

GENERA INCERTAE SEDIS

246. CAVEA W. W. Smith & J. Small, *Trans. & Proc. Bot. Soc. Edinburgh* 27: 119. 1917.

葶菊属 ting ju shu

Chen Yousheng (陈又生); Arne A. Anderberg

Herbs, perennial. Rhizome stout and branched, usually growing in a large clone. Stems erect, simple, solitary or clustered. Leaves oblanceolate, mostly basal with distinct petioles, cauline ones \pm sessile, alternate. Capitula solitary, broadly campanulate, disciform with numerous marginal female florets and disk male florets or discoid and plants monoecious or dioecious. Involucres in several series, herbaceous, outermost series largest. Receptacle slightly convex or flat, foveolate, epaleate. Functionally male florets usually in center, 20–30 in number; corollas tubular-campanulate, deeply 5-lobed, lobes reflexed; style undivided, conic at apex; pappus of one series. Female florets numerous (sometimes totally female florets in a head or in all capitula of one plant); corolla tubular, shallowly 4-toothed; style 2-branched, branches linear, rounded at apex. Achenes oblong or narrowly obovoid. Pappus of 2 series, barbellate bristles, persistent, numerous on female florets, sparse and shorter on male florets.

One species: Himalaya, including China.

The original description of this genus is somewhat inaccurate. Smith, in the protologue, noted that the pappus is in one series; however, only the pappus in male florets is uniseriate, while those in female florets are biseriate and longer, and all pappus bristles are persistent. Smith described the receptacle as paleate, but the receptacle is, in fact, epaleate.

Cavea was originally separated from the genus *Saussurea*. It has been associated with the Inuleae in the older literature, but Merxmüller et al. (in Heywood et al., *Biol. Chem. Compos.* 1: 579. 1977) excluded it from that tribe because of its aberrant pollen-wall morphology. Anderberg considered it might be a relative of *Saussurea* in the Cardueae. Jeffrey (in Kadereit & C. Jeffrey, *Fam. Gen. Vasc. Pl.* 8: 146. 2007) considered it to be a Carduid genus of uncertain placement, but he also noted that *Cavea* may prove to belong elsewhere in Asteraceae.

1. *Cavea tanguensis* (J. R. Drummond) W. W. Smith & J. Small, *Trans. & Proc. Bot. Soc. Edinburgh* 27: 120. 1917.

葶菊 ting ju

Saussurea tanguensis J. R. Drummond, *Bull. Misc. Inform. Kew* 1910: 78. 1910.

Herbs, perennial. Rhizome woody, stout, usually branched, 10–30 cm, caespitose with rosette of sterile leaves and flowering stems. Stems stout, 5–25 cm tall, many leaved or sparsely leaved, somewhat scapellike, brownish glandular. Leaves in lower parts subleathery, or \pm fleshy, spatulate-oblong, 15–60(–120) \times 5–10 mm, abaxially densely glandular pubescent or subglabrous, base attenuate, margin remotely denticulate, apex obtuse or obtuse-acuminate; cauline leaves ovate-lanceolate to oblong-spatulate, 30–60 \times 5–12 mm, slightly fleshy, margin sparsely serrate, apex obtuse; upper cauline leaves like bracts,

ovate-lanceolate, no more than 15 mm, subverticillate at top and \pm closely embracing capitulum. Capitula solitary, terminal, widely hemispheric, (2–)3–3.5 cm in diam. Involucre 1.5–2 cm; phyllaries in 4 or 5 series, leaflike, linear-oblong or obovate-lanceolate, nearly as long as florets, margin covered with moderately sparse glandular hairs, apex obtuse or acute. Florets 100–200 in number, very slender. Male florets tubular-campanulate, 5-lobed, limb ca. 4.5 mm, lobes ca. 4 mm; stigma undivided; pappus of 1 series, ca. 5 mm; sterile achenes ca. 11 mm, glabrous. Female florets purplish, tubular, densely white hispid, limb ca. 7 mm, lobes ca. 0.2 mm; stigma 2-lobed, lobes exerted in corolla tube; pappus ca. 7.5 mm. Achenes 5–6 mm, densely sericeous. Pappus nitid purple, as long as corolla, persistent, of 2 series of ca. 50 scabrid subequal bristles. Fl. Jul–Aug, fr. Sep–Oct.

Gravelly ground near streams and glaciers; 4000–5100 m. SW Sichuan, Xizang [Bhutan, India (Sikkim)].

247. CENTIPEDA Loureiro, *Fl. Cochinch.* 2: 492. 1790.

石胡荽属 shi hu sui shu

Shi Zhu (石铸 Shih Chu); Michael G. Gilbert

Myriogyne Lessing.

Annual or perennial herbs. Leaves alternate, entire or coarsely toothed. Capitula apparently axillary, solitary or in monochasial cymes, sometimes grouped into racemelike synflorescence, sessile or shortly pedunculate, heterogamous and discoid. Involucre small, hemispheric; phyllaries in 1 or 2 series, subequal, herbaceous, margins scarious. Receptacle flat or convex, naked. Marginal florets female, in several rows, fertile; corolla minute, tubular, obscurely 3-lobed, creamy white, pale yellow, green, or purplish. Disk florets few, bisexual; corolla campanulate, 4-lobed, similar in color, glabrous. Anthers obtuse at base. Style branches of disk florets short, truncate. Achenes scarcely compressed, obtusely 3- or 4-ribbed or -angled; corona absent.

Ten species: all species in Australia and New Zealand, one species extending to South America, one species extending to Papua New Guinea, and one weedy species extending to Asia and the Pacific Islands, including China.

Centipeda superficially resembles *Cotula* in the Anthemideae, where it was placed in the treatment in FRPS (76(1): 132–133. 1983), but it differs in the synflorescence and in the tubular corollas of the female florets. K. Bremer and Humphries (*Bull. Nat. Hist. Mus. London, Bot.* 23: 161.

1993) suggested that it be placed in the Astereae, whereas N. G. Walsh (Muelleria 15: 33. 2001), in his revision of the genus, suggested that it might belong to the Astereae or Gnaphalieae. Panero (in Kadereit & C. Jeffrey, Fam. Gen. Vasc. Pl. 8: 399. 2007) placed it in its own subtribe within the Athroismeae on the basis of molecular data.

1. Centipeda minima (Linnaeus) A. Braun & Ascherson, Index Sem. Hort. Berol. App. 6. 1867.

石胡荽 shi hu sui

Artemisia minima Linnaeus, Sp. Pl. 2: 849. 1753; *A. orbicularis* (Loureiro) Roxburgh; *A. sternutatoria* Roxburgh; *Centipeda minima* var. *lanuginosa* (Candolle) Domin; *C. minuta* (G. Forster) Bentham ex C. B. Clarke; *C. orbicularis* Loureiro; *C. orbicularis* var. *lanuginosa* (Candolle) F. M. Bailey; *Cotula minima* (Linnaeus) Willdenow; *C. minuta* G. Forster; *C. sternutatoria* (Roxburgh) Wallich ex Candolle; *Dichrocephala minima* (Linnaeus) Bojer; *Grangea minuta* (G. Forster) Poiré; *Myriogyne minima* (Linnaeus) Lessing ex Seemann; *M. minuta* (G. Forster) Lessing; *M. minuta* var. *lanuginosa* Candolle; *Sphaeromorphaea centipeda* Candolle, nom. illeg. superfl.; *S. russelliana* Candolle var. *glabrata* Candolle.

Prostrate or ascending, slender, leafy herb, sparsely lanate to subglabrous, usually with a mixture of white cottony and coarser multicellular hairs. Branches many, spreading from

root, 8–20 cm. Leaf blade oblong-obovate to spatulate, 3–12(–27) × 1.5–4(–11) mm, glabrescent to moderately cottony, margins with a few, coarse teeth. Capitula leaf-opposed or apparently axillary, solitary, sessile or subsessile, rounded, 1.5–2.5(–5) mm in diam. Phyllaries obovate, ca. 1 mm, margins membranous, erose. Female corollas 0.2–0.4 mm. Bisexual florets 8–14, often purplish. Achenes narrowly cuneate, 0.6–1 mm, tipped with persistent style, angles 4 or 5, with short, ascending bristles, continued virtually to truncate apex; faces often each with a line of sessile glands.

Disturbed habitats; below 1500(–2500) m. Anhui, Chongqing, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [India, Indonesia, Japan, Papua New Guinea, Philippines, Russia, Thailand; Australia, Pacific islands (Fiji, New Zealand, Samoa)].

The Chinese material belongs to *Centipeda minima* subsp. *minima*. The second subspecies, *C. minima* subsp. *macrocephala* N. G. Wilson, is restricted to Australia.

Centipeda minima is widely used in traditional medicine.

248. SYMPHYLLOCARPUS Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9: 151. 1859.

含苞草属 han bao cao shu

Chen Yousheng (陈又生); Arne A. Anderberg

Capitula 3–4.5(–6) mm in diam., heterogamous, globose, sessile, compactly congested in 2s–4s in bifurcations of stem and its branches. Involucre distichous; phyllaries of various forms, lanceolate, oval, rhomboidal, or obovate, membranous, margin transparent, with fine denticles, apex acute. Receptacle flat with paleae. External florets multiseriate, female, carpogenous, tubular; corolla filiform, irregular, sometimes subregular, tridentate, more rarely bidentate, sometimes 4-dentate; ovary adnate to neighboring palea of receptacle almost to half of its length, without pappus, stigma bipartite; marginal female florets minutely radiate with tridentate or bidentate corolla. Central florets 6–20, bisexual, carpogenous, tubular; corolla campanulate, regular, 4-dentate; anthers with very short entire appendages at base; ovary oblong, adnate to 2 neighboring membranes or to 1 membrane of receptacle, more rarely not adnate. Achenes finely terete, smooth, with fine orbicular glands and sparse long glandular hairs, forked at ends. Pappus absent.

One species: China, Russia.

Symphyllocarpus has been associated with the Inuleae in the older literature, but it is unlikely to be a member of that tribe and is currently of unknown placement (Jeffrey in Kadereit & C. Jeffrey, Fam. Gen. Vasc. Pl. 8: 574. 2007).

1. Symphylocarpus exilis Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9: 151. 1859.

含苞草 han bao cao

Herbs, annual, to 8(–20) cm tall, in habit analogous to *Centipeda*, glabrous; roots thin, fusiform; stems erect, sulcate, shortly forkedly branching above, branches arcuate-spreading. Leaves alternate, sessile, falsely opposite in bifurcations of stems or gathered in 4s, lanceolate, 12–15(–45) × 3–4(–6) mm, glabrous, with 1–3(–7) denticles in upper portion, base attenuate; upper and bract leaves linear, entire or toothed. Capitula sessile, congested in 2s–4s in bifurcations of stem and its branches, 3–4.5(–6) mm in diam., polyanthous, heterogamous, globose. Involucre distichous; phyllaries of various forms, lanceolate, rhomboidal, oval, or obovate, 1.5–2.5 × ca. 0.5 mm,

membranous, glabrous, greenish in center, transparent at margin with fine denticles, apex acuminate. Receptacle flat with paleae lanceolate or ovate, adnate to ovaries of female florets almost up to half of their length, free above, slightly spreading, acuminate with fine denticles at apex, almost reaching apex of corolla in length. External florets multiseriate, female, carpogenous, light yellow, tubular; corolla 0.3–0.6 mm, filiform, irregular, sometimes subregular, mainly tridentate, more rarely bidentate, sometimes 4-dentate; style ca. 0.8 mm, filiform; stigma bipartite with short lobes, ca. 0.16 mm, upright, bluntly linear, ca. 0.06 mm wide, glabrous, slightly divergent; ovary terete, 0.5–1 × ca. 0.2 mm, stalked at base, adnate to nearest palea of receptacle almost up to middle of its length, with fine globose glands and with glandular, sparse, long, horizontally spreading hairs, ovary with upright glandular hairs at apex;

pappus absent; marginal female florets minutely radiate, with tridentate or bidentate corolla. Central florets 6–20, bisexual, carpogenous, tubular; corolla campanulate, ca. 0.5 mm, with 4-dentate limb. Style slightly prominent from corolla tube, flat; stigma bipartite, with short lobes, \pm linear, ca. 0.12×0.08 mm, flattened blunt, with mammillae. Stamens 4, attached to middle of corolla tube; anthers connate into tube, surrounding style, fine, subglobose, ca. 0.25×0.12 mm, subtruncate above, basally with very short entire appendages, not united in pairs; filaments ca. 0.25 mm, flat, glabrous. Ovary oblong, ca. 0.5×0.2

mm, adnate to 2 touching paleae or to 1 palea of receptacle, more rarely not adnate, with sparse pubescence of glandular hairs. Achenes 0.5–1 mm, terete, smooth, crowned with remaining corolla, with very fine globose glands and sparse elongated glandular hairs, forked at ends and horizontally spreading, with upright hairs adaxially; marginal achenes slightly recurved, middle erect. Fl. Jul–Aug.

Silty, flooded, and sandy riverbanks or silty shallows of rivers. Heilongjiang, Jilin [Russia].