

## VII. TRIBE LIABEAE (Cass. ex Dumort.) Rydb. (1927).

V.A. FUNK, H. ROBINSON AND M.O. DILLON

Mostly perennial herbs or shrubs, sometimes scandent, some annuals or small trees; latex usually present; hairs simple; usually white tomentose on stems and on abaxial surfaces of leaves, sometimes only on tips of involucral bracts, elsewhere sometimes pilose or strigose with stiff hairs. Leaves opposite, sometimes in a rosette, usually petiolate or with a petioliform base, rarely sessile; leaf bases often with pseudostipules or nodal disc, sometimes fused into sheath; leaf blades linear to broadly triangular, ovate, oblanceolate, or elliptical; venation trinervate, pinnate, or palmate. Inflorescences simple or subcymose, sometimes forming a thyrsoid panicle (rarely sessile). Heads usually on short to long peduncles; involucre usually subimbricate with bracts in many gradate series; receptacle alveolate, often with projecting crests or points, rarely paleaceous. Ray florets usually present, usually yellow, occasionally reddish to purple or white, 3–c. 320, fertile; limb present, usually linear to elliptic-oblong; style branches elongate, sometimes spiralled. Disc florets usually yellow, rarely red, purple or white, 3–c. 150, perfect, tube or lower throat pilosulous or glandular, lobes elongate, usually linear; anther collars mostly with short-oblong cells; thecae usually pale, blackened in subtribe Munnoziinae; bases calcarate, sometimes tailed and fringed or digitate; apical appendage thin, flat, usually longer than wide, not constricted at base. Pollen spherical, 25–50  $\mu\text{m}$  in diameter in fluid, tricolporate, echinate, spines regularly to somewhat irregularly arranged, never lophate, the bacula tubular or in circle under spines, sometimes reduced and grains caveate (Fig. 41). Style base glabrous, usually enlarged; upper style shaft and backs of branches with sweeping hairs; branches with stigmatic papillae over entire inside surface, with little or no appendage, branches usually shorter than hairy upper style shaft. Cypselae usually prismatic or subterete, with 5–10 ribs, less often 4- or 2-ribbed; variously with biseriate setulae, uniseriate hairs, stipitate glands or glandular dots; pappus usually with numerous long inner capillary bristles and short outer series of squamellae, sometimes with scales or plumose bristles or absent. Chromosome numbers known from 12 genera, base numbers  $x = 7, 9, 10, 12, 14, 16$  and 18 (Robinson et al. 1985).

A tribal base number of  $x = 9$  was most probable from the data cited by Turner et al. (1967), and was proposed by Robinson et al. (1985).

Tribe Liabeae contains approximately 190 species arranged in 16 genera, and is distributed in the montane Neotropics at 50–4,750 m elevation. The greatest generic and species concentration is in western South America; 13 of the 16 genera occur in northern Peru. Most species of Liabeae are found in open areas in mid-elevation forests. A few species in several genera are found in disturbed habitats associated with rivers, roadcuts or treefalls. More rarely, species occupy seasonally dry scrub or desert habitats. A few members are found in essentially alpine habitats well above forested zones, including subparamo, paramo, jalca and puna (> 3,000 m).

Obvious features shared by many but not all members of Liabeae include leaves which are opposite, often strongly trinervate with tomentose undersurfaces, yellow ray and disc florets, and the frequent occurrence of latex. The tribe shares the deeply lobed disc corollas, long-spurred or calcarate anther bases, continuous stigmatic surfaces on the inside of the style branches, and spherical spinose pollen characteristic of members of subfamily Cichorioideae along with Cichorieae, Vernoniaeae and Arctotideae (Robinson and Funk 1987; Jansen et al. 1991; Bremer 1994). Although

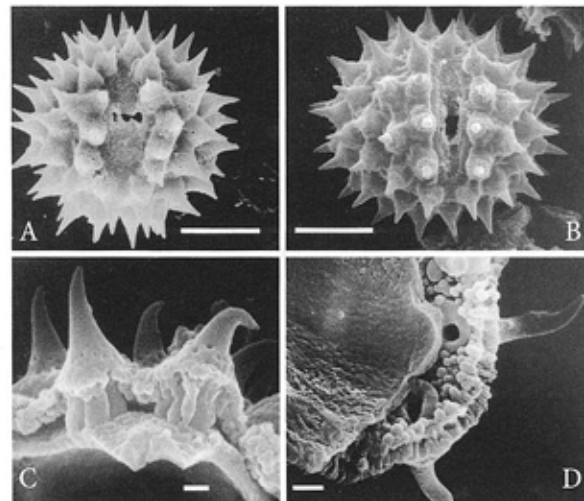


Fig. 41. Compositae-Liabeae. SEM micrographs of pollen grains. A, B Whole grains. A *Microliabum humile*. Form with unevenly disposed spines. B *Chrysactinium acaule*. Form with evenly disposed spines. C, D Broken grains. C *Dillandia perfoliata*. Bacula grouped under spines. D *Munnozia tenera*. Base of spine fused into cylinder. Scale bars: A, B = 10  $\mu\text{m}$ , C, D = 1  $\mu\text{m}$

monophyly of the subfamily is in doubt, Liabeae, Vernoniaeae, Cichorieae and Arctotideae appear to form a monophyletic group within the subfamily, and the sister group of Liabeae can be found in one of these tribes (Robinson and Funk 1987; Kim et al. 2003). These four tribes have long sweeping hairs which cover the outer surface of the style branches and the upper style shaft. Latex is found in at least some genera of Cichorieae, Arctotideae and Liabeae, but it is rarely noted for Vernoniaeae. Cichorieae and Vernoniaeae have homogamous heads without rays, while presence of rays seems plesiomorphic in Liabeae and Arctotideae. Lophate pollen and bluish florets are common in Cichorieae and Vernoniaeae, both are lacking in Liabeae and Arctotideae lacks the bluish florets. The history of the classification of Liabeae reflects the difficulty in tribal placement encountered by early workers. Cassini (1823, 1825, 1830), Lessing (1832), de Candolle (1836), Weddell (1855–1857), and Bentham (1873a) all variously treated groups of taxa which are now placed in this tribe as members of Vernoniaeae, Heliantheae, Helenieae, Senecioneae and Mutisieae. Bentham's classification, which placed most of the taxa in one genus, *Liabum*, in tribe Senecioneae, was essentially adopted by Hoffmann (1894). Rydberg (1927) was the first to propose tribal status for the genera from the North American Flora area. However, despite his work which recognized genera from Mexico, Central America and the West Indies, and isolated works by Blake (1935), Cabrera (1954), and Sandwith (1956), who recognized the affinities of other genera to Liabeae, Bentham's classification was retained more or less intact and accepted by many modern floristic and taxonomic workers (Cronquist 1955; D'Arcy 1975; Carlquist 1976). Nash and Williams (1976) accepted Bentham's concept of a single genus, but they placed the genus in Vernoniaeae. Robinson and co-workers published a series of papers bringing the genera together into one tribe (Robinson and Brettell 1973a, 1974; Robinson 1983a with included additional references). Nordenstam (1977) followed Robinson's tribal circumscription in a tribe separate from Senecioneae. Robinson (1983a) provided the first modern view of the whole tribe, including a detailed review of previous classification efforts and relevant literature. Since the review of Robinson (1983a), there have been several significant changes in generic limits in the tribe. Two new genera have been described from northern Peru, *Dillandia* (Funk and Robinson

2001) and *Bishopanthus* (Robinson 1983b); *Austroliabum* has been reduced to synonymy under *Microliabum* (Robinson 1990b); and *Liabellum* has been placed into synonymy with *Sinclairia* (Turner 1989) and then resurrected (Robinson 1990a).

#### KEY TO THE GENERA

1. Abaxial surfaces of leaves green, without tomentum; leaves and stems with stiff hairs with enlarged bases 2
  - Abaxial surfaces of leaves covered with dense white or grey tomentum; leaves and stems without stiff hairs with enlarged bases 3
2. Coarse perennial herbs, subshrubs, shrubs, or small trees; leaves with 5–9 palmately arranged veins; cypselae 4-sided with 4 ribs 301. *Erato*
  - Small erect, decumbent, or creeping herbs; leaves 3-nervate; cypselae compressed with 2 ribs 303. *Philoglossa*
3. Anther thecae dark brown or black 4
  - Anther thecae pale yellow or very light brown 5
4. Pappus white; small herbaceous perennials; leaves in a rosette or grouped close together on a short stem 300. *Chrysactinium*
  - Pappus sordid or reddish; usually lax subshrubs, sometimes annual or perennial herbs; leaves cauline 302. *Munnozia*
5. Heads sessile, subtended by a rosette of leaves or nearly sessile with peduncles of less than 2 cm long 298. *Paranephelius*
  - Heads on peduncles more than 2 cm long 6
6. Leaves pinnately veined 7
  - Leaves 3-nervate 10
7. Herbs; heads few; disc florets 10–55; leaves sessile, subperfoliate or perfoliate 8
  - Trees, shrubs, or vines; heads many; disc florets 3–34; leaves usually with distinct unwinged to broadly winged petioles 9
8. Adaxial surfaces of leaves rugose to nearly smooth; corollas reddish-orange to red; involucre bracts eximbricate, linear-lanceolate with attenuate tips 299. *Pseudonososeris*
  - Adaxial surfaces of leaves bullate; corollas yellow to yellow and purple; involucre bracts subimbricate, lanceolate with acute tips 291. *Dillandia*
9. Trees or shrubs; petioles without wings, bases of petiole pairs fused into a sheath; raphids of cypselae wall elongate 292. *Ferreyranthus*
  - Vines or shrubs; petioles with or without wings, sometimes included in perfoliate leaf base but not fused into a sheath; raphids of cypselae wall subquadrate 296. *Oligactis*
10. Pappus lacking 289. *Cacosmia*
  - Pappus of bristles, awns and/or squamellae 11
11. Pappus of plumose bristles; disc corollas red 290. *Chionopappus*
  - Pappus of capillary bristles, awns and/or squamellae; all corollas yellow 12
12. Heads terminal and solitary on leafy stems; leaf bases fused into a sheath 288. *Bishopanthus*
  - Heads few to many but not solitary; leaf bases without a sheath 13

13. Inflorescences with all branches alternate; receptacle scarcely alveolate, without hairs, squamellae or projections; Argentina and Bolivia **295. *Microliabum***  
 - Inflorescences with at least basal branches opposite; receptacles with hairs, squamellae or projections; Bolivia northwards to Mexico 14
14. Plants without latex; style branches of disc florets longer than hispidulous part of distal style shaft; anther bases digitate; rays 20–120; involucre bracts 50–150 in 5 series; raphids of cypselae walls subquadrate **294. *Liabum***  
 - Plants with latex; style branches of disc florets shorter than hispidulous part of distal style shaft; anther bases minutely crenulate; rays usually absent or when present 4–25; raphids of cypselae walls elongate 15
15. Herbs; rays always absent; leaf blades shallowly to deeply lobed; petioles winged to base, sometimes perfoliate; disc florets 25–30; inner pappus of 40–50 capillary bristles, outer of 20–40 squamellae **293. *Liabellum***  
 - Shrubs or vines; rays usually present (absent in a few species); leaf blades entire or serrate; petiole bases simple, not winged and without pseudostipules; disc florets 5–30; inner pappus of 30–40 bristles, outer of 10–15 squamellae **297. *Sinclairia***

**VII.I. SUBTRIBE LIABINAE** Cass. ex Dumort.  
(1829).

Plants perennial; with or without latex; leaves opposite, stems or leaf undersides always tomentose; anther thecae pale, usually tailed and fringed or digitate at base; florets usually yellow, rarely red or purple; style branches usually shorter than hairy upper shaft; cypselae prismatic or subterete. Pollen spines unevenly grouped.

**288. *Bishopanthus*** H. Rob.

*Bishopanthus* H. Rob., *Phytologia* 54: 64 (1983).

Shrub; with latex. Leaf bases fused into sheath; blades 3-nervate, bullate. Heads solitary, pedunculate, campanulate; involucre bracts c. 25, in 2 subequal series; epaleaceous. Ray florets c. 20; limbs linear. Disc florets c. 25; bases of anther thecae short-tailed, short-fringed. Cypselae with setulae, uniseriate hairs, and glands, raphids subquadrate; pappus bristles c. 35, with short outer bristles. One species, *B. soliceps* H. Rob., Peru.

**289. *Cacosmia*** Kunth

*Cacosmia* Kunth in H.B.K., *Nov. Gen. et Sp.*, ed. folio 4: 227 (1818); Nordenstam, *Bot. Notiser* 130: 279–286 (1977), rev.; Robinson, *Fl. Ecuador* 190, 2: 1–63 (1978), reg. rev.  
*Clairvillea* DC. (1836).

Shrub; usually with latex; stems densely pubescent. Leaf bases fused into sheath; blades 3–5-nervate,

bullate. Inflorescence densely corymbiform; heads cylindrical; involucre bracts 20–25, 5–6-seriate, outer bracts ranked, inner bracts not in ranks; receptacle epaleaceous. Ray florets 5, limbs broad. Disc florets 5–6; bases of anther thecae without tails, minutely digitate. Cypselae 3–5-angled, glabrous, raphids elongate; pappus lacking.  $n = 7 + 1$  or 2. Three species in Ecuador, one into Peru.

**290. *Chionopappus*** Benth.

*Chionopappus* Benth. in Benth. & Hook. f., *Gen. Pl.* 2: 485 (1873).

Shrubs; latex not noted; stems arachnoid-tomentose. Leaf bases fused into sheath, blades 3-nervate. Inflorescences simple dichasia; heads campanulate; involucre bracts 50–55, c. 5-seriate; paleae strap-shaped. Ray florets c. 40. Disc florets 75–125; corollas red, glabrous; bases of anther thecae short-tailed. Cypselae 8–10-ribbed, setulae minute, raphids elongate; pappus bristles 8–10, plumose.  $n = c. 9$ . One species, *C. benthamii* S.F. Blake, Peru.

**291. *Dillandia*** V.A. Funk & H. Rob.

*Dillandia* V.A. Funk & H. Rob., *Syst. Bot.* 26: 218 (2001).

Moderate-sized to small herbs less than 60 cm tall; latex not noted; stems arachnoid-tomentose. Leaf bases sessile, subpetiolate or perfoliate; surface bullate; blades pinnately veined. Inflorescences of 1–2 heads or, more frequently, a 3–7-headed subumbel; heads campanulate, involucre bracts 25–40, 5–6-seriate; receptacle without chaff. Ray florets 15–40, limbs oblong to narrowly oblong. Disc florets 10–30, corollas yellow to yellow and purple, tubes pilose, anther thecae pale, bases rounded. Cypselae (immature) 7–10-ribbed, densely setulose, with a few subquadrate raphids; pappus bristles 10–30, sometimes shorter outer bristles. Three species, Peru.

**292. *Ferreyranthus*** H. Rob. & Brettell

*Ferreyranthus* H. Rob. & Brettell, *Phytologia* 28: 50 (1974); Dillon & Sagastegui, *Arnaldoa* 2: 7–23 (1994), rev.; Robinson, *Fl. Ecuador* 190, 2: 1–63 (1978), reg. rev.

Shrubs or weak trees; without latex; stems arachnoid-tomentose. Leaf bases fused into sheath; blades pinnately veined. Inflorescences densely corymbiform; heads broadly campanulate; involucre bracts 45–55, c. 5-seriate; receptacle squamuliferous. Ray florets 8–12, limbs short.

Disc florets 12–25, corollas glandular-dotted; bases of anther thecae short-tailed, strongly fringed. Cypselae c. 10-ribbed, with setulae and glands, raphids elongate; pappus bristles 10–15, squamellae narrow.  $n = c. 18$ . Eight species, Peru, one into Ecuador.

**293. *Liabellum* Rydb.**

*Liabellum* Rydb., N. Amer. Fl. 34, 4: 294 (1927).

Small xylopodial herbs; with latex; stems short, arachnoid-tomentose. Leaf bases perfoliate, sessile, blades scarcely to deeply lobed, 3-nervate. Heads terminal, 1–3 on elongate peduncles, broadly campanulate; involucre bracts 20–40, c. 4-seriate; receptacle sometimes puberulous. Rays lacking. Disc florets 25–30; bases of anther thecae scarcely crenulate. Cypselae c. 10-ribbed, setulae long, raphids elongate; pappus bristles 40–50, squamiform setae 20–40. Five species, Mexico.

**294. *Liabum* Adans.**

*Liabum* Adans., Fam. 2: 131 (1763); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

*Starkea* Willd. (1803).

*Andromachia* Humb. & Bonpl. (1809).

*Allendea* La Llave & Lex. (1824).

Perennial herbs; without latex; stems arachnoid-tomentose. Leaf bases connected across node, often forming nodal disc; blades 3-nervate. Inflorescence partly subumbellate; heads broadly campanulate; involucre bracts 50–150, c. 5-seriate; receptacle ridged or bristly. Ray florets 20–120. Disc florets 10–85; style branches long; anther thecae bases digitate. Cypselae c. 10-ribbed, raphids subquadrate; pappus bristles 17–40, squamellae short, narrow.  $n = c. 12$  to 39, many counts are c. 18. Forty-five species, Mexico, Central America, Greater Antilles, and Andes of South America.

**295. *Microliabum* Cabrera**

*Microliabum* Cabrera, Bol. Soc. Argent. Bot. 5: 211 (1955), nom. nov. for *Liabellum* Cabrera

*Liabellum* Cabrera (1954), non *Liabellum* Rydb. (1927).

*Angelianthus* H. Rob. & Brettell (1974), nom. nov. illegit. superfl. for *Liabellum* Cabrera

*Austroliabum* H. Rob. & Brettell (1974).

Annual to perennial herbs or subshrubs; with latex; stems white-tomentose and glandular-hairy. Leaf bases broadened or with pseudostipules or nodal discs; blades 3-nervate. Heads solitary or in cymes,

broadly campanulate; involucre bracts 30–75, 2–4-seriate, subequal to gradate; receptacle epaleaceous. Rays 10–30; limbs narrowly elliptical to linear. Disc florets 15–175; bases of anther thecae with few or no teeth. Cypselae 8–10-ribbed, setuliferous, raphids elongate; pappus bristles or lamellae 8–16, outer squamellae 8–16. Six species, southern Bolivia, northern Argentina.

**296. *Oligactis* (Kunth) Cass.**

*Oligactis* (Kunth) Cass., Dict. Sci. Nat. 36: 16 (1825); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

*Andromachia* sect. *Oligactis* Kunth (1818).

Shrubs and vines, without latex. Leaf bases sometimes confluent across nodes; blades pinnately veined. Inflorescence densely corymbiform; heads narrowly to broadly campanulate; involucre bracts 16–55, 4–5-seriate; receptacle ridged and squamuliferous. Ray florets 3–18, limbs short. Disc florets 3–34; style branches rather long; anther thecae bases digitate. Cypselae 5–8-ribbed, with glands and contorted setulae, raphids subquadrate; pappus bristles 20–35, tips often broad, squamellae 7–10.  $n = 18, 39$ . Fifteen species, mostly northern Andes, one to Costa Rica.

**297. *Sinclairia* Hook. & Arn.**

*Sinclairia* Hook. & Arn., Bot. Beech. Voy. 433 (1841).

*Megaliabum* Rydb. (1927).

*Sinclairiopsis* Rydb. (1927).

Subshrubs, shrubs or vines; with latex; stems arachnoid-tomentose. Leaves opposite or ternate, sometimes seasonally deciduous, bases without sheaths or pseudostipules; blades 3-nervate. Inflorescences laxly to densely corymbiform or pyramidal; heads narrowly to broadly campanulate; involucre bracts 18–45, 3–5-seriate; receptacle glabrous, spinulose or puberulous. Ray florets absent or 4–25. Disc florets 5–30; anther thecae bases minutely crenulate. Cypselae c. 8–10-ribbed, glabrous or setuliferous, raphids elongate; pappus bristles 30–40, squamellae 15–20.  $n = 15$  to 18. Thirty species, Mexico, Central America, one to western Colombia.

**VII.2. SUBTRIBE PARANEPHELIINAE H. Rob. (1983).**

Plants rosetiform or short-stemmed, fibrous-rooted, usually with latex; roots often swollen and fleshy; leaves often pinnately lobed, undersurface

with white tomentum; involucre gradate; ray floret limbs linear; disc corollas funnellform, tubes 2–3 times as long as lobes; thecae pale, base not tailed nor noticeably lobed; style branches longer than scabrid upper style shaft; cypselae prismatic or fusiform, raphids elongate. Pollen spines mostly evenly dispersed.

298. *Paranephelius* Poepp.

*Paranephelius* Poepp., Nov. Gen. et Sp. 3: 42 (1843); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

*Liabum* sect. *Paranephelius* (Poepp.) Benth. in Benth. and Hook. f. (1873).

Acaulescent perennial herbs. Leaf bases not sheathing; blades trinervate to pinnately veined. Heads sessile, broadly campanulate; involucre bracts 40–50, c. 4-seriate; receptacle ridged. Ray florets 20–35; style branches spiralled. Disc florets 20–33. Cypselae c. 10-ribbed, glabrous or with some arachnoid hairs; pappus bristles 45–80, outer series indistinct.  $n = 9, 14, 15$ . Seven species, Peru, Bolivia, one to northern Argentina.

299. *Pseudonosieris* H. Rob. & Brettell

*Pseudonosieris* H. Rob. & Brettell, Phytologia 28: 59 (1974).

Small perennial herbs. Leaf bases sessile, subauriculate; blades pinnately veined. Inflorescence scapose or subsapose; heads pedunculate, broadly campanulate; involucre bracts c. 40, c. 4-seriate; receptacle subglabrous. Ray florets yellow or yellow-orange, 15–20. Disc florets orange-yellow or red, 25–55. Cypselae c. 10-ribbed, with sparse setulae or tomentum; pappus bristles 25–30, squamiform outer series.  $n = 12(?)$ . Three species, Peru.

VII.3. SUBTRIBE MUNNOZIINAE H. Rob. (1983).

Plants usually with latex; heads often long-pedunculate; ray floret limbs linear; disc corolla throat broadened at base; thecae black, base not tailed nor noticeably lobed; style branches much shorter than hairy upper style shaft, blunt; cypselae prismatic to biconvex, raphids subquadrate. Pollen spines evenly dispersed.

300. *Chrysactinium* (Kunth) Wedd. Fig. 42

*Chrysactinium* (Kunth) Wedd., Chlor. And. 1: 212 (1857); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.; Funk & Zermoglio, Syst. Bot. 24: 323–338 (1999), rev.

*Andromachia* sect. *Chrysactinium* Kunth (1818).

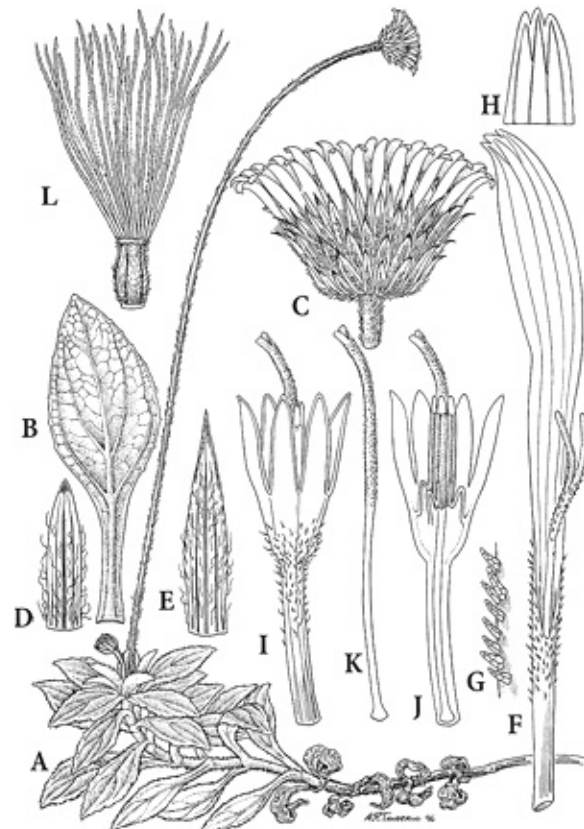


Fig. 42. Compositae-Liabeae. *Chrysactinium wurdackii*. A Habit, note opposite leaves. B Leaf, note tomentose undersurface. C Head, note heterogamous heads. D Outer involucre bract. E Inner involucre bract. F Ray floret corolla and style. G Hairs on tube of ray floret. H Apex of ray corolla. I, J Disc corolla, note continuous stigmatic surface on inside of style branches, calcarate anther bases, and deeply divided corolla. K Style of disc floret. L Cypselae and pappus. (Drawing by A. Tangerini)

Perennial rhizomatous herbs, rosetiform or short-stemmed; stems evanescent-tomentose. Leaf bases cuneate or petioliform; blade 3-nervate, tomentose. Heads solitary, long-pedunculate, broadly campanulate; involucre bracts 40–60, 4–5-seriate; receptacle squamulose. Ray florets 30–60. Disc florets 30–60; anther collar cells annulate. Cypselae 8–10-ribbed; pappus bristles 30–60, white, no squamellae.  $n = 12$  to 16. Six species, Ecuador, northern Peru.

301. *Erato* DC.

*Erato* DC., Prodr. 5: 318 (1836); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

*Munnozia* subg. *Erato* (DC.) H. Rob. & Brettell (1974).

Coarse perennial herbs; stems and leaves pilose or strigose. Leaves with oblong pseudostipules; blades palmately 5–9-veined, surfaces green. Inflorescence cymose to subumbellate; heads broadly campanulate; involucre bracts 40–100, c. 4-seriate, tips sometimes tomentose; receptacle foveolate and ridged. Ray florets 75–230. Disc florets 20–150. Cypselae 4-ribbed, glabrous or hispidulous; pappus of 25–50 bristles or short awns, no outer series.  $n = 9$ . Five species, Costa Rica to Peru.

**302. *Munnozia* Ruiz & Pav.**

*Munnozia* Ruiz & Pav., Fl. Peru Chil. Prodr. 108 (1794); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

*Alibum* Less. (1832).

*Prionolepis* Poepp. (1845).

*Kastnera* Sch. Bip. (1853).

*Liabum* subg. *Chrysastrum* Willd. ex Sch. Bip. (1853).

*Munnozia* subg. *Kastnera* (Sch. Bip.) H. Rob. & Brettell (1974).

Annual or perennial herbs or subshrubs. Petioles sometimes winged, bases often pseudostipulate; blades 3-nervate to pinnately veined, usually tomentose abaxially. Inflorescence terminal, more or less corymbose; heads broadly campanulate; involucre bracts 17–70, 2–4-seriate, subequal to gradate; receptacle often squamulose. Florets yellow, rarely whitish to lavender. Ray florets 6–70. Disc florets 9–85. Cypselae 6–10-ribbed, setuliferous; pappus bristles sordid to reddish, 5–55, with squamellae.  $n = 12$  to 36, most frequently 10, 11 and 12. Forty-six species, mostly from the Andes, few in Costa Rica, Panama.

**303. *Philoglossa* DC.**

*Philoglossa* DC., Prodr. 5: 567 (1836); Robinson, Fl. Ecuador 190, 2: 1–63 (1978), reg. rev.

Small erect to creeping herbs; stems and leaves pilose to strigose. Leaf bases with oblong pseudostipules; blades 3-nervate, surfaces green. Involucres broadly campanulate; bracts 20–30, 3–4-seriate, subequal to gradate. Ray florets 21–70. Disc florets 30–60, yellow, rarely deep purple or brown. Cypselae compressed, 2-ribbed, mostly glabrous; pappus deciduous squamellae or awns, or lacking.  $n = 18$ . Five species, southern Colombia to Bolivia.