco city, Chávez & Cornejo 777 (NY, US, ♀). Cusco, Rose & Rose 19053 (NY, ♂); Dept Junín, Ocopa, Killip & Smith 21994 (US, ♀♂); Hualhuar, Müller & Müller 1056b (LZ, ♂); Huancayo, Soukup 1881 (CAS, ♂); Soukup 1974 (US, ♂).

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## Reference

Müller, J. 2006. Systematics of *Baccharis* L. (Compositae-Astereae) in Bolivia, including an overview of the genus. – Syst. Bot. Monogr. 76: 1–341.