

69. MENTHA Linnaeus, Sp. Pl. 2: 576. 1753.

薄荷属 bo he shu

Herbs annual or perennial, aromatic, often rhizomatous or stoloniferous. Upper leaves sessile or subsessile; blade margin dentate, serrate, or crenate. Verticillasters (2–6)- to many flowered; floral leaves similar to stem leaves or reduced; bracts lanceolate to linear, ± distinct. Flowers bisexual or pistillate. Calyx funnelform to campanulate, 10–13-veined, throat glabrous or hairy, limb equally 5-toothed or 2-lipped, upper lip 3-toothed, lower lip 2-toothed. Corolla funnelform, ± regular or slightly irregular; tube generally included, throat slightly dilated or saccate in front, limb 4-lobed; lobes equal, entire, upper lobe slightly wider, emarginate or 2-lobulate. Stamens 4, subequal, divaricate, erect, exerted in bisexual flowers, included and often rudimentary in pistillate flowers, posterior 2 slightly longer than anterior 2; filaments glabrous; anther cells 2, parallel. Style exerted, apex equally 2-cleft. Nutlets ovoid, dry, smooth or slightly tuberculate, apex rounded, rarely hairy.

About 30 species: mainly in north temperate regions, a few in the Southern Hemisphere; six native and six cultivated species in China.

A number of species are widely cultivated for their aromatic properties and many cultivars have been developed.

- 1a. Calyx tubular or campanulate-tubular, slightly curved, 2-lipped; teeth of upper lip lanceolate-triangular, shorter than subulate teeth of lower lip; tube hairy at throat inside, closed in fruit, hirtellous outside, conspicuously veined; corolla saccate at throat in front 12. *M. pulegium*
- 1b. Calyx broadly campanulate or funnelform-campanulate, straight, regular; teeth ± equal; tube glabrous at throat, spreading in fruit, obscurely veined, not hirtellous; corolla throat slightly dilated, not saccate.
 - 2a. Verticillasters widely spaced, inserted in leaf axils, sometimes along entire stem; leaves longer than verticillasters; corolla throat hairy.
 - 3a. Stems much branched, puberulent at apex and along angles at base; leaves 3–5(–7) cm, sparsely coarsely dentate-serrate; calyx teeth puberulent; stamens and style usually slightly exerted 1. *M. canadensis*
 - 3b. Stems unbranched or branched at apex, densely pubescent; leaves (2.5–)4–9 cm, irregularly shallow serrate; calyx teeth pilose; stamens and style usually much exerted 2. *M. sachalinensis*
 - 2b. Verticillasters in leafless, terminal, capitate or spicate inflorescences, upper ones contiguous; floral leaves linear or nearly similar to stem leaves; corolla throat hairy or glabrous inside.
 - 4a. Verticillasters 1–3, in short, capitate, rarely elongated inflorescences; basal verticillasters sometimes remote from upper, axillary, with large floral leaves; calyx tubular; corolla hairy inside; nutlets glabrous 3. *M. dahurica*
 - 4b. Verticillasters in spicate continuous or interrupted inflorescences; floral leaves linear or similar to stem leaves, generally minute; calyx campanulate; corolla throat glabrous inside; nutlets apex hairy.
 - 5a. Leaves crisped, ovate to ovate-lanceolate, incised-serrate; calyx teeth slightly close together 10. *M. crispata*
 - 5b. Leaves not crisped; calyx teeth not close together in fruit.
 - 6a. Leaves glabrous or subglabrous, dark green or shiny green.
 - 7a. Adaxial stem leaves sessile or subsessile; inflorescences slender, 4–10 cm, interrupted; plants shiny green 9. *M. spicata*
 - 7b. Adaxial stem leaves petiolate; inflorescences robust, interrupted at base; plants dark green.
 - 8a. Stem leaves lanceolate to ovate-lanceolate, apex acute; calyx teeth ciliate 7. *M. ×piperita*
 - 8b. Stem leaves ovate to elliptic, apex obtuse; calyx teeth not ciliate 8. *M. citrata*
 - 6b. Leaves hairy at least abaxially.
 - 9a. All leaves sessile, corrugate, margin crenate or crenate-serrate 11. *M. suaveolens*
 - 9b. Lower leaves sometimes petiolate, leaves not corrugate when all sessile, not crenate or crenate-serrate.
 - 10a. Plants densely gray tomentose, much branched 6. *M. vagans*
 - 10b. Plants not entirely densely gray tomentose, not much branched.
 - 11a. Leaves mostly sessile, coarsely serrate-dentate, dark green or green and hairy, sometimes abaxially densely appressed tomentose-pubescent; inflorescence robust; pedicel tomentose-villous; calyx as long as corolla tube, spreading hairy, teeth as long as tube; corolla ca. 4 mm 4. *M. longifolia*
 - 11b. Leaves short petiolate or subsessile, remotely shallow unequal dentate, glaucous, finely minutely tomentose or crisped tomentose; inflorescences rather slender, sometimes interrupted; pedicel appressed pubescent; calyx shorter than corolla tube, appressed pubescent, teeth 3/4 as long as tube; corolla 4–5 mm 5. *M. asiatica*

1. *Mentha canadensis* Linnaeus, Sp. Pl. 2: 577. 1753.

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Mentha arvensis Linnaeus var. *canadensis* (Linnaeus) Maximowicz; *M. arvensis* f. *chinensis* Debeaux; *M. arvensis* subsp. *haplocalyx* (Briquet) Briquet; *M. arvensis* var. *haplocalyx* (Briquet) Briquet; *M. haplocalyx* Briquet; *M. haplocalyx* Briquet f. *alba* X. L. Liu & X. H. Guo; *M. pedunculata* Hu & Tsai.

Plants rhizomatous, perennial. Stems erect, 30–60 cm, puberulent, much branched. Petiole 2–10 mm; leaf blade ovate-lanceolate to oblong, 3–5(–7)×0.8–3 cm, puberulent, base cuneate to rounded, margin remotely coarse dentate-serrate above base, apex acute. Verticillasters axillary, globose, ca. 1.8 cm in diam.; peduncle 0–3 mm. Pedicel slender, 2.5 mm. Calyx tubular-campanulate, ca. 2.5 mm, puberulent, glandular, obscurely 10-veined; teeth narrowly triangular-subulate, apex acuminate, ca. 1 mm. Corolla

purplish or white, ca. 4 mm, puberulent; upper lobe largest, 2-lobulate; other lobes subequal, oblong, obtuse. Stamens ca. 5 mm. Nutlets yellow-brown, small pitted. Fl. Jul-Sep, fr. Oct.

Wet areas; 0–3500 m. In all provinces [Cambodia, Japan, Korea, Laos, Malaysia, Myanmar, Russia, Thailand, Vietnam; North America].

Source of mint oil. Used in cigarettes, pharmaceuticals, and oral preparations.

2. *Mentha sachalinensis* (Briquet ex Miyabe & Miyake) Kudô, J. Coll. Sci. Imp. Univ. Tokyo 43(10): 47. 1921.

东北薄荷 dong bei bo he

Mentha arvensis Linnaeus subsp. *haplocalyx* Briquet var. *sachalinensis* Briquet ex Miyabe & Miyake, Fl. Saghalin 361. 1916; *M. arvensis* var. *piperascens* Holmes; *M. sachalinensis* (Briquet) Kudô var. *arguta* Kitagawa.

Plants rhizomatous, perennial. Stems erect, 50–100 cm, striate, densely retrorse pubescent along angles, little branched. Petiole 0.5–1.5 cm; leaf blade elliptic-lanceolate, (2.5–)4–9×1–3.5 cm, glandular, ciliate, puberulent on veins, base attenuate, margin shallow serrate, apex acute. Verticillasters axillary, many flowered, globose, to 1.5 cm in diam., short pedunculate; floral leaves subsessile, sublancoolate; bracteoles linear to linear-lanceolate, 3–4 mm, ciliate. Pedicel ca. 2 mm, glabrous. Calyx campanulate, ca. 1.5 mm, densely pilose, yellow glandular, mouth and teeth pilose inside; teeth narrowly triangular, ca. 1.5 mm, apex acute. Corolla purplish or purplish red, ca. 4 mm, pilose; lobes ovate-oblong, upper emarginate. Anterior stamens slightly longer, ca. 5 mm. Nutlets yellow-brown, oblong, glabrous, ribbed. Fl. Jul-Aug, fr. Sep.

Wet grasslands near rivers, lakes; 200–1100 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Japan, Russia].

3. *Mentha dahurica* Fischer ex Benth, Labiat. Gen. Spec. 181. 1836.

兴安薄荷 xing an bo he

Plants rhizomatous, perennial. Stems erect, 30–60 cm, rarely branched, base leafless, retrorse puberulent, sometimes purplish. Petiole 7–10 mm; leaf blade ovate to oblong, ca. 3×1.3 cm, glabrous or sparsely puberulent, abaxially glandular on veins, base broadly cuneate to rounded, margin shallow crenate-serrate to subentire, apex acute to obtuse. Verticillasters 5–13-flowered, generally 2, in terminal capitate inflorescences longer than floral leaves; peduncle 2–10 mm, puberulent; bracteoles linear, curved upward. Pedicel 1–3 mm. Calyx tubular-campanulate, ca. 2.5 mm, veins conspicuous, puberulent; teeth broadly triangular, ca. 0.5 mm, apex acute; fruiting calyx broadly campanulate. Corolla reddish or rose purplish, ca. 5 mm, glabrous, throat puberulent, gradually dilated from base; lobes circular, ca. 1 mm, obtuse, upper lobe conspicuously 2-lobulate. Anterior stamens equal to slightly longer than corolla. Ovary brown, glabrous. Fl. Jul-Aug.

Meadows; 600 m. Heilongjiang, Jilin, Nei Mongol [Japan, Russia]

4. *Mentha longifolia* (Linnaeus) Hudson, Fl. Angl. 221. 1762.

欧薄荷 ou bo he

Mentha spicata Linnaeus var. *longifolia* Linnaeus, Sp. Pl. 2: 576. 1753; *M. sylvestris* Linnaeus, 1763.

Plants rhizomatous, perennial. Stems erect, to 1 m, much branched, whitish, striate, retrorse short tomentose-villous. Leaf blade ovate to oblong-lanceolate, to 6×1.5 cm, appressed tomentose-villous, subglabrescent, base rounded to shallow cordate, margin coarsely irregular serrate-dentate, apex acute. Verticillasters in cylindrical terminal spikes 3–8 cm, lower ones somewhat lax; floral leaves linear-subulate, mostly shorter than verticillasters. Pedicel to 2 mm. Calyx campanulate, ca. 2 mm, tomentose-villous, obscurely 5-veined; teeth linear-subulate, ca. 1 mm, close together in fruit. Corolla purplish, ca. 4 mm, sparsely puberulent; tube ca. 2 mm, gradually dilated upward; lobes oblong, obtuse; upper lobe oblong-ovate, emarginate. Ovary glabrous. Fl. Jul-Sep.

Nanjing Shi, Shanghai Shi, and other cities [Russia; SW Asia, Europe].

Cultivated in China. A polymorphic aromatic herb used medicinally.

Mentha asiatica, *M. vagans*, and the Himalayan *M. royleana* Benthall all are very closely related to and perhaps doubtfully distinct from *M. longifolia*. Further work is needed to fully assess their correct status.

5. *Mentha asiatica* Borissova-Bekrjasheva, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 16: 280. 1954.

假薄荷 jia bo he

Herbs rhizomatous, perennial. Stems erect, (30–)50–120(–150) cm, few branched, densely minutely tomentose. Petiole 0.1–0.5 mm; leaf blade oblong or elliptic to oblong-lanceolate, 3–8×1–2.5 cm, sometimes folded and curved downward, sometimes glaucous, appressed crisped minutely tomentose, glandular, base rounded to broadly cuneate, margin remotely unequal dentate, apex acute. Verticillasters in terminal cylindrical spikes 3–8×1–1.4 cm; bracts linear to subulate, 5–7 mm; bracteoles subulate, nearly as long as calyx. Pedicel ca. 1 mm. Calyx ± purple-red, campanulate to funnellform, 1.5–2 mm, appressed pubescent, obscurely veined; teeth linear, close together in fruit. Corolla purple-red, 4–5 mm, pilose, tube gradually dilated, lobes ca. 1 mm; upper lobe oblong-ovate, ca. 2×1.5 mm, apex emarginate. Nutlets brown, ca. 1 mm, apex pilose, pitted. Fl. Jul-Aug, fr. Aug-Oct.

Riverbanks, landfills, waste areas, wet valleys; 0–3100 m. Sichuan, Xinjiang, Xizang [Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Uzbekistan; SW Asia].

6. *Mentha vagans* Borissova-Bekrjasheva, Bot. Mater. Gerb. Bot. Inst. Komarova Akad. Nauk SSSR 16: 282. 1954.

灰薄荷 hui bo he

Plants rhizomatous, perennial. Stems erect, 40–80 cm, densely tomentose, glabrescent, purple-red, base with exfoliating bark; branches many, long, divaricate. Petiole ca. 1 mm; leaf blade elliptic to oblong, 1–2.5 cm×5–13 mm, generally shorter than internodes, sometimes curved-conduplicate, densely gray tomentose, base rounded to shallow cordate, margin serrate-dentate, apex acute to subobtuse. Verticillasters in cylindrical spikes 2–2.5 cm×ca. 8 mm, lower spikes ± separated; bracts filiform. Pedicel ca. 1 mm. Calyx campanulate, to 2 mm, crisped pilose, obscurely 5-veined; teeth lanceolate, ca. 0.5 mm, apex spinescent, close together in fruit. Corolla 3–3.5 mm, lobes ovate, subequal, pilose; upper lobe longer, oblong-ovate, ca. 1.5 mm, emarginate. Nutlets ovoid, ca. 0.6×0.5 mm, brown, sparsely hairy, pitted. Fl. Jul-Aug.

Riverbanks. Xinjiang [Tajikistan, Turkmenistan; SW Asia].

7. *Mentha × piperita* Linnaeus, Sp. Pl. 2: 576. 1753.

辣薄荷 la bo he

Stems erect-ascending, 30–100 cm tall, branched, purple-red, glabrous or angles sparsely minutely hispid. Petiole 1–2 mm, purple; leaf blade lanceolate to ovate-lanceolate, 2.5–3×0.8–2 cm, glabrous or abaxially minutely hispid on veins, densely glandular, base rounded to shallow cordate, margin unequally acute serrate, apex acute. Verticillasters in cylindric terminal spikes, interrupted at base; bracts linear-lanceolate, slightly longer than calyx, ciliate. Pedicel ca. 1 mm. Calyx tubular, tinged purple, puberulent or subglabrous, glandular outside; teeth 5, linear-subulate, ca. 1 mm, ciliate. Corolla white, tinged red on lobes, ca. 4 mm, tube nearly as long as calyx; lobes subequal, upper emarginate. Nutlets brown, obovoid, ca. 0.7 mm, apex glandular. Fl. Jul, fr. Aug.

Beijing Shi, Nanjing Shi, and other cities [India, Japan, Kyrgyzstan, Russia, Turkmenistan; SW Asia, Europe, North America].

Cultivated in China. Source of peppermint oil, an essential oil used for flavoring confectionery, candies, liqueur, and chewing gum. The dried plant is used medicinally as a carminative, nervine, and stimulant, while menthol is used in nasal sprays.

A hybrid: *Mentha aquatica* Linnaeus×*M. spicata* Linnaeus.

8. *Mentha citrata* Ehrhart, Beitr. Naturk. 7: 150. 1792.

柠檬留兰香 ning meng liu lan xiang

Mentha × piperita Linnaeus var. *citrata* (Ehrhart) Briquet.

Herbs perennial, bearing leafy stolons, glabrous or subglabrous throughout. Petiole of middle stem leaves ca. 2 mm; leaf blade broadly ovate to elliptic, 2–4×1.5–3 cm, base rounded to shallow cordate, margin remotely serrate, apex obtuse; upper leaves reduced, sometimes sublanceolate, apex acute. Verticillasters in terminal spikes 2.5–4 cm; bracts linear-lanceolate, shorter than verticillasters. Pedicel ca. 1 mm. Calyx tubular, ca. 1.5 mm, glandular; teeth linear-subulate, ca. 0.5 mm. Corolla purplish, ca. 4 mm, tube ca. 2.5 mm. Fl. Jul-Aug.

Beijing Shi, Hangzhou Shi, Nanjing Shi, and other cities [Europe].

Cultivated in China.

Perhaps best regarded as a cultivar of *Mentha × piperita*.

9. *Mentha spicata* Linnaeus Sp. Pl. 2: 576. 1753.

留兰香 liu lan xiang

Mentha spicata var. *viridis* Linnaeus; *M. viridis* (Linnaeus) Linnaeus.

Herbs stoloniferous. Stems erect, 40–130 cm, glabrous or subglabrous, striate. Leaves sessile or subsessile, ovate-oblong to oblong-lanceolate, 3–7×1–2 cm, base broadly cuneate to rounded, margin irregularly serrate, apex acute. Verticillasters in cylindric terminal spikes 4–10 cm, spikes interrupted at base; bracteoles linear, 5–8 mm. Pedicel ca. 2 mm. Calyx campanulate, ca. 2 mm, glandular, obscurely 5-veined; teeth triangular-lanceolate, ca. 1 mm. Corolla purplish, ca. 4 mm, glabrous, tube ca. 2 mm; lobes subequal, apex emarginate. Ovary brown, glabrous. Fl. Jul-Sep.

Guangdong, Guangxi, Guizhou, Hebei, Hubei, Jiangsu, Sichuan, Xizang, Yunnan, Zhejiang [Russia, Turkmenistan; Africa, SW Asia; Europe].

Cultivated in China. Source of spearmint oil, an essential oil used for flavoring candies, toothpaste, chewing gum. Dried tops and leaves are used medicinally as a stimulant, carminative, and nervine. It contains carvone.

10. *Mentha crispata* Schrader ex Willdenow, Enum. Pl. 608. 1809.

皱叶留兰香 zhou ye liu lan xiang

Herbs rhizomatous. Stems erect, 30–60 cm, purplish, glabrous. Leaves sessile or subsessile, ovate to ovate-lanceolate, 2–3×1.2–2 cm, papery, base rounded to shallow cordate, margin serrate, apex acute. Verticillasters in terminal spikes 2.5–3×ca. 1 cm, continuous or ± interrupted at base; bracts linear-lanceolate, slightly longer than calyx. Pedicel ca. 1 mm. Calyx campanulate, ca. 1.5 mm, subglabrous, glandular, obscurely 5-veined; teeth triangular-lanceolate, ca. 0.1 mm, ciliate. Corolla purplish, ca. 3.5 mm, glabrous, tube ca. 2 mm; lobes subequal, apex emarginate. Ovary brown, glabrous. Nutlets brown, triquetrous, ovoid, ca. 0.7 mm, sparsely glandular.

Beijing Shi, Hangzhou Shi, Kunming Shi, Nanjing Shi, Shanghai Shi [Russia; Europe].

Cultivated in China. Source of German spearmint oil. Young shoots and leaves edible.

A form/cultivar of *M. spicata* Linnaeus.

11. *Mentha suaveolens* Ehrhart, Beitr. Naturk. 7: 149. 1792.

圆叶薄荷 yuan ye bo he

Herbs perennial, rhizomatous, stoloniferous. Stems erect, 30–80 cm, striate, crisped villous, pyramidally branched. Leaves usually sessile, circular to oblong-ovate, 2–4.5×1.5–3 cm, villous, base cordate, margin crenate or crenate-serrate, apex obtuse. Verticillasters in terminal, dense cylindric spikes 2–4×ca. 0.6 cm, lower 1 or 2 ± widely spaced; bracts lanceolate, ca. 3 mm, crisped. Pedicel ca. 1 mm, glabrous. Calyx broadly campanulate, ca. 2.5 mm, pubescent, subglobose, dilated in fruit, not constricted at throat, obscurely veined; teeth lanceolate-subulate, ca. 1 mm. Corolla white, purplish, bluish or purple, ca. 2.5 mm, glabrous, tube ca. 1.5 mm; lobes subequal, upper emarginate. Ovary glabrous. Nutlets unknown.

Beijing Shi, Kunming Shi, Nanjing Shi, Shanghai Shi, Yunnan (Lijiang Xian) [Europe].

Cultivated in China.

Most widely known as *Mentha rotundifolia* (Linnaeus) Hudson, but the holotype of that species has been shown to be a different plant of hybrid origin.

12. *Mentha pulegium* Linnaeus, Sp. Pl. 2: 577. 1753.

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Pulegium vulgare Miller.

Herbs. Stolons with scalelike leaves. Stems ascending, rarely erect or trailing, 15–30(–50) cm, hirtellous, striate, tinged red-purple, much branched, internodes generally longer than leaves. Leaf blade ovate-orbicular to ovate, 0.8–1.3 cm×5–7 mm, herbaceous, puberulent, base rounded, margin entire or sometimes remotely crenate, apex obtuse. Verticillasters 10–30-flowered, globose, 1–1.5 cm in diam., few, widely spaced; floral leaves sessile, recurved, shorter than verticillasters. Pedicel 2–3 mm. Calyx tubular, 2-lipped, 2.5–3 mm, hirtellous, glandular, throat bearded, ± conspicuously 10-veined, tube ca. 1.5 mm; upper lip 3-toothed, teeth lanceolate-triangular, ca. 1 mm; lower lip 2-toothed, teeth subulate, ca. 1.5 mm. Corolla rose, purple or rarely white, ca. 4.5 mm, puberulent; tube ca. 3 mm, abruptly saccate at apex; lobes oblong, ca. 1.5 mm, entire, upper lanceolate. Ovary glabrous. Fl. Sep.

Beijing Shi, Nanjing Shi, and other cities [Russia, Tajikistan, Turkmenistan; SW Asia, Europe].

Cultivated in China. Source of oil of pennyroyal. Employed in the manufacture of soaps and synthetic menthol. Used medicinally for flatulent colic, stomach ailments, and as a diaphoretic.

