

19. DYSPHANIA R. Brown, Prodr. 411. 1810.

刺藜属 ci li shu

Neobotrydium Moldenke; *Roubieva* Moquin-Tandon; *Teloxys* Moquin-Tandon.

Herbs annual or short-lived perennial, usually aromatic, covered with stalked, glandular trichomes and/or sessile or sessile glands and/or uniseriate, multicellular trichomes, sometimes glabrescent. Stems branched, rarely nearly simple, erect, ascending, decumbent, or prostrate. Leaves alternate; leaf blade simple, margin entire, dentate, serrate, or pinnately lobed. Inflorescences terminal and axillary, loosely flowered, simple or compound cymes, spikelike, condensed cymes, or dense, axillary glomerules; bracts absent, but glomerules often subtended by reduced leaves ("leaflike bracts"). Flowers bisexual (rarely functionally unisexual). Perianth segments 1–5, usually united only at base or nearly free, in some species fused to form a sac surrounding utricle. Stamens 1–5. Ovary superior, unilocular with 1 basal ovule; styles 1–3, stigmas 1–3, filiform. Fruit a utricle, often enclosed in perianth; pericarp membranous, non-adherent. Seed 1, horizontal or vertical, subglobose to lenticular; embryo annular or incompletely so, surrounding copious perisperm; radicle inferior or centrifugal.

About 30 species: worldwide, mostly from tropics and subtropics to warm-temperate zones; four species (one introduced) in China.

The generic name *Dysphania* was traditionally applied to some 7–10 species endemic to Australia. Its taxonomic position, as understood by various authors, was very obscure—from a mere section in *Chenopodium* to the sole genus of a separate family Dysphaniaceae—but its close affinity to "glandular" species of *Chenopodium* s.l. is now evident.

Here, the genus *Dysphania* is accepted in a redefined circumscription, including also all other "glandular" taxa previously treated in *Chenopodium* subgen. *Ambrosia* A. J. Scott, or segregated in genera *Neobotrydium* Moldenke, *Roubieva* Moquin-Tandon, *Teloxys* Moquin-Tandon, etc. *Dysphania* in its traditional circumscription has no distinct characters clearly separating it from other "glandular" species previously placed in *C.* subgen. *Ambrosia* (see Mosyakin & Clemants, Ukrayins'k. Bot. Zhurn. 59: 380–385. 2002).

- 1a. Inflorescence paniculate or spicate 4. *D. ambrosioides*
- 1b. Inflorescence a compound dichasium.
 - 2a. Terminal branches of inflorescence without flowers, ending with acicular, sterile branches 1. *D. aristata*
 - 2b. Terminal branches of inflorescence without acicular, sterile branches.
 - 3a. Plants (especially adaxially on leaves and perianth) with both articulated, stalked glands and sessile (rarely subsessile) glands; perianth segments abaxially longitudinally keeled or crested, spreading in fruit 2. *D. schraderiana*
 - 3b. Plants with sessile (rarely subsessile) glands; perianth segments not abaxially keeled or with a weak keel, erect in fruit (N Xinjiang) 3. *D. botrys*

1. *Dysphania aristata* (Linnaeus) Mosyakin & Clemants, Ukrayins'k. Bot. Zhurn. 59: 383. 2002.

Chenopodium aristatum Linnaeus, Sp. Pl. 1: 221. 1753; *C. minimum* W. Wang & P. Y. Fu; *C. sinense* hort ex Moquin-Tandon; *C. tibeticum* A. J. Li; *Teloxys aristata* (Linnaeus) Moquin-Tandon.

刺藜 ci li

Herbs annual, often tinged purple-red, usually appearing conic, 10–40 cm tall, glabrous. Stem erect, terete or with colored ribs, glabrous or slightly glandular pubescent, much branched. Petiole short; leaf blade linear to narrowly lanceolate, to 7 × 1 cm, base attenuate, merging into petiole, margin entire to indistinctly erose-dentate, apex acute to acuminate; midvein yellow-white. Compound dichasia borne in leaf axils from near base of plant and on upper part of branches, apical branchlets of inflorescence acicular. Flowers not pedunculate, bisexual. Perianth segments 5, spreading in fruit, narrowly elliptic, slightly fleshy abaxially, margin membranous, apex obtuse or abruptly acute. Utricle depressed, orbicular; pericarp pellucid, adnate to seed. Seed horizontal, depressed, ca. 1 mm in diam., rim margin truncate or with a rib. Fl. Aug–Sep, fr. Oct.

A weed, often in fields, sometimes in wastelands and on slopes. Hebei, Heilongjiang, Henan, Jilin, Nei Mongol, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Xinjiang [Asia, SE Europe; introduced in North America].

Several "microspecies" and infraspecific entities were proposed within this species (s.l.). These segregate taxa differ mostly in such variable characters as size of plant, degree of pubescence (glabrous to sparsely glandular pubescent), leaf shape (margin entire to serrate-dentate), and occasional presence of flowers on some terminal branches. These characters show no clear geographic pattern and thus cannot be considered specifically diagnostic. For example, glandular pubescent plants with an erose-serrate leaf margin (described as *Chenopodium tibeticum*) occur throughout the range of *Dysphania aristata*.

2. *Dysphania schraderiana* (Roemer & Schultes) Mosyakin & Clemants, *Ukrayins'k. Bot. Zhurn.* 59: 383. 2002.

菊叶香藜 ju ye xiang li

Chenopodium schraderianum Roemer & Schultes, *Syst. Veg.* 6: 260. 1820; *Ambrina foetida* Moquin-Tandon; *C. foetidum* Schrader (1808), not Lamarck (1778); *C. foetidum* subsp. *tibeticum* Murr; *Teloxys foetida* Kitagawa; *T. schraderiana* (Roemer & Schultes) W. A. Weber.

Herbs annual, 20–60 cm tall, with a strong odor, covered with articulated, glandular hairs and sessile (rarely subsessile) glands. Stem erect, green striate, usually branched. Petiole 2–10 mm; leaf blade oblong, 2–6 × 1.5–3.5 cm, abaxially glabrous or slightly hairy when young, adaxially pubescent with articulated hairs and yellow, granular glands, rarely almost glabrous, base attenuate, margin pinnately lobed to parted, apex obtuse or acuminate, sometimes mucronate. Compound dichasia axillary. Flowers bisexual. Perianth 1–1.5 mm in diam.; segments 5, spreading in fruit, ovate to narrowly so, longitudinally keeled or crested abaxially, pubescent and with sessile glands, margin narrowly membranous. Stamens 5; filaments flattened; anthers subglobose. Utricle depressed globose; pericarp membranous. Seed horizontal, red-brown or black, sublustrous, 0.5–0.8 mm in diam., finely lineate, rim margin obtuse; embryo semi-annular, surrounding perisperm. Fl. Jul–Sep, fr. Sep–Oct.

Forest margins, meadows, riversides, around houses, sometimes in fields. Gansu, Liaoning, Nei Mongol, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang, Yunnan [Africa, SW Asia, S Europe; naturalized in North America and locally elsewhere].

For practical and nomenclatural reasons, *Dysphania schraderiana* is accepted here in a broad sense. Probably most (or all) records of this species from China belong to a distinct Asian entity (closely related species or subspecies) known as *Chenopodium nepalense* Link ex Colla (*Herb. Pedem.* 5: 571. 1836; *C. multiflorum* Moquin-Tandon), for which no combination in *Dysphania* is yet available. Judging from its characters, this plant occupies a transitional position between *D. botrys* and *D. schraderiana*. According to Uotila (in *Fl. Iranica*), *C. nepalense* differs from *D. schraderiana* s.str. in having perianth segments rather weakly keeled (not distinctly crested), and the keel bearing simple, eglandular hairs (in *D. schraderiana* s.str. the perianth segments are abaxially glabrous or subglabrous). Taxonomic relationships and distributional patterns of these related species or infraspecific taxa need clarification.

3. *Dysphania botrys* (Linnaeus) Mosyakin & Clemants, *Ukrayins'k. Bot. Zhurn.* 59: 383. 2002.

香藜 xiang li

Chenopodium botrys Linnaeus, *Sp. Pl.* 1: 219. 1753; *Ambrina botrys* (Linnaeus) Moquin-Tandon.

Herbs annual, yellow-green, 20–50 cm tall, with a strong odor, covered with stalked, glandular hairs. Stem erect, mostly branched from base. Petiole 2–10 mm; leaf blade oblong, 2–4 × 1–2 cm, base cuneate, margin pinnately parted, apex subobtusely, sometimes mucronulate; lobes obtuse, usually obtusely toothed; upper leaves lanceolate, smaller, margin entire. Compound dichasia axillary, forming tower-shaped panicles on upper branches. Flowers bisexual. Perianth segments (4 or)5, erect in fruit, yellow-green, oblong, abaxially glandular, not longitudinally keeled or only weakly keeled, margin membranous, apex subobtusely or acuminate. Stamens 1–3. Stigmas 2, filiform. Utricle depressed globose; pericarp whitish, membranous. Seed horizontal, black, sublustrous, depressed, 0.75–1 mm in diam., almost unpitted, rim margin obtuse, slightly sulcate. Fl. Jul–Aug, fr. Aug–Sep.

Valleys, river terraces, around houses, roadsides. N Xinjiang [N Africa, C and SW Asia, S Europe; locally naturalized in other subtropical to warm-temperate regions].

4. *Dysphania ambrosioides* (Linnaeus) Mosyakin & Clemants, *Ukrayins'k. Bot. Zhurn.* 59: 382. 2002.

土荆芥 tu jing jie

Chenopodium ambrosioides Linnaeus, *Sp. Pl.* 1: 219. 1753; *Ambrina ambrosioides* (Linnaeus) Spach, nom. illeg.; *Atriplex ambrosioides* (Linnaeus) Crantz; *Blitum ambrosioides* (Linnaeus) G. Beck.

Herbs annual or perennial, 50–80 cm tall, with strong odor. Stem erect, much branched, striate, obtusely ribbed; branches usually slender, pubescent and articulated villous, sometimes subglabrous. Petiole short; leaf blade oblong-lanceolate to lanceolate, abaxially with scattered glands, slightly hairy around veins, adaxially glabrous, base attenuate, margin sparsely and irregularly coarsely serrate, apex acute or acuminate; lower leaves ca. 15 × 5 cm, upper ones gradually reduced and margin subentire. Flowers borne in upper leaf axils, usually 3–5 per glomerule, bisexual and female. Perianth segments (3 or)5, usually nearly closed in fruit. Stamens 5; anthers ca. 0.5 mm. Style obscure; stigmas 3(or 4), filiform, exerted from perianth. Utricle enclosed by perianth, depressed globose. Seed horizontal or oblique, black or dark red, sublustrous, ca. 0.7 mm in diam., glabrous, rim margin obtuse. Fl. and fr. over a lengthy period.

Naturalized; often cultivated for medicine in N China. Fujian, Guangdong, Guangxi, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [native to tropical America; now widely naturalized in

tropical, subtropical, and warm-temperate regions of the world].

Dysphania ambrosioides s.l. is a taxonomically complicated aggregate of several closely related segregate "microspecies" and/or infraspecific taxa. Judging from the herbarium material available, there are several entities naturalized in China. However, their taxonomy and distribution in the Flora area are not well understood, and because of that they are not discussed here.

