

3. PHRYMA L. Lopseed

Herb; leaves opposite, ovate, toothed; flowers hypogynous, perfect, opposite on axis of terminal and usually also axillary spikes; calyx 5-toothed, 2-lipped; corolla rose, pale purple, or white, about 7 mm long, 2-lipped; stamens 4, two of them longer, inserted on corolla; carpels 2, united; style 1, stigma 2-lobed; locule and ovule 1; fruit indehiscent, in reflexed persistent calyx.

1. *Phryma leptostachya* L.

Lopseed

Stems erect, finely pubescent; inflorescences elongated spikes; corolla 2-lipped, white to purple; calyx 2-lipped, widely divergent from inflorescence axis in flower, strongly reflexed in fruit.

REFERENCES: Riddell 1834:157 (dense and shady woods); Sullivant 1840:37; Craig 1890:95 (common in the woods and about the island); Selby & Craig 1890:14; Cooperrider 1995:375 (illus. p. 374).

HERBARIUM RECORDS: 27 Jul 1882—Cols., *W. Green*; Jul 1888—Cols., *Craig*; 24 Jul 1890—Cols., *Hine*; 30 Jul 1896—Cols., *Hendrixson*; 9 Jul 1982—Highbanks Metro Park (Franklin & Delaware Cos.), *G. Moore* 223; 14 Jul 1982—Blendon Woods, *Owens*; 26 Jul 1986—Highbanks Metro Park (Delaware Co.), damp woods, *Morawetz* 23 (OS, OWU); 16 Jul 1990—Whetstone Park of Roses, along path behind Blenheim Rd. bus turn around, Clinton Twp., *Lowden* 4452.

LAMIACEAE, Mint Family

Usually aromatic herbs or rarely shrubs; stems square; leaves opposite; flowers hypogynous, perfect, in whorls (or rarely solitary) in axils of foliage leaves; or in axils of bracts, then whorls or solitary flowers in spikes or racemes; or whorls 1-few at or near summit of stem; calyx usually 5-lobed or -toothed, sometimes 2-lipped; corolla zygomorphic, rarely almost regular, of 5 petals, usually 5-lobed or sometimes apparently 4-lobed, usually 2-lipped, upper lip usually 2-lobed, lower lip usually 3-lobed; stamens 4 or 2, on the corolla, when 4, usually of 2 lengths, when 2, the other pair sometimes present as vestiges; pollen-sacs parallel or their bases divergent, in extreme condition the sacs lying end to end in a straight line perpendicular to filament; carpels 2, united, ovary 4-lobed, 1 ovule in each lobe; style 1, bifid at tip; fruit enclosed in persistent calyx, separating into 4 one-seeded nutlets; in genera Nos. 1-3, style terminal, nutlets laterally attached; in the other genera, style basal, nutlets basally attached. (Labiatae, nom. altern.)

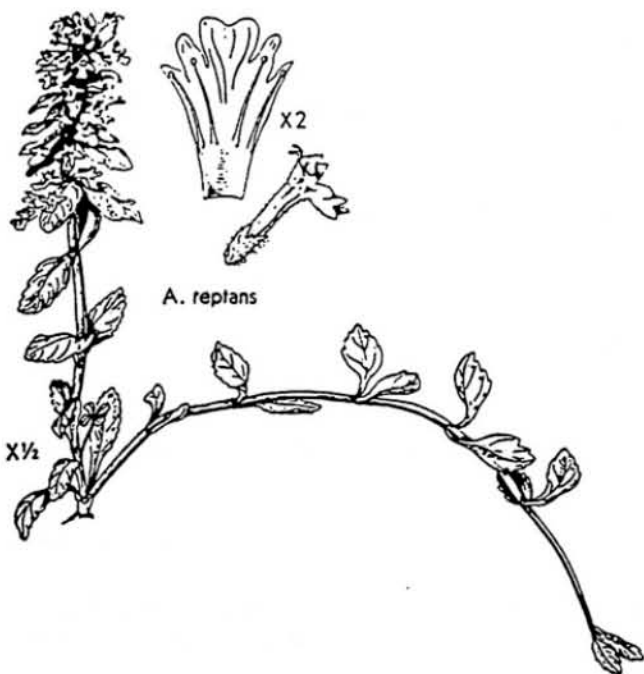
Suggestion. To find whether inner (upper) or outer (lower) pair of stamens is the longer, cut corolla lengthwise along median line of lower lip, then separate cut edges exposing stamens. The two stamens in the middle are the inner (upper) pair; the two on the outside are the outer (lower) pair.

The genus *Thymus* L. (Eurasian) is included in the key below. There is a cultivated collection of thymes at the Inniswood Gardens.

- a Anther-bearing stamens 4.
 - b Calyx with a protuberance on upper side, 2-lipped; corolla 2-lipped. **4. SCUTELLARIA**
 - b' Calyx without a protuberance on upper side.
 - c Corolla nearly equally toothed or lobed, not or scarcely 2-lipped.
 - d Leaf-blades 1-3-nerved, nearly entire; pollen-sacs divergent. **3. ISANTHUS**
 - d' Leaf-blades serrate or dentate, pinnately veined; pollen-sacs parallel.
 - e Flowers in clusters in axils of leaves or bracts, clusters sometimes in spikes or heads; corolla usually 4-lobed. **10. MENTHA**
 - e' Flowers solitary in axils of bracts, in spikelike racemes; corolla 5-lobed; calyx 2-lipped in fruit. **12. PERILLA**
 - c' Corolla appearing 1-lipped, upper lip very short, sometimes split. (See c'.)
 - f Corolla with short 2-lobed upper lip, lower lip large and spreading; calyx nearly regular, lobes equaling tube. **1. AJUGA**
 - f' Corolla split on upper side, stamens exerted in the cleft, hence all lobes below stamens, corolla thus appearing to have 5-lobed lower lip but no upper lip; calyx somewhat 2-lipped, toothed. **2. TEUCRIUM**
 - c'' Corolla more or less 2-lipped.

- g Stamens included in corolla-tube; calyx regular, spine-tipped teeth becoming outwardly curved; canescent. **5. MARRUBIUM**
- g' Stamens exceeding corolla-tube but sometimes not corolla-tip.
- h Upper lip of corolla straight, not concave or galeate; outer pair of stamens the longer, rarely all nearly equal.
 - i Flowers in dense headlike clusters at end of stem or of branches (rarely a few clusters in upper axils).
 - j Heads several to many; bracts in headlike clusters not setaceous; pollen-sacs parallel. **9. PYCNANTHEMUM**
 - j' Heads solitary or few; bracts in headlike clusters setaceous, long-ciliate. **8. SATUREJA**
 - i' Flowers in small axillary clusters, the clusters sometimes in terminal spikes.
 - k Small, diffusely branched, shrub with elliptic or oblong leaves 5-10 mm long; upper clusters usually continuous. **THYMUS L.**
 - k' Herbs; clusters usually not continuous.
 - l Cauline blades ovate, coarsely crenate; plant lemon-scented; calyx 2-lipped. **7. MELISSA**
 - l' Cauline blades linear to oblanceolate, entire or nearly so. **8. SATUREJA**
- h' Upper corolla-lip concave or galeate (or, if rarely not, then inner pair of stamens the longer); corolla definitely 2-lipped.
 - m Calyx with more than 10 nerves, not 2-lipped, at most somewhat oblique; inner pair of stamens the longer.
 - n Stamens well exerted beyond corolla, not ascending under upper corolla-lip; flowers in dense terminal spikes; pollen-sacs parallel. **14. AGASTACHE**
 - n' Stamens not or little exerted beyond corolla, ascending under upper corolla-lip.
 - o Plants erect, canescent; flower-clusters of several to many flowers in upper axils, sometimes continuous, corolla white; blades ovate. **15. NEPETA**
 - o' Plants prostrate, not canescent; flowers few or solitary in axils; corolla blue; blades round-ovate or reniform. **16. GLECHOMA**
 - m Calyx with 10 nerves or fewer (in *Stachys*, nerves sometimes more, or difficult to distinguish); stamens ascending under upper lip of corolla, outer pair the longer except in *Leonurus*.
 - p Calyx strongly 2-lipped; flowers in terminal dense short spikes; bracts round-ovate, cuspidate. **18. PRUNELLA**
 - p' Calyx regular or nearly so, not or scarcely 2-lipped.
 - q Flowers in terminal spike, a single flower in axil of each large or small bract; calyx much shorter than corolla.
 - r Blades broadly ovate, petioled, cordate; flowers few, bracts large; pollen-sacs divergent. **19. SYNANDRA**
 - r' Blades lanceolate; flowers many, bracts small; pollen-sacs nearly parallel. **17. PHYSOSTEGIA**
 - q' Flowers in clusters in axils of foliage leaves or of bracts, the clusters sometimes in spikes.
 - s Calyx-lobes tipped with terete spines; pollen-sacs parallel or nearly so. **21. LEONURUS**
 - s' Calyx-lobes or teeth acute or aristate but not ending in hard spines (or sometimes with short spines in *Stachys*); pollen-sacs divergent.
 - t Flower clusters (except sometimes the lowest) in axils of bracts; inflorescence a terminal spike. **22. STACHYS**
 - t' Flower clusters subtended by ordinary or scarcely reduced foliage leaves, but sometimes crowded near tip of stem. **20. LAMIUM**
 - a' Anther-bearing stamens 2.
 - u Corolla yellow, lower lip fringed, much longer than upper; stamens long-exsert; flowers in terminal panicle. **11. COLLINSONIA**
 - u' Flowers not as above.
 - v The 2 pollen-sacs of an anther far apart, anther-connective elongate, 1 sac often vestigial; corolla and calyx 2-lipped. **25. SALVIA**

AJUGA
TEUCRIUM
ISANTHUS
SCUTELLARIA



- v' The 2 pollen-sacs of an anther the usual distance apart.
- w Calyx nearly equally toothed, not 2-lipped.
 - x Corolla strongly 2-lipped, upper lip narrow; flowers large, in large terminal and sometimes subterminal headlike clusters. **23. MONARDA**
 - x' Corolla almost regular, 4-lobed; flowers small, less than 1 cm long, clusters axillary, in many axils. **13. LYCOPUS**
- w' Calyx 2-lipped.
 - y Flowers in dense terminal and sometimes also subterminal clusters; calyx not hairy in throat. **24. BLEPHILIA**
 - y' Flowers in small clusters in many axils; calyx hairy in throat. **6. HEDEOMA**

1. AJUGA L. Bugleweed

Leaf-blades obovate, dentate or lobed; flowers in whorls of 4-6 in axils of leaflike bracts, the whole a terminal spike; calyx nearly regular, 5-lobed; corolla blue, upper lip short, 2-lobed, lower lip large and spreading; stamens 4, exerted beyond upper lip, outer pair the longer; pollen-sacs divergent.

1. **Ajuga reptans* L.

Carpet Bugleweed

Naturalized (native of Eurasia)

Plants low, stoloniferous, 1-2 dm tall; stems glabrous or slightly pubescent; stolons bearing leaves with short petioles, flowering stems erect with sessile leaves; flowers in a congested leafy spike; corolla blue to purple, upper lip very short; stamens 4, exerted.

REFERENCE: Cooperrider 1995:381 (illus. p. 385).

HERBARIUM RECORDS: 22 Apr 1970—weed patch near Lincoln Tower, OSU campus, *W. Owen 091*; 30 Apr 1988—Worthington, 226 Sanbridge, S of Rt. 161 W of Rt. 23, *M. Hoffman 42*; 27 Sep 1992—Piedmont Rd. between Indianola Ave. & N. High St., scattered, lawns & treelawns, NW Cols. Quad., *Cusick 30602*.

2. TEUCRIUM L. Germander

Calyx nearly regular or somewhat 2-lipped; corolla 1-1.5 cm long, cleft above, stamens exerted in cleft, hence all lobes below exerted stamens and appearing as one lower lip; stamens 4, outer pair the longer; pollen-sacs divergent.

1. *Teucrium canadense* L. var. *canadense*

American Germander

Stems pubescent; leaves toothed; flowers several in axils of bracts; racemes dense, not secund; calyx nearly regular, both calyx and inflorescence axis with hairs eglandular and incurved; corolla zygomorphic, appears to have only a lower lip, pink-purple or whitish; stamens 4, appearing exerted.

REFERENCES: Riddell 1834:157 (open woods); Sullivant 1840:36 (wood-sage); Craig 1890:95 (Mr. W. J. Green found this on 11 Jul 1882; it grows sparingly along the brook and E of the island where I collected specimens last summer); Selby & Craig 1890:14; Cooperrider 1995:382 (illus. p. 387).

HERBARIUM RECORDS: 26 Jul 1882—OSU farm, Cols., *W. Green*; Jul 1888—Cols., *Craig*; 7 Oct 1888—Olentangy R., Cols., *Craig*; 9 Jul 1890—OSU, river, near Cols., *Hine*; 20 Jul 1890—Wyandot Grove, *Selby*; 24 Jul 1890—Cols., *Hine*; 9 Jul 1892—Cols., *Bogue*; 23 Aug 1899—Scioto R., Cols., *Selby*; 23 Sep 1911—1½ mi. E of Westerville, *Hanawalt*; 12 Jul 1982—Blendon Woods, woodcock field margins, *Owens*; 16 Jul 1986—Highbanks Metro Park (Delaware Co.), floodplain edge, *Watts 323* (OWU); 5 Aug 1989—ditch along Godown Rd., between Commerce Pl. & Le Anne Marie Circle, Perry Twp., *Lowden 4240*; 11 Aug 1989—E bank of Scioto R., just S of Fishinger Rd. bridge, Perry Twp., *Lowden 4273*; 10 Jul 1990—Starret Rd., just N of Henderson Rd., E side of Olentangy R., Clinton Twp., *Lowden 4430*.

NOTE: I believe Craig 1890:54, 97 and Selby & Craig 1890:14 misidentified *Stachys palustris* L., which is unknown to Franklin Co., based on specimens of *Teucrium canadense* L. The specimens of Craig (Jul 1888), Selby (20 Jul 1890), and Bogue (1892) have longer incurved eglandular hairs that might tend towards *Teucrium canadense* L. var. *occidentalis* (A.Gray) D.C.McClint. & Epling.

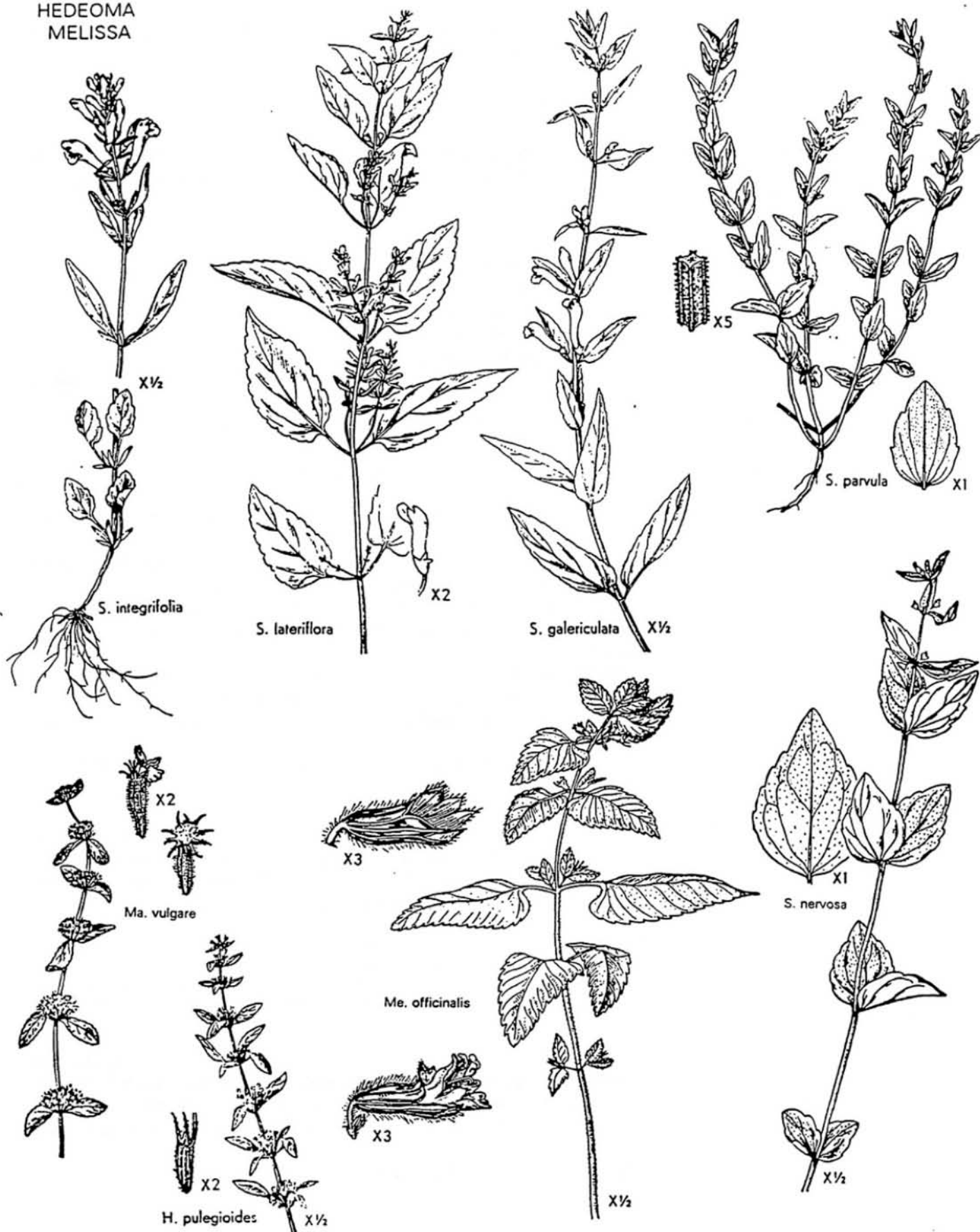
3. ISANTHUS Michx. False Pennyroyal

Viscid-puberulent; leaves lanceolate, nearly entire, 1-3-nerved; flowers 1-3 in axillary clusters; calyx regular, 10-nerved; corolla pale blue, about 5 mm long, nearly regular; stamens 4, outer pair a little the longer; pollen-sacs divergent.

1. *Isanthus brachiatus* (L.) Britton, Sterns & Poggenb.

False Pennyroyal

SCUTELLARIA
MARRUBIUM
HEDEOMA
MELISSA



Stems erect, short pubescent; leaves entire; calyx actinomorphic; corolla blue-purple, appearing actinomorphic; stamens 4, included to exerted.

REFERENCES: Sullivant 1840:35 (*Isanthus coreuleus* Michx.); Selby & Craig 1890:14 (*Isanthus caeruleus* Michx.); Cooperrider 1995:380 (illus. p. 385).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 10 Sep 1894—Cols., *W. Kellerman*; 9 Aug 1982—dry bank, E side of Hoover Dam, ½ mi. NE of jct. of Central College Rd. & Sunbury Rd., Blendon Twp., NE Cols. Quad., *Cusick 21924*.

4. SCUTELLARIA L. Skullcap

Nonaromatic; flowers solitary in axils or in solitary or paniced racemes; calyx gibbous, 2-lipped, upper lip bearing a crest or protuberance; corolla much longer than calyx, 2-lipped, tube sometimes curved upward; stamens 4, outer pair the longer.

- a Flowers solitary in axils of ordinary leaves.
 - b Blades lanceolate, 2-4 times as long as wide; flowers 1.5 cm long. **7. *S. galericulata***
 - b' Blades ovate, mostly less than twice as long as wide; flowers 1 cm long or less.
 - c Rhizome a chain of small tubers; blades 0.5-2 cm long; nutlets brown. **8. *S. parvula***
 - c' Rhizome slender; blades 2-5 cm long; nutlets tan or yellow. **9. *S. nervosa***
- a' Flowers in terminal or axillary racemes; bracts smaller than foliage leaves.
 - d Corolla 5-8 mm long; racemes axillary and terminal, usually many; blades ovate to lanceolate. **6. *S. lateriflora***
 - d' Corolla more than 1 cm long.
 - e Middle and upper cauline blades entire, short-petioled, lanceolate. **5. *S. integrifolia***
 - e' Blades dentate, crenate, or serrate.
 - f Blades lanceolate, almost sessile, corolla 1.5 cm long. **7. *S. galericulata***
 - f' Blades ovate, obviously petioled.
 - g Principal blades cordate at base; lateral lobes of corolla almost equaling short upper lip. **1. *S. ovata***
 - g' Principal blades not cordate or, if slightly so, wings of blade extending short distance down petiole ending in a point; lateral lobes of corolla much shorter than galeate upper lip.
 - h Middle and upper blades blunt at apex, cuneate at base, lower third of margin entire, upper margin crenate; stem usually with spreading long multicellular hairs; calyx glandular-pubescent. **4. *S. elliptica***
 - h' Blades large, acute at apex, not strongly cuneate at base, less than 1/3 of margin entire; stem minutely pubescent with curved hairs; calyx pubescent, not glandular.
 - i Calyx sparsely pubescent; racemes usually 1, lowest 2 flowers usually in axils of foliage leaves. **3. *S. serrata***
 - i' Calyx canescent; racemes usually more than 3; usually all flowers in axils of bracts. **2. *S. incana***

1. *Scutellaria ovata* Hill var. *versicolor* (Nutt.) Fernald Heart-leaved Skullcap

Inflorescence and upper internodes with spreading glandular hairs; leaves cordate at base, margins crenate-dentate, petioles more than 2.5 cm long, blades 8 cm long or more; flowers mostly in a terminal raceme, sometimes a few additional racemes from upper axils; calyx bilabiate, upper lip with protuberance, corolla zygomorphic, blue, 15-20 mm long; stamens 4. Syn.: *S. versicolor* Nutt.

REFERENCES: Riddell 1834:157 (*Scutellaria cordifolia*, open woods); Sullivant 1840:36 (*Scutellaria cordifolia* Muhl.); Craig 1890:96 (on the banks of the ponds around the island, 9 Jul 1882); Selby & Craig 1890:14; Cooperrider 1995:383 (illus. p. 387).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Jul 1888—Cols., *Craig*; 1 Jul 1891—Cols., *Werner* (CLM); 8 Jul 1891—E of city, Cols., *Selby*; 25 Jun 1892—Cols., *Werner*; 27 Jun 1892—Wyandott Grove, *Selby*; 14 Jul 1897—Cols., *Osburn*; 21 Jun 1987—Highbanks Metro Park (Delaware Co.), woods, *Witsberger 950*.

2. *Scutellaria incana* Biehler Downy Skullcap

Stems with short curved hairs; leaves petiolate, rounded to truncate at bases, blades acute at apex, margins crenate; inflorescence glandular-pubescent; flowers in 5 or more axillary-terminal racemes; calyx bilabiate and usually with dense gray pubescence, upper lip with protuberance; corolla zygomorphic, blue, more than 10 mm long; stamens 4. Syn.: *S. canescens* Nutt.

REFERENCES: Sullivant 1840:36; Selby & Craig 1890:14; Cooperrider 1995:384 (illus. p. 389).

HERBARIUM RECORDS: 1840—Cols., *Sullivan*; 21 Jul 1982—Blendon Woods, *Owens*; 19 Jul 1986—along stream behind the Ohio School for the Blind, N of Morse Rd., *T. Lammers & Spooner 5960* (BHO, OS).

3. †*Scutellaria serrata* Andrews

Showy Skullcap

REFERENCE: Riddell 1834:157 (*Scutellaria serrata?*, open woods).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:384 (illus. p. 387).

4. *Scutellaria elliptica* Muhl.

Hairy Skullcap

REFERENCE: Riddell 1834:157 (*Scutellaria ovalifolia*, open woods).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:384 (illus. p. 387). Riddell's name is placed here based on Gray's Manual (p. 1219), where *Scutellaria ovalifolia* is listed as a synonym.

5. †*Scutellaria integrifolia* L.

Hyssop Skullcap

REFERENCES: *Sullivan* 1840:36; Selby & Craig 1890:14.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:386 (illus. p. 389).

6. *Scutellaria lateriflora* L.

Mad-dog Skullcap

Stems glabrous to slightly pubescent on angles; leaf margins serrate to coarsely serrate-dentate, petioles more than 5 mm in length; flowers mostly in axillary racemes originating from mid and upper nodes, each flower subtended by a bract; calyx bilabiate, upper lip with protuberance; corolla zygomorphic, blue, more than 5 mm long; stamens 4.

REFERENCES: Riddell 1834:157 (open woods); *Sullivan* 1840:36; Craig 1890:96 (Mr. W. J. Green found this 10 Aug 1882); Selby & Craig 1890:14; Cooperrider 1995:386 (illus. p. 389).

HERBARIUM RECORDS: Jun 1888—Cols., *Craig*; 8 Aug 1890—Headley's Woods, *Selby*; 9 Aug 1890—OSU campus, near Cols., *Hine*; 20 Aug 1890—Cols., *Werner* (CLM); 21 Sep 1895—S Cols., *Osburn*; 6 Aug 1897—Hamilton Twp., *W. Kellerman*; 1 Oct 1911—Westerville, wet-shaded woods, *Hanawalt*; 11 Sep 1971—W of OSU campus along Olentangy R. near Tower Dorms and Battelle, Cols., *Roberts 2056*; 6 Nov 1984—Gahanna Woods State Nature Preserve, in large buttonbush swamp in SW corner of preserve, *Tyrrell*; 3 Aug 1990—S side of McOwen Rd., just W of Dixon Rd., near Franklin/Licking Co. Line, Jefferson Twp., *Lowden 4505*; 30 Jun 1991—E bank of Scioto R., ½ mi. N of Fishinger Rd. bridge, Perry Twp., *Lowden 4747*; 12 Sep 1991—Hoover Dam Park, N of entrance off Cabbage Rd., inlet cove to reservoir, Blendon Twp., *Lowden 4827*.

7. *Scutellaria galericulata* L.

Common or Marsh Skullcap

Stems glabrous to pubescent on the angles; leaves sessile to subsessile, oblong-lanceolate to oblong-ovate; flowers solitary in the axils of full-sized or reduced leaves; calyx bilabiate, with upright protuberance on upper side; corolla zygomorphic, violet-blue, 15-25 mm long; stamens 4. Syn.: *S. epilobiifolia* A.Ham.

REFERENCES: Craig 1890:96 (*Scutellaria galericulata* L., near the lake, growing in shaded places, 9 Aug 1882, 13 Jun 1887); Selby & Craig 1890:14 (*Scutellaria galericulata* L.); Cooperrider 1995:388 (illus. p. 389).

HERBARIUM RECORDS: 1840—Cols., *Sullivan*; Jul 1892—Cols., *Werner* (CLM); 6 Aug 1897—Hamilton Twp., *W. Kellerman*.

NOTE: Cooperrider treated as *Scutellaria epilobiifolia*, stating *Scutellaria galericulata* L. is perhaps conspecific.

8. *Scutellaria parvula* Michx. var. *leonardii* (Epling) Fernald

Small Skullcap

Rhizomes producing small tubers; stems and calyx with eglandular pubescence; principal leaves ovate to ovate-oblong, sessile, about 1 cm long, margins nearly entire, blades mostly with 2 pairs of lateral veins; flowers solitary in leaf axils; calyx bilabiate, upper lip with protuberance; corolla zygomorphic, purplish-blue, 6-9 mm long; stamens 4.

REFERENCES: Selby & Craig 1890:14; Selby 1892a:111 (#652 Re-collections); Cooperrider 1995:390.

HERBARIUM RECORDS: 1840—Cols., *Sullivan*; 15 Jul 1892—Georgesville, *Bogue*; 15 Jul 1892—Franklin Co., *Bogue*; 13 Jul 1983—Big Darby Wildlife Area, 0.1-0.2 mi. SSE of jct. of Rt. 665 & Graessle Rd., open slopes above small stream, Pleasant Twp., Harrisburg Quad., *Cusick 22725*.

9. *Scutellaria nervosa* Pursh var. *nervosa*

Veined Skullcap

Leaves broadly ovate, sessile or subsessile, margins of lower leaves crenate-dentate or crenate-serrate; flowers solitary in axils of reduced or full-sized leaves; calyx bilabiate, upper lip with protuberance; corolla zygomorphic, pale blue, 6-9 mm long; stamens 4; rhizomes without tubers.

REFERENCES: Riddell 1834:157 (wet prairies); *Sullivan* 1840:36; Selby & Craig 1890:14; Selby 1891a:111a (#651 Re-collected); Selby 1892a:111 (#651 Re-collected); Cooperrider 1995:388 (illus. p. 391).

HERBARIUM RECORDS: Jul 1891—E of city, Cols., *Selby*; 1 Jul 1891—Georgesville, *Werner* (CLM); 30 Apr 1931—Red Hills, *Chapman*; 23 May 1982—Blendon Woods, along connecting trail, *Owens*.

5. MARRUBIUM L. Horehound

White-woolly; branched; with stellate hairs; blades ovate, crenate, lower petioled; flowers in dense axillary clusters; calyx tubular, its 10 spine-tipped teeth curved outward at maturity; corolla about 6 mm long, white, 2-lipped; stamens 4, included in corolla tube, lower pair the longer.

1. **Marrubium vulgare* L.

Common Horehound, White Horehound

Adventive (native of Eurasia)

Plants densely white woolly-pubescent; leaves ovate; flowers sessile in dense axillary clusters; calyx appearing actinomorphic, terminating in 10 hooked spines; corolla white, bilabiate; stamens 4, included.

REFERENCES: Riddell 1834:157; Sullivant 1840:35 (naturalized plants); Selby & Craig 1890:14 (introduced); Cooperrider 1995:390.

HERBARIUM RECORDS: 7 Nov 1890—Marble Cliff near Cols., Craig; 5 Jun 1895—Cols., W. Kellerman; 31 May 1896—Cols., E. M. Wilcox.

6. HEDEOMA Pers. Pennyroyal

Small annuals; blades entire or nearly so; flowers in axillary clusters; calyx 13-ribbed, somewhat 2-lipped, hairy in throat, gibbous on lower side near base; corolla blue, 3-5 mm long, 2-lipped; anther-bearing stamens 2; pollen-sacs divergent.

1. *Hedeoma pulegioides* (L.) Pers.

Mock Pennyroyal, American Pennyroyal

Small herb, strong-scented; leaves lanceolate or ovate, short-petiolate, crenulate, 1-3 cm long; calyx bilabiate, two lower lobes subulate and ciliate, the three upper lobes triangular, about as wide as long, acute, not ciliate; corolla zygomorphic, blue, hardly longer than the calyx; anther-bearing stamens 2.

REFERENCES: Riddell 1834:157; Sullivant 1840:35; Craig 1890:95 (sparingly in the meadow E of the woods, 15 Aug 1882, University Farm Sep 1887); Selby & Craig 1890:14; Cooperrider 1995:408 (illus. p. 409).

HERBARIUM RECORDS: [date?]-Cols., Brugger; 16 Aug 1882—Central Insane Asylum, W. Green; Jul 1888—Cols., Craig; 11 Aug 1890—Neils Run, near Cols., Hine; 11 Aug 1890—Cols., Hine; Aug 1892—Cols., Bogue; 30 Jul 1896—Cols., Hendrixson; 17 Aug 1898—along Scioto R. bluffs, J. H. Schaffner; 4 Oct 1901—N Cols., Eckman; 16 May 1909—Flint, Pike; 25 Jul 1992—Slate Run Wood Ct., off Henderson Rd., ½ mi. E of Sawmill Rd., Perry Twp., Lowden 5008; 3 Sep 1992—W side of Cabbage Rd., uncommon in dry openings in brushy field, approx. ½ mi. S of Walnut St., Blendon Twp., New Albany Quad., McCormac 4900.

7. MELISSA L. Balm

Lemon-scented; blades ovate, long-petioled, crenate; flowers in small axillary clusters; calyx 2-lipped, somewhat villous, 13-nerved; corolla pale blue to white, 10-15 mm long, 2-lipped, upper lip concave; stamens 4, ascending under upper lip; pollen-sacs divergent.

1. **Melissa officinalis* L.

Common Balm

Adventive (native of W Asia)

Plant lemon-scented; stems glandular-puberulent; leaves petiolate, blades ovate, crenate-serrate; flowers in small axillary clusters; calyx bilabiate, villous; corolla whitish, bilabiate; stamens 4.

REFERENCE: Cooperrider 1995:408 (illus. p. 409).

HERBARIUM RECORD: 12 Jul 1894—near Big Darby Creek, W. Kellerman.

8. SATUREJA L. Savory, Calamint

Calyx 10-13-nerved, 2-lipped or almost regular, naked or hairy in throat; corolla purple, pink, or white, 2-lipped; stamens 4, lower pair the longer; pollen-sacs parallel to divergent.

1. **Satureja vulgaris* (L.) Fritsch

Naturalized (native of Ohio)

Stems erect, white pubescent; leaves ovate to oblong, short petiolate; flower-clusters terminal and sometimes also subterminal, dense, the many setaceous long-ciliate bracts about equaling calyx; corolla bilabiate, pink to red-purple; stamens 4. Syn.: *Clinopodium vulgare* L.

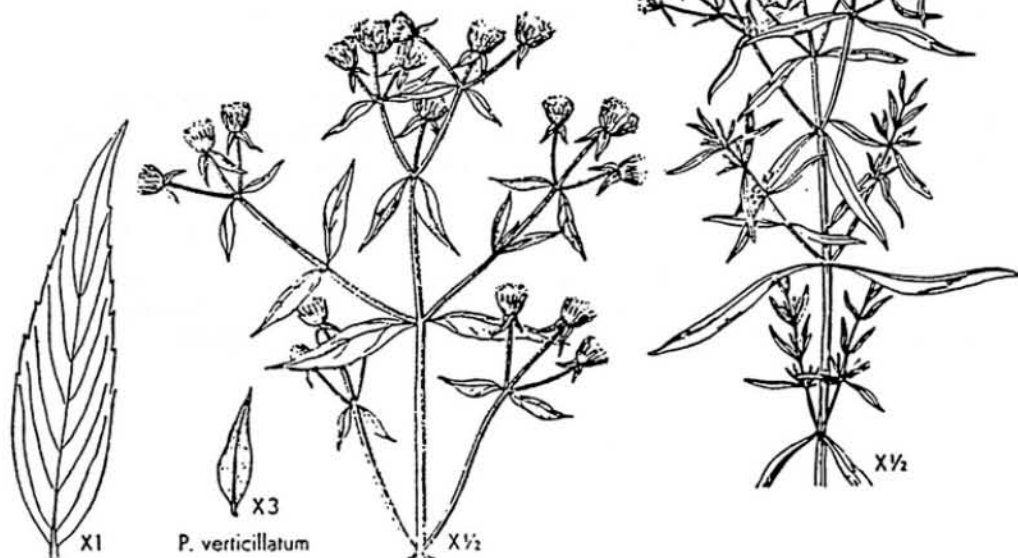
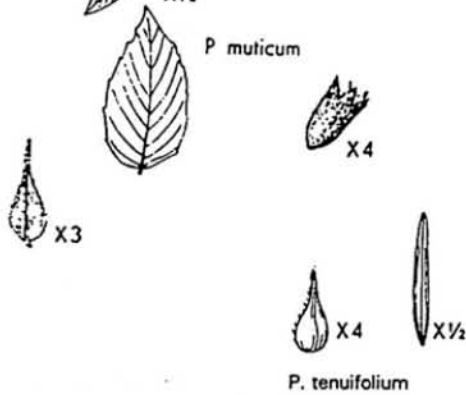
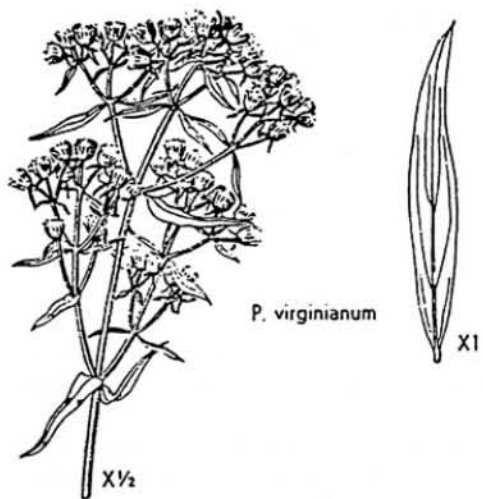
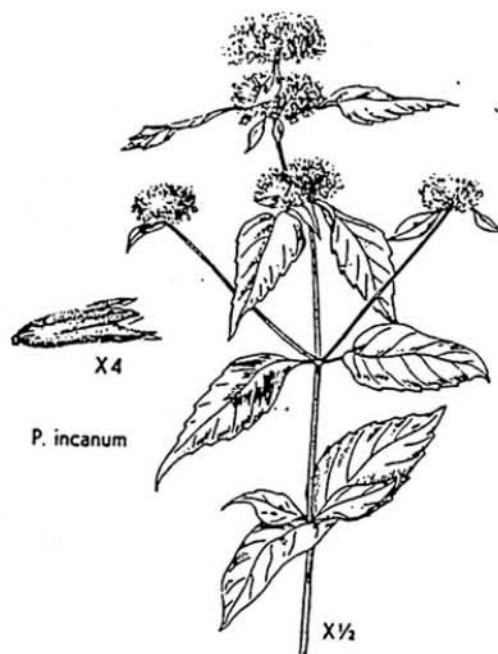
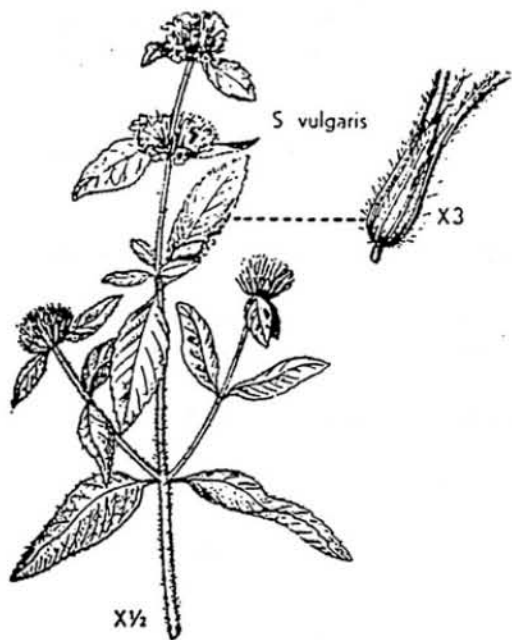
REFERENCES: Sullivant 1840:36 (*Melissa clinopodium* Benth., naturalized plants); Selby & Craig 1890:14 (*Calamintha clinopodium* Benth.); Cooperrider 1995:410 (illus. p. 409).

HERBARIUM RECORDS: 22 Aug 1894—Cols., W. Kellerman; 22 Aug 1986—Highbanks Metro Park (Delaware Co.), field, Watts.

NOTE: Most likely *Melissa clinopodium* Benth. of Sullivant 1840:36 (naturalized plants) belongs here. I was unable to determine if there are 4 included stamens.

9. PYCNANTHEMUM Michx. Mountain-mint

SATUREJA
PYCNANTHEMUM
MENTHA



Strongly aromatic; stem branched; flowers small, in dense headlike cymes terminal on main stem or branches or sometimes in axils; clusters subtended by leaflike bracts, many smaller bractlets in the cyme; calyx nearly regular or somewhat 2-lipped, 10-13-nerved; corolla 2-lipped, white or purplish, sometimes dotted with purple; stamens 4, lower pair a little the longer; pollen-sacs parallel.

a Headlike cymes somewhat open, branches and pedicels not concealed; leaves white-pubescent beneath.

1. *P. incanum*

a' Headlike cymes very dense, cyme-branches and pedicels hidden by bracts.

b Blades lanceolate, some lateral veins joining midvein above middle; leaflike bracts below the cyme velvety-pubescent on upper surface.

c Blades of main stem ovate or lance-ovate, rounded at base, shallowly toothed, length less than 3 times width; cymes relatively few, usually solitary at tips of branches; leaflike bracts white-pubescent.

2. *P. muticum*

c' Blades of main stem lanceolate, entire or shallowly toothed, length more than 3 times width, tapering at base; cymes many. 3. *P. verticillatum*

b' Blades linear to lanceolate, lateral veins joining midvein at middle or below; leaflike bracts below the cyme glabrous.

d Blades lanceolate or linear-lanceolate, lateral veins from lower half of midvein; calyx-teeth less than 1 mm long; stem pubescent on angles, usually glabrous on sides; bracts within the cyme acute or short-acuminate, without conspicuous subulate points. 4. *P. virginianum*

d' Blades linear, lateral veins from lower fourth of midvein; calyx-teeth 1-2 mm long; stem glabrous; bracts within the cyme long-acuminate with conspicuous subulate points. 5. *P. tenuifolium*

1. *Pycnanthemum incanum* (L.) Michx.

Hoary Mountain-mint

REFERENCES: Sullivant 1840:36; Selby & Craig 1890:14.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:413 (illus. p. 414).

2. †*Pycnanthemum muticum* (Michx.) Pers.

Blunt Mountain-mint

REFERENCES: Sullivant 1840:36; Selby & Craig 1890:14.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:413 (illus. p. 414).

3. †*Pycnanthemum verticillatum* (Michx.) Pers. var. *pilosum* (Nutt.) Cooperr.

Hairy Mountain-mint

Syn.: *P. pilosum* Nutt.

REFERENCE: Roberts & Cooperrider 1982:65.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:412 (illus. p. 414).

4. *Pycnanthemum virginianum* (L.) Durand & B.D.Jacks.

Virginia Mountain-mint

Similar to *Pycnanthemum tenuifolium* except for stems pubescent on the angles; calyx lobes less than 1 mm long, acute at apex.

REFERENCES: Riddell 1834:157 (dry prairies); Selby & Craig 1890:14 (*Pycnanthemum lanceolatum* Pursh); Cooperrider 1995:412 (illus. p. 414).

HERBARIUM RECORDS: 14 Aug 1839—Duncan's Plains, *J. Paddock Collection* (ILL); Jul 1888—Cols., *Craig*; 189?—Cols., *W. Kellerman*; 3 Oct 1891—Big Darby, *Selby*; 9 Oct 1891—Woodward Ave., Cols., *Selby*; 12 Sep 1892—Cols., *W. Kellerman*; 5 Aug 1893—Cols., *Werner* (CLM); 12 Oct 1901—S Cols., *Eckman*; 18 Aug 1929—Darby Creek, S of National Rd., *Gordon & Chapman*; 4 Sep 1936—N of Dublin, *Gordon*; 25 Jul 1992—OSU prairie plant reserve, jct. Kinnear Rd. & North Star Ave., Clinton Twp., *Lowden 5001*.

5. *Pycnanthemum tenuifolium* Schrad.

Narrow-leaved Mountain-mint

Stems glabrous; leaves linear to linear-lanceolate, less than 5 mm wide; flowers in dense terminal cymes, head-like; calyx actinomorphic, lobes more than 1 mm long, aristate-acuminate at apex; corolla bilabiate, whitish to purple; stamens 4. Syn.: *P. linifolium* Pursh

REFERENCES: Riddell 1834:157 (dry prairies); Sullivant 1840:36; Selby & Craig 1890:14; Selby 1892a:111 (#645 Re-collections); Cooperrider 1995:412 (illus. p. 414).

HERBARIUM RECORDS: Jun 1891—Cols., *Werner* (CLM); 1892—Cols., *Selby* (OS, WOOS); Summer 1892—Cols., low ground, *Selby*; 12 Sep 1937—Minerva Park, *Chapman*; 1 Jul 1982—Blendon Woods, *Owens*; 8 Jun 1986—Highbanks Metro Park (Delaware Co.), field, uncommon, *Witsberger*; 29 Jun 1986—Highbanks Metro Park (Delaware Co.), Shale Creek Woods, *Witsberger 923* (OWU); 21 Sep 1986—Highbanks Metro Park, open field, *Higgins*.

10. MENTHA L. Mint

Strongly aromatic; blades toothed; flowers small, in axillary clusters or in terminal spikes; calyx nearly regular, 5-toothed or slightly 2-lipped; corolla lavender or white, limb 4-lobed; stamens 4, about equal in length; pollen-sacs parallel.

- a Flowers in separate axillary whorls.
- b Subtending leaves more than 4 times as long as whorls of flowers in their axils. 1. *M. arvensis*
- b' Subtending leaves only 2-3 times as long as whorls of flowers in their axils. 2. *M. × gentilis*
- a' Flowers in terminal spikes continuous at least at tips; sometimes additional whorls of flowers in upper axils.
- c Leaves definitely petioled; spikes (excluding corollas) 1 cm thick.
- d Spikes ellipsoid or capitate; peduncled whorls often present in upper axils; calyx glabrous; blades ovate or round-ovate; lemon-scented. 3. *M. × citrata*
- d' Spikes elongate; calyx-teeth usually hairy; blades lanceolate to ovate-oblong. 4. *M. × piperita*
- c' Leaves sessile or petioles to 3 mm long; spikes (excluding corollas) about 6 mm in diameter.
- e Plant glabrous or nearly so. 5. *M. spicata*
- e' Plant soft-pubescent; blades rugose-reticulate. 6. *M. suaveolens*

1. *Mentha arvensis* L. var. *glabrata* (Benth.) Fernald

Field Mint

Leaf petioles 5 mm or more in length; flowers in axillary clusters subtended by full-size or slightly reduced leaves; calyx usually pubescent from apex to base; corolla actinomorphic, lavender or pinkish-purple; stamens 4.

REFERENCES: Riddell 1834:157 (*Mentha arvensis*, naturalized, wet prairies, doubt to correctness in the Natural System; *Mentha borealis*, denuded river banks); Riddell 1835:79 (*Mentha arvensis* L., naturalized on Duncan's Plains); Sullivant 1840:36 (*Mentha canadensis* L.); Craig 1890:95 (*Mentha arvensis* L., Field Mint, along the brook and near the river, 11 Aug 1882; *Mentha canadensis* L., Horsemint, around the lagoon N of the road, 9 Aug 1882); Selby & Craig 1890:14 (*Mentha canadensis* L.); Kellerman & Werner 1893:226 (*Mentha arvensis* L., Mr. Craig had a specimen of this plant in his herbarium; specimens are also in the University Herbarium; they are a form of *Mentha canadensis*); Cooperrider 1995:423 (illus. p. 421).
HERBARIUM RECORDS: 10 & 12 Aug 1882—Olentangy R., *W. Green*; Jul 1888—Cols., *Craig*; 1889?—OSU, Cols., *Craig*; 26 Jul 1891—near Cols., *E. V. Wilcox*; 16 Aug 1892—Cols., *Bogue*; 20 Jul 1897—Truro T[w]p., *W. Kellerman et al.*; 3 Jul 1899—Scioto R., *Selby*; 22 Aug 1899—Scioto R. Canal, *Selby*; 10 Oct 1902—Cols., *Sanders*; 28 Jul 1979—quarry along E bank of Scioto R., 1 mi. S of Dublin, W side of Rt. 33, *W. Carr 1762*; 14 Aug 1982—Blendon Woods, *Owens*; 2 Oct 1987—Cols., W bank of Olentangy R., just N of Lane Ave. bridge, Cols., *T. Lammers & Stuckey 6193*; Summer 1988—along Olentangy R., OSU campus, Cols., *DeLong*; Summer 1988—along Big Darby Creek between I-70 & Little Darby Creek, Galloway Quad., *DeLong*; 18 Sep 1989—Highbanks Metro Park (Delaware Co.), edges of Olentangy R., *Watts 493*; 10 Sep 1991—E bank of Big Darby Creek just off Rt. 40, Prairie Twp., *Lowden 4820*.

NOTE: Most likely *Mentha sativa* L. (introduced) of Selby & Craig 1890:14 belongs here based on Craig's specimen label (1889?).

2. **Mentha × gentilis* L.

Red Mint

Adventive (European cultigen)

Leaf petioles more than 5 mm in length; flowers in axillary clusters subtended by leaves reduced in size; calyx hairy toward apex. Syn.: *M. arvensis × M. spicata* L., *M. cardiaca* (Gray) Baker

HERBARIUM RECORD: Summer 1988—Big Darby Creek between I-70 & Little Darby Creek, Galloway Quad., *DeLong*.

NOTE: Not mapped for Franklin Co. by Cooperrider 1995:423.

3. **Mentha × citrata* Ehrh.

Bergamot Mint

Naturalized (European cultigen)

Leaf petioles 5 mm or more in length, blades ovate; flowers for the most part in 1-3 compact verticils forming a single terminal head with lower verticils slightly separated; corolla pinkish to rose-purple. Syn.: *M. aquatica* L., *M. × piperita* L. var. *citrata* (Ehrh.) Briq.

REFERENCE: Cooperrider 1995:422 (illus. p. 421).

HERBARIUM RECORDS: 11 Sep 1892—Clintonville, near Cols., *A. Wilcox*; 14 Aug 1892—near Cols., *A. Wilcox* (BGSU); Aug 1893—Cols., *Werner*; 20 Aug 1893—Cols., *Werner* (CLM); 20 Aug 1893—Clintonville, near Cols., *A. Wilcox*; 11 Sep 1893—near Cols., *A. Wilcox*.

NOTE: Not mapped for Franklin Co. by Cooperrider 1995: 423.

4. **Mentha × piperita* L. var. *piperita*

Peppermint

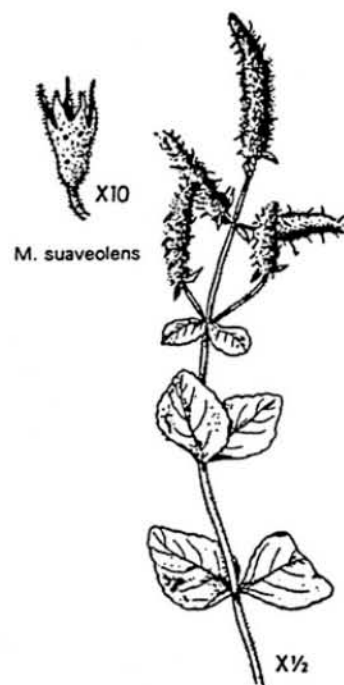
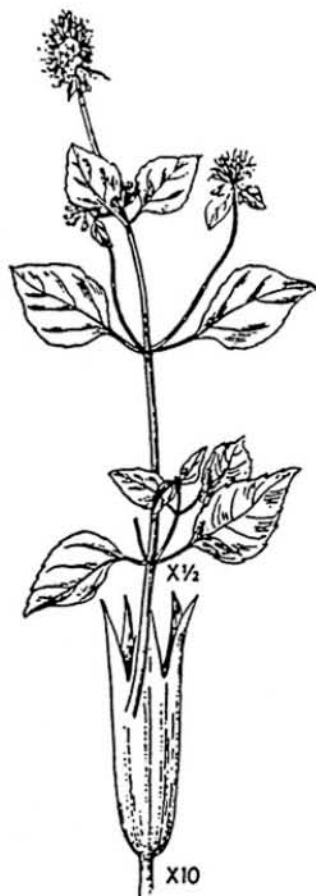
Naturalized (European cultigen)

Leaf petioles 5 mm or more in length, blades oblong-lanceolate; flowers in elongated spikes consisting of 4 or more verticils; corolla pinkish-purple.

REFERENCES: Riddell 1834:157 (naturalized, wet prairies; doubt to correctness in the Natural System); Riddell 1835:79 (near Worthington); Sullivant 1840:36 (naturalized plants); Craig 1890:95 (along the brook E of the lake and sparingly about the island, 2 Aug 1882, University Farm Sep 1887); Selby & Craig 1890:14 (introduced); Cooperrider 1995:422 (illus. p. 421).

HERBARIUM RECORDS: 3 Aug 1882—Olentangy R., *W. Green*; Aug 1888—Cols., *Craig*; 9 Aug 1890—O.A.E.S. field, Cols., *Hine*; 4 Sep 1890—Central College, *Selby*.

MENTHA
COLLINSONIA



5. **Mentha spicata* L.

Spearmint

Naturalized (native of Europe)

Leaves sessile or petioles less than 2 mm long, blades glabrous on the undersurface or with few hairs along the veins; flowers in elongated terminal spikes at the ends of upper branches; corolla purple-pink or white.

REFERENCES: Riddell 1834:157 (*Mentha viridis*); Selby & Craig 1890:14 (*Mentha viridis* L., introduced); Kellerman & Werner 1893:229 (*Mentha viridis* L., just S of fence dividing the pasture from the lot of farm house on Woodward Ave., Jun 1891); Cooperrider 1995:422 (illus. p. 421).
HERBARIUM RECORDS: [date?]-Georgesville, Selby; 19 Aug 1882—Olentangy R., W. Green; 3 Aug 1890—E. Broad St. Pike, Selby (WOOS); 15 Jul 1892—Georgesville, Bogue; 16 Aug 1898—OSU Botanical Gardens, cult., J. H. Schaffner; 1 Oct 1992—N of Lane Ave. & W of Fyffe Court, E of Rt. 315, OSU Chadwick Arboretum, Oberliesen.

6. **Mentha suaveolens* Ehrh.

Foxtail Mint

Adventive (native of S Europe)

Leaves sessile, orbicular-ovate or orbicular-oblong, undersurface pubescent; flowers in elongated terminal spikes, more than 8 mm in diameter. Syn.: *M. × rotundifolia* (L.) Huds., *M. × villosa* Huds. var. *alopecuroides* (Hull) Harley

REFERENCES: Selby & Craig 1890:14 (*Mentha sylvestris* L. var. *alopecuroides* Baker, introduced); Cooperrider 1995:420.
HERBARIUM RECORDS: 12 Jul 1889—Westerville, near Cols., E. V. Wilcox; 4 Oct 1890—Central College, E. V. Wilcox; 5 Oct 1890—Westerville, in vacant lot, escaped, E. V. Wilcox.

11. COLLINSONIA L.

Nearly glabrous; blades ovate, serrate, acuminate, large, uppermost usually sessile; flowers slender-pedicled, in terminal panicle or raceme; calyx somewhat 2-lipped; corolla with odor of lemon, 1-2 cm long, yellow, lowest lobe much longer than others, fringed; stamens much exerted, diverging; pollen-sacs divergent.

1. *Collinsonia canadensis* L.

Richweed, Horse Balm, Stoneroot

Erect herbs; leaves opposite; racemes several, in an open terminal panicle; calyx appearing actinomorphic; corolla zygomorphic, bilabiate, yellow, lower median lobe fringed; stamens 2.

REFERENCES: Riddell 1834:157 (dense and shady woods); Sullivant 1840:35; Craig 1890:95 (I found a single specimen last August in the W part of the island near the catalpa grove); Selby & Craig 1890:14; Cooperrider 1995:425 (illus. p. 424).
HERBARIUM RECORDS: [date?]-Upper Neil's Run, Cols., Craig; 20 Jul 1890—Glover's Woods, Selby; 28 Aug 1890—Cols., E. V. Wilcox; Aug 1892—near Cols. & Cols., E. M. Wilcox; Sep 1931—Red Hills, Chapman; 26 Sep 1933—Franklin Co., [coll.?]; 17 Sep 1982—Blendon Woods, Owens; 16 Aug 1987—Highbanks Metro Park (Delaware Co.), closed woods, Witsberger 961; 3 Aug 1990—S side of McOwen Rd., just W of Dixon Rd., open woody area, Jefferson Twp. (W of Franklin/Licking Co. Line), Lowden 4508.

12. PERILLA L.

Rather coarse; blades ovate, serrate, purple, long-petioled; flowers small, in axils of bracts in terminal and axillary spikelike racemes; calyx becoming 2-lipped in fruit and distended on lower side; corolla white, about equally 2-lipped; stamens 4; pollen-sacs divergent.

1. **Perilla frutescens* (L.) Britton

Beefsteak-plant

Adventive (native of India)

Leaves long petiolate, ovate to oblong-ovate, coarsely serrate to dentate; flowers in terminal and axillary racemes, inflorescence open at maturity; calyx markedly zygomorphic, hairs septate; corolla bilabiate, white, stamens 4.

REFERENCE: Cooperrider 1995:425 (illus. p. 424).
HERBARIUM RECORDS: 4 Nov 1940—Franklin Co., Clum; 1 Oct 1990—along Morse Rd. at Rt. 1-71 overpass, NE Cols. Quad., Cusick 29286.

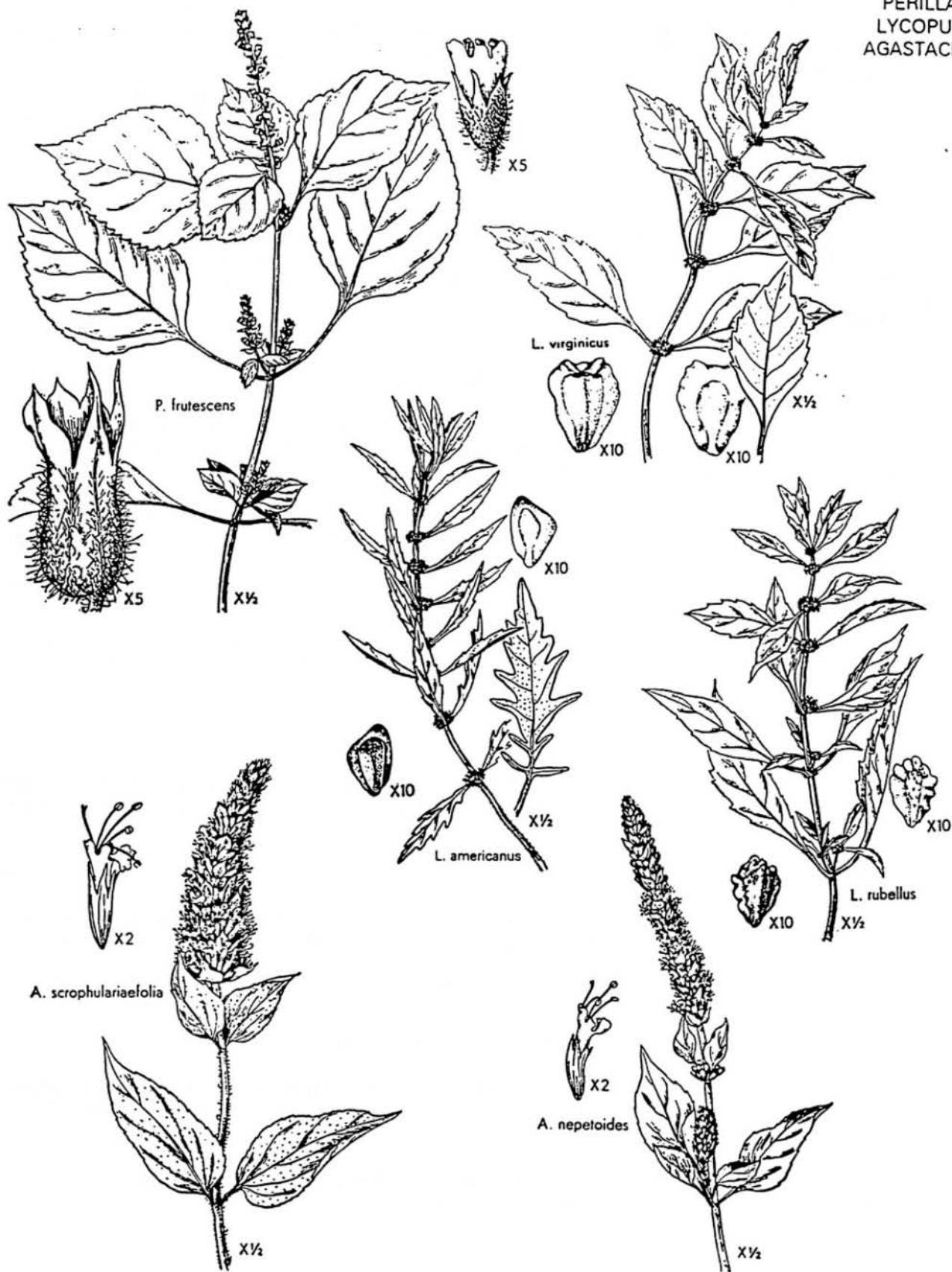
13. LYCOPUS L. Water-horehound

Usually with long stolons, often with tubers; blades sessile or petioled, toothed or lobed, cuneate at base; flowers small, in dense axillary clusters; calyx nearly equally 4-5-toothed; corolla white, the 4 lobes nearly equal, hairy in throat; anther-bearing stamens 2; pollen sacs parallel.

a Calyx-lobes acute or obtuse, not exceeding the mature nutlets; nutlets tubercled. 1. *L. virginicus*

a' Calyx-lobes acute or acuminate, exceeding the mature nutlets.

PERILLA
LYCOPUS
AGASTACHE



- b Lower blades lobed or spreading-toothed; nutlets with smooth edge, not tubercled. 2. *L. americanus*
- b' Blades serrate; summit of the 4 nutlets truncate, tubercled. 3. *L. rubellus*

1. *Lycopus virginicus* L. var. *virginicus*

Virginia Bugle-weed, Virginia Water-horehound

Stems pubescent, hairs appressed; plants often with red pigment; calyx lobes triangular, obtuse or acute at apex, not exceeding the mature nutlets; corolla white, lobes erect; mature nutlets truncate at summit, inner and outer edges tubercled.

REFERENCES: Riddell 1834:157 (denuded river banks); Sullivant 1840:35 (*Virginicus* L.); Selby & Craig 1890:14; Kellerman & Werner 1893:229 (margin of brook near High St., Aug 1891); Cooperrider 1995:416 (illus. p. 417).

HERBARIUM RECORDS: [ca. 1830s]—Worthington, *J. Paddock* (URB); 1 Oct 1897—Cols., *W. Kellerman*; 7 Sep 1899—Worthington, *Selby*; 12 Sep 1991—Hoover Dam Park, N of entrance W of Cabbage Rd., along reservoir inlet, *Lowden 4826*.

2. *Lycopus americanus* Muhl.

Cut-leaved Water-Horehound

Leaves short-petiolate; blades of lower leaves pinnatifid, deeply lobed to serrate, upper leaves with fewer teeth; leaf surfaces glabrous except for a few hairs on veins of undersurface; flowers in axillary clusters; bracts small; calyx lobes attenuate-cuspidate at apex, lobes 1.5 mm long, exceeding height of mature nutlets; corolla nearly actinomorphic, white equalling or slightly exceeding calyx; fertile stamens 2.

REFERENCES: Riddell 1834:157 (*Lycopus europaeus*, denuded river banks); Sullivant 1840:35 (*Lycopus sinuatus* Elliott); Craig 1890:95 (*Lycopus sinuatus* Elliott, common in moist places along the lagoons near the island, 10 Aug 1882); Selby & Craig 1890:14 (*Lycopus sinuatus* Elliott); Cooperrider 1995:418 (illus. p. 417).

HERBARIUM RECORDS: 9 Aug 1890—OSU campus, Cols., *Hine*; 30 Aug 1890—OSU Farm, Cols., *Selby*; 24 Sep 1892—Georgesville, *Werner*; 18 Sep 1911—2½ mi. E of Westerville, *Hanawalt*; 1 Aug 1982—Blendon Woods, *Owens*; Summer 1988—along the Olentangy R., OSU campus, Cols., *DeLong*; 28 Aug 1988—Highbanks Metro Park (Delaware Co.), wet meadow, *Morawetz 91'* (OS, OWU); 5 Aug 1989—along Godown Rd., between Commerce Pl. & Le Anne Marie Circle, Perry Twp., *Lowden 4244*; 28 Aug 1989—Battelle Darby Creek Metro Park, along N bank of Little Darby Creek opposite Georgesville, Pleasant Twp., *Lowden 4301*; 9 Aug 1990—S side of Hibbs Rd., 1 mi. E of Rt. 104, Jackson Twp., *Lowden 4538*; 9 Aug 1990—S side of Berger Rd., 1 mi. E of Richardson Rd., Madison Twp., *Lowden 4550*; 10 Aug 1992—Pickerington Ponds, wetland wildlife area, just S of Wright Rd. & E of Bowen Rd., Madison Twp., *Lowden 5026*.

NOTE: Most likely Riddell's reference to *Lycopus europaeus* belongs here.

3. *Lycopus rubellus* Moench

Stalked Water-horehound

Leaves short-petiolate; margins serrate; calyx lobes acute-acuminate; corolla white, 3.5-4 mm long, conspicuously exceeding calyx.

REFERENCES: Riddell 1836:14 (*Lycopus obtusifolius* Vahl, *Paddock*); Selby & Craig 1890:14; Cooperrider 1995:419 (illus. p. 417).

HERBARIUM RECORDS: 10 Aug 1890—Cols., *Selby*; 31 Aug 1890—Broad St. Pike, *Selby*; 6 Nov 1984—Gahanna Woods State Nature Preserve, in large buttonbush swamp, SW corner of preserve (V), *Tyrell*.

14. AGASTACHE Clayton Giant Hyssop

Tall; leaves petioled, ovate, serrate; flowers in usually dense terminal spikes; calyx 5-toothed, 15-nerved, oblique; corolla 2-lipped, middle lobe of lower lip crenate; stamens 4, exserted, upper pair the longer; pollen-sacs nearly parallel.

- a Calyx about 6 mm long, lobes less than 2 mm long; corolla greenish-yellow; blades densely short-pubescent beneath. 1. *A. nepetoides*
- a' Calyx 7 mm long or more, lobes 2-3 mm long; corolla pink or purplish; blades glabrous or villous beneath. 2. *A. scrophulariaefolia*

1. *Agastache nepetoides* (L.) Kuntze

Yellow Giant-hyssop

Stems glabrous to slightly pubescent; leaves petioled, ovate, serrate; flowers in dense spikes, longer than wide; calyx lobes completely green, acute to obtuse at apex; corolla greenish to yellow.

REFERENCES: Riddell 1834:157 (*Hyssopus nepetoides*); Sullivant 1840:35 (*Lopanthus nepetoides* Benth.); Craig 1890:96 (*Lopanthus nepetoides* Benth., sparingly in the woods around the island, 8 Aug 1882; 8 Jun 1884, 21 Aug 1887); Selby & Craig 1890:14 (*Lopanthus nepetoides* Benth.); Cooperrider 1995:392 (illus. p. 391).

HERBARIUM RECORDS: 8 Aug 1882—Olentangy R., *W. Green*; Aug 1890—near Cols., *E. V. Wilcox*; 9 Aug 1890—Rock Fork, *Selby*; 14 Aug 1890—Cols., *Werner* (CLM); 20 Aug 1892—Cols., *Bogue*; 6 Aug 1897—Hamilton Twp., *W. Kellerman*; 13 Aug 1898—Cols., *W. Kellerman*; 12 Oct 1901—So. Cols., *Eckman*; 31 Jul 1932—Red Hills, *Hicks*; 19 Jul 1986—N of Morse Rd., along stream behind the Ohio School for the Blind, *T. Lammers & Spooner 5959*; 5 Aug 1992—Lower Scioto Park, W bank Scioto R., Scioto Blvd., N of Greenlawn Ave., Marion Twp., *Lowden 5013*; 25 Jul 1993—6170 Middlebury Dr., weed in garden, Worthington, Sharon Twp., *Lane*.

2. *Agastache scrophulariaefolia* (Willd.) Kuntze

Purple Giant-hyssop

Stems with long hairs on angles; leaves petioled, ovate, serrate; flowers in dense spikes, longer than wide; calyx lobes acute to subacuminate and whitish at apex, green below; corolla pink or purplish.

REFERENCES: Sullivant 1840:35 (*Lopanthus scrophulariaefolius* Benth.); Selby & Craig 1890:14 (*Lopanthus scrophulariaefolius* Benth.).

HERBARIUM RECORD: 1840—Cols., Sullivant.

NOTE: Not mapped for Franklin Co. by Cooperrider 1995:392 (illus. p. 391).

15. *NEPETA* L. Catnip

Canescent, much branched; blades petioled, ovate, crenate-dentate; flowers in rather dense terminal and axillary clusters; calyx 15-nerved, unequally 5-toothed; corolla whitish dotted with purple, about 1 cm long, 2-lipped; stamens 4, ascending under upper corolla-lip, upper pair the longer; pollen-sacs divergent.

1. **Nepeta cataria* L.

Catnip

Naturalized (native of Eurasia)

Plants much branched, gray or white canescent; leaves truncate to cordate at base, margins coarsely serrate-dentate; flowers in dense terminal bracteate inflorescences; calyx zygomorphic; corolla bilabiate, white with purple dots; stamens 4. Weed.

REFERENCES: Riddell 1834:157 (naturalized); Sullivant 1840:36 (naturalized plants); Craig 1890:54, 56, 96 (common in waste places and in fence rows, 8 Jul 1882, 29 Jun 1887, University Farm Sep-Oct 1887 & 12 Nov 1888); Selby & Craig 1890:14 (introduced); Cooperrider 1995:394 (illus. p. 393).

HERBARIUM RECORDS: 26 Aug 1882—Cols., Devol; Jul 1888—OSU campus, Cols., Craig; Jul 1888—Cols., Craig; 9 Jul 1890—Cols., Hine; 19 Apr 1898—Franklin Co., Fullmer; 16 Nov 1906—N Cols., Spease; [ca. 1911]—Westerville, fencerows, Hanawalt; 7 Aug 1986—RR yard, SE jct. of Cleveland Ave. & 1st Ave., SE Cols. Quad., Burns 4068 (KE); 10 Jul 1990—jct. of Lazelle Rd. with Flint Rd., along RR tracks, Sharon Twp., Lowden 4435.

16. *GLECHOMA* L. Ground-ivy

Stem prostrate; blades reniform or rounded, crenate, petioled; flowers short-stalked, 1-few in axils; calyx nearly regular, 15-nerved; corolla blue, 1-2 cm long, tube long-exserted from calyx, limb 2-lipped; stamens 4, ascending under upper lip, inner pair the longer; pollen-sacs divergent.

1. **Glechoma hederacea* L.

Ground-ivy, Gill-over-the-ground

Naturalized (native of Eurasia)

Stems prostrate; leaves petiolate, orbicular to reniform, lower surface gland-dotted; flowers on pedicels, few to solitary in leaf axils; calyx appearing actinomorphic; corolla bilabiate, purple to purplish-blue; stamens 4, included.

Syn.: *Nepeta glechoma* Benth.

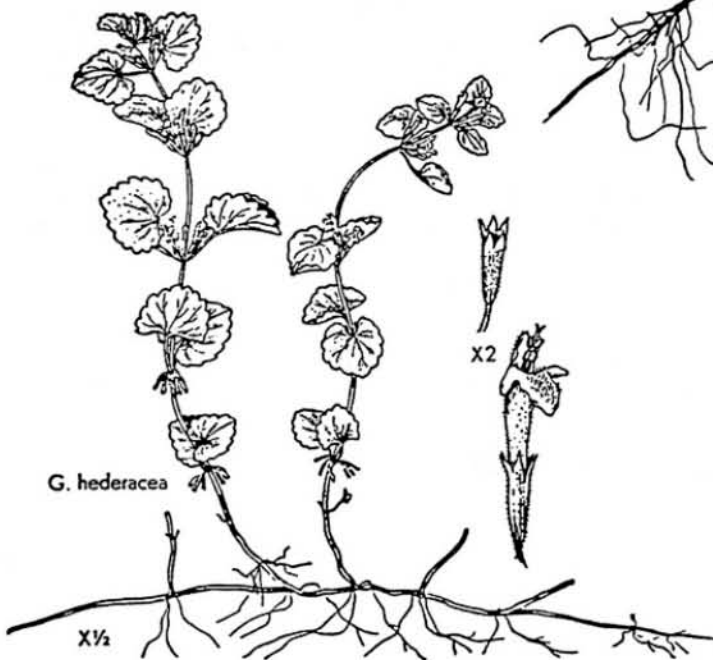
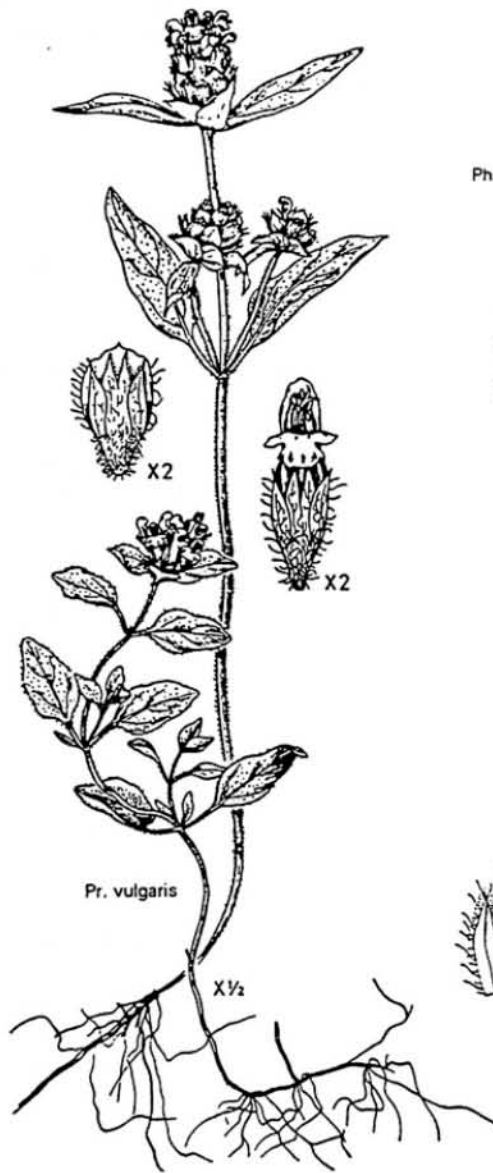
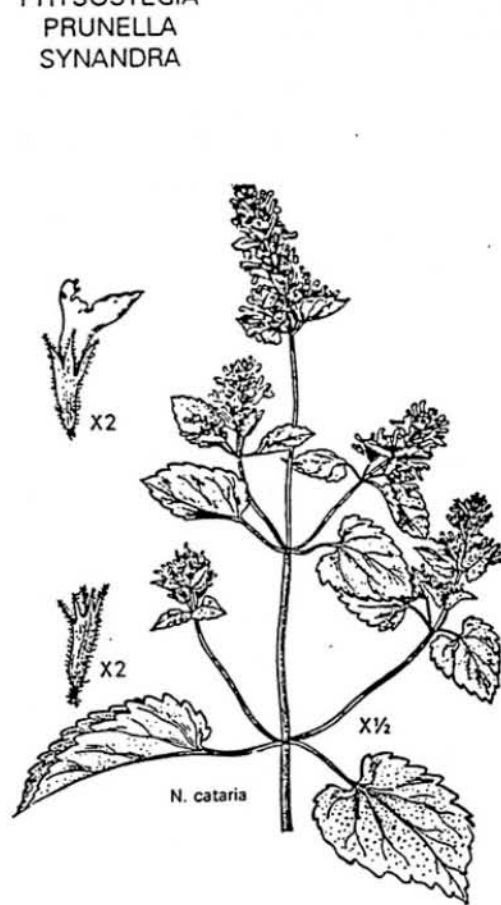
REFERENCES: Riddell 1834:157; Sullivant 1840:36, 59; Craig 1890:96 (very abundant everywhere, in the woods, along the brook, and around the island, 20 Apr 1882, 30 Apr 1883, 23 Apr 1884, 5 May 1885, 17 Apr 1886, 11 Apr 1887, 10 Apr 1888, 4 Apr 1889); Selby & Craig 1890:14; Cooperrider 1995:394 (illus. p. 393).

HERBARIUM RECORDS: May 1888—Cols., Craig; 1889—Cols., Selby; 16 May 1892—near the Olentangy, Stone; 16 May 1893—Cols., W. Kellerman; 12 May 1896—Worthington, M. Wright; 25 May 1899—Blenden [Blendon], Helfrich; 25 May 1900—Franklin Co., Lamb; 21 Apr 1919—Hayden's Fall, Scioto R., E. & S. Raymond; May 1922—Westerville, grassy lawn, Eastman; 9 May 1924—Westerville, open fields, Botkin; 28 May 1924—Westerville, moist bank, Cooper; 18 Apr 1966—adjacent to greenhouse, Battelle Mem. Inst., Kenny Rd., Clinton Twp., Anderson (KE); 15 May 1977— $\frac{1}{4}$ mi. S of Trabue Rd. along the Scioto R., Fazenbaker; 17 Apr 1982—OSU Agric. Campus, field off Kenny Rd. between Lane & Ackerman Rd., Cols., Kromer 6; 12 Apr 1986—field E of OSU S woodlot, 100 yard N of Kinnear Rd., Cols., Hollander 002; 25 Apr 1986—front of Worthington High School Environmental Bldg., off Rt. 161 E side of bike trail, Benkowski 11; 10 May 1986—Highbanks Metro Park (Delaware Co.), open scrub, Witsberger 900 (OS, OWU); 16 May 1986—front yard of 2402 East Ave., weedy, Cols., R. Burnes 19; 15 May 1988—corner of Indianola & E. Patterson Ave., Cols., Kelly 12; 8 May 1989—Overbrook Drive Ravine just E of N. High St., Clinton Twp., Lowden 4041; 19 May 1990—intersection of Blacklick Creek & Morse Rd., Jefferson Twp., Lowden 4322; 9 Apr 1991—Antrim Lake, E of Rt. 315, Sharon Twp., Lowden 4571.

17. *PHYSOSTEGIA* Benth. False Dragonhead

Stem smooth; blades lanceolate, sharply serrate; flowers showy, in a terminal spike, 4-ranked; calyx membranous, nearly regular; corolla 2-3 cm long, lavender-pink or white, much longer than calyx, 2-lipped; stamens 4, outer pair the longer, pollen-sacs parallel.

NEPETA
GLECHOMA
PHYSOSTEGIA
PRUNELLA
SYNANDRA



1. *Physostegia virginiana* (L.) Benth.

False Dragonhead, Lion's-heart

Leaves sessile, narrowly lanceolate, margins sharply serrate; flowers in dense terminal racemes; calyx actinomorphic; corolla bilabiate, lavender-pink to white; stamens 4.

REFERENCES: Riddell 1834:157 (*Dracophalum variegatum*, wet prairies); Riddell 1835:81 (*Dracocephalum variegatum* Vent., Duncan Plains, wet prairies); Sullivant 1840:36, 59; Craig 1890:96 (I found a small cluster this spring on a peninsula in the swamp NE of the island, 17 Aug 1882); Selby & Craig 1890:14; Cooperrider 1995:395 (illus. p. 399).

HERBARIUM RECORDS: 1833—Darby Plains, *J. Paddock Collection* (ILL); 1840—Cols., *Sullivant*; Jun 1888—Island, Cols., *Craig*; Aug 1891—near Cols., *E. M. Wilcox*; 3 Oct 1891—Big Darby, Cols., *Selby* (OS, WOOS); 16 Aug 1892—Cols., *Bogue*; 24 Sep 1892—Big Darby, *Selby*; 10 Sep 1898—Cols., *W. Kellerman*; 11 Sep 1971—Cols. W of OSU campus along Olentangy R. near Tower Dorms & Battelle, *Roberts 2053*; 13 Sep 1982—E bank of the Olentangy R. between Dodridge St. and Lane Ave., Cols., *T. Lammers 4931* (KE, OS); 15 Sep 1985—Highbanks Metro Park (Delaware Co.), near Olentangy R., *Witsberger 852* (OWU); 23 Sep 1986—Highbanks Metro Park (Delaware Co.), along river, *Watts 353* (OS, OWU); 11 Aug 1989—along E bank of the Scioto R., Trabue-Murphy landing, just S of Fishing Rd. bridge, Perry Twp., *Lowden 4272*; 28 Aug 1989—Battelle Darby Creek Metro Park, N bank of Little Darby Creek, opp. Georgesville, Pleasant Twp., *Lowden 4310*.

NOTE: Check Cantino (1982) to see if specimens can be separated into subspecies, subspecies *virginiana* and subspecies *praemorsa* (Shinners) Cantino.

18. PRUNELLA L. Self-heal, Carpenter-weed

Blades ovate to lanceolate, entire or nearly so, petioled; inflorescence a close spike or head, flowers in axils of wide bracts; calyx strongly 2-lipped, lips closed in fruit, upper lip broad and truncate, 3-lobed or -toothed, lower lip of 2 narrow lobes; corolla blue, pink, or white, 1-1.5 cm long, 2-lipped; stamens 4, outer pair the longer; pollen-sacs divergent.

1. *Prunella vulgaris* L. var. *vulgaris*

Self-heal, Heal-all, Carpenter-weed

Leaves petiolate, lanceolate or lance-ovate, undersurface glabrous to slightly pubescent; flowers in dense terminal head-like spikes, longer than wide, with broad reniform bracts; calyx zygomorphic; corolla bilabiate, blue-purple to white, stamens 4.

REFERENCES: Riddell 1834:157; Sullivant 1840:36; Craig 1890:96 (*Brunella vulgaris* L., grows in the woods and near the lake, 18 Jun 1887); Selby & Craig 1890:14 (*Brunella vulgaris* L.); Cooperrider 1995:394 (illus. p. 393).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 26 Jul 1882—OSU farm, Cols., *W. Green*; Jun 1888—Cols., *Craig*; 26 Jul 1890—Cols., *Hine*; 8 Aug 1890—Cols., *Werner* (CLM); Fall 1899—Cols., *J. H. Schaffner*; 6 Sep 1911—Westerville, fencerows, woods & fields, *Hanawalt*; 10 Jul 1982—Blendon Woods, *Owens*; 16 Jul 1986—Highbanks Metro Park (Delaware Co.), field, *Watts 321* (OS, OWU); 5 Aug 1989—along Godown Rd., between Commerce Pl. & Le Anne Marie Circle, Perry Twp., *Lowden 4249*; 11 Aug 1989—E bank of Scioto R., just S of Fishing Rd. bridge, Perry Twp., *Lowden 4271*; 26 Jun 1990—along S side of Rt. 71 (92 mi. mark), just NW of Harrisburg, Pleasant Twp., *Lowden 4418*.

19. SYNANDRA Nutt.

Pubescent; blades broadly cordate-ovate, long-petioled, crenate-serrate; flowers sessile, leafy-bracted, in terminal spike; calyx thin, lobes unequal, sometimes 4-lobed; corolla greenish-yellow or -white, 3 cm long or more, 2-lipped, tube slender below, widened above; stamens 4, outer pair the longer, ascending under upper lip, filaments hairy; pollen-sacs divergent.

1. †*Synandra hispidula* (Michx.) Britton

Synandra

Stems pubescent; leaves petiolate; blades broadly ovate, margin crenate, base cordate; flowers solitary in the axils of reduced leaves or bracts; calyx lobes unequal, corolla zygomorphic, 3.0-3.5 cm long, markedly bilabiate, yellow to white, with purple strips on throat of lower lip; stamens 4, included.

REFERENCES: Riddell 1834:157 (*Synandra grandiflora*, dense and shady woods); Sullivant 1840:36 (*Synandra grandiflora* Nutt.); Selby & Craig 1890:14 (*Synandra grandiflora* Nutt.); Roberts & Cooperrider 1982:65; McCance 1984:A-312; Cooperrider 1995:395 (illus. p. 397).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Jun 1889—Island in the Scioto R., N of Arlington, *Gould*; 20 May 1894—near Cols., *A. Wilcox*; Summer 1940—Franklin Co., *Waller*; 10 Jun 1980—Blendon Woods Metro Park, wooded floodplain of small stream, S side of Brookside Trail, just SE of jct. of Cherry Ridge Trail, 0.2 mi. S of picnic area, Blendon Twp., *Cusick 20116* (KE, MU, OS); 5 Jun 1983—Blendon Woods, *Owens*.

20. LAMIUM L. Henbit, Dead-nettle

Blades reniform to ovate, lower petioled, upper sometimes sessile; flowers in axillary clusters, these sometimes aggregated in terminal spikes; calyx 5-nerved, nearly equally lobed, lobes tapering to slender points; corolla pink- or red-purple to white, 2-lipped, lower middle lobe clawed at base; stamens 4, outer pair the longer; pollen-sacs divergent.

- a All leaves petioled; corolla with a ring of hairs within.
- b Leaves green, often blotched with white, internodes not short; corolla 2 cm long or more. 1. *L. maculatum*
- b' Upper leaves often purple-red; upper internodes very short, hence flowers in dense terminal leafy-bracted spike; corolla 1.5 cm long or less. 2. *L. purpureum*
- a' Upper leaves sessile or clasping, round-ovate to reniform; corolla without a ring of hairs within; flowers sometimes cleistogamous, the corolla then small, tubular, with hairy round tip, failing to open. 3. *L. amplexicaule*

1. **Lamium maculatum* L.

Spotted Dead-nettle, Spotted Henbit

Cultivated (native of Europe and adj. Asia)

Stems ascending to suberect; mid and upper leaves petiolate, blades triangular-ovate; corolla more than 20 mm long, curved at base, upper lip very helmet-shaped.

HERBARIUM RECORDS: 1 Jun [yr.?]—Westerville, garden, *Bright*; 15 May 1986—collected in a private garden, E. Northwood Ave., Cols., *Blanco*.
NOTE: Not mapped for Franklin Co. by Cooperrider 1995:400 (illus. p. 397).

2. **Lamium purpureum* L.

Purple Dead-nettle, Red Henbit

Naturalized (native of Eurasia)

Stems ascending to suberect; upper leaves and bracts petiolate, usually reddish or purplish; calyx actinomorphic, lobes long-acuminate and spreading; corolla pinkish-purple.

REFERENCE: Cooperrider 1995:400 (illus. p. 397).

HERBARIUM RECORDS: 12 May 1892—Alum Creek, Cols., *Detmers*; 4 May 1923—Olentangy R. bottom near Cols., *Sande*; 15 May 1924—Lincoln St., Westerville, *F. Harris*; 19 May 1935—Franklin Co., *E. Thomas*; 19 May 1937—Cols., *Waller*; 14 Dec 1959—OSU Horticulture Garden, Cols., *Cusick*; 15 Apr 1961—dike along Olentangy R. W of OSU Stadium, *Cusick*; 18 Apr 1966—adjacent to greenhouse, Battelle Mem. Inst., Kenny Rd., Clinton Twp., *Anderson 18* (KE); 19 May 1969—Park of Roses, Cols., *Wiley 18*; 26 Apr 1970—Clintonville, along ball field of Whetstone Park, *W. Owen 103*; 3 May 1970—Clintonville, in rocks along Olentangy R. in Northmoor Park, *W. Owen 109*; 30 Apr 1980—Whetstone Rec. Center, *Devault*; 12 Apr 1983—Pickerington Marsh, *Owens*; 17 Apr 1986—Highbanks Metro Park (Delaware Co.), picnic area, *Watts 277* (OS, OWU); 10 May 1986—Highbanks Metro Park (Delaware Co.), open woods, *Witsberger 902* (OS, OWU); 8 May 1989—Overbrook Drive Ravine, just E of N. High St., Clinton Twp., *Lowden 4045*; 9 Apr 1991—Antrim Lake, E of Rt. 315, Sharon Twp., *Lowden 4568*; 11 Apr 1991—Antrim Lake, E of Rt. 315, Sharon Twp., *Lowden 4579*.

3. **Lamium amplexicaule* L.

Common Henbit, Dead-nettle

Naturalized (native of Eurasia & N Africa)

Stems erect to suberect; upper leaves sessile, orbicular to reniform, wider than long; flowers sessile, clustered in leaf axils; calyx actinomorphic, lobes nearly equal; corolla zygomorphic, reddish-purple, more than twice as long as calyx, stamens 4.

REFERENCES: Craig 1890:97 (common along the fence W of the seed barn, and elsewhere, 19 Apr 1882, 28 Apr 1883, 28 Apr 1884, 7 May 1885, 15 Apr 1887, 1 May 1888, 19 Apr 1889, University Farm 15 Apr & 8 Nov 1887); Selby & Craig 1890:14 (introduced); Cooperrider 1995:398 (illus. p. 397).

HERBARIUM RECORDS: May 1888—Cols., *Craig*; Spring 1889—Ohio Agricultural Experiment Station, *Craig*; Apr 1890—OSU campus, near Cols., herb. *E. M. Wilcox*; 9 May 1891—Big Darby, *Selby*; 26 Apr 1895—Cols., *W. Kellerman*; 18 Apr 1966—area adjacent to greenhouse, Battelle Mem. Inst., Kenny Rd., Clinton Twp., *Anderson 2072* (KE, OS); 1 May 1983—Blendon Woods, *Owens*; 3 Jun 1984—weedy flowerbeds at City Hall, W. Broad St. & Front St., SW Cols. Quad., *Cusick 23454*.

21. LEONURUS L. Motherwort

Blades toothed or lobed; flowers small, in dense axillary clusters subtended by leaflike bracts; calyx with 5 nearly equal spine-tipped teeth, the 2 lower somewhat deflexed; corolla white or pink, 2-lipped; stamens 4, ascending under concave upper lip, inner pair a little longer; pollen-sacs parallel.

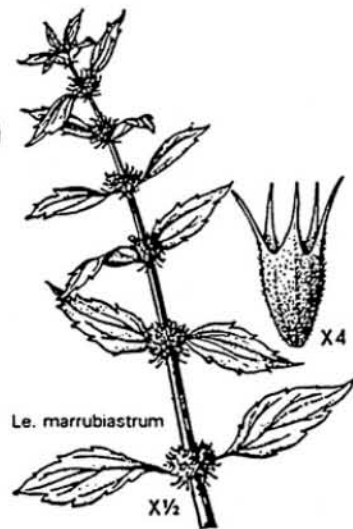
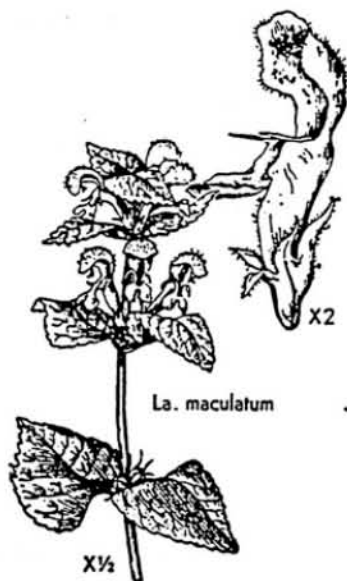
- a Lower blades palmately-cleft; corolla pink, upper lip long-pubescent; calyx 5-nerved. 1. *L. cardiaca*
- a' Lower blades toothed; corolla whitish, upper lip short-pubescent; calyx 10-nerved. 2. *L. marrubiastrum*

1. **Leonurus cardiaca* L.

Motherwort

Naturalized (native of Asia)

LAMIUM
LEONURUS
STACHYS



Stems hard; leaves mostly 3-lobed; flowers sessile, in clusters in upper leaf axils; calyx appearing actinomorphic, terminating in 5 spines; corolla bilabiate, pink to pale purple, upper lobe with numerous long villous hairs; stamens 4, included or slightly exerted.

REFERENCES: Riddell 1834:157 (naturalized); Sullivant 1840:35 (naturalized plants); Craig 1890:96 (common in fields and waste places, 11 Jun 1882, 7 Jun 1884, 29 May 1887, 9 Jun 1888, University Farm Sep & Oct 1887 and 4 & 8 Nov 1888); Selby & Craig 1890:14 (introduced); Cooperrider 1995:396 (illus. p. 397).

HERBARIUM RECORDS: 14 Jun [year?]-N Cols., Woodbury; Jul 1888-Cols., Craig; 11 Jul 1892-Cols., Bogue; 27 May 1896-Clintonville, M. Wright; 24 May 1900-Cols., J. H. Schaffner; Jul 1911-Alum Creek bank, 2 mi. S of Westerville, Hanawalt; Summer 1938-OSU Botanical Gardens, C. Jones; 19 May 1974-OSU Botanical Garden, Cols., D. Johnson; 1 Jul 1982-Blendon Woods, Owens; 8 Jun 1986-Highbanks Metro Park (Delaware Co.), Shale Creek Woods, Wisberger (OWU); 12 Jul 1986-W bank of the Olentangy R., just N of the Dodridge St. bridge, mesic forest on floodplain, Lammers & Spooner 5956; 26 May 1987-OSU campus, near Clinic Dr. & Perry St., Jen 58; 20 Jun 1987-between 5921-5945 N. High St., Worthington, 1 mi. S of Rt. 161 & Rt. 23 intersection, M. Hoffman 4.

2. **Leonurus marrubiastrum* L.

Horehound-motherwort

Adventive (native of Europe & N Asia)

Leaves coarsely serrate; bracts half to fully as long as the calyx; calyx tube inconspicuously 10-nerved, regular; corolla scarcely surpassing the calyx; stamens 4.

HERBARIUM RECORD: 23 Sep 1991-weedy E bank of Scioto R., rare, a few plants, just N of I-270, Hamilton Twp., SW Cols. Quad., McCormac 4354.

NOTE: Not mapped for Franklin Co. by Cooperrider 1995:396.

22. STACHYS L. Hedge-nettle

Flowers in whorls in axils of bracts, the whorls in terminal dense or interrupted spikes; calyx nearly regular; corolla rose-purple or yellow, 2-lipped, upper lip concave; stamens 4, ascending under upper lip, outer pair the longer; pollen-sacs divergent.

a Stem glabrous or nearly so on sides, glabrous or pubescent on angles.

b Petioles 1-3 cm long; calyx and both surfaces of blades glabrous or nearly so; stem glabrous or some short thick hairs on angles; margin of bracts not ciliate above base. 1. *S. tenuifolia*

b' Petioles less than 1 cm long; blades often hairy on veins beneath and with stiff appressed ones on upper surface; bristlelike hairs of stem-angles deflexed; bracts and calyx lobes bristly ciliate. 2. *S. hispida*

a' Stem pubescent on sides and usually also on angles, hairs or some of them often bristlelike, often bulbous-based; calyx pubescent. 3. *S. cordata*

1. *Stachys tenuifolia* Willd. var. *tenuifolia*

Common or Smooth Hedge-nettle

Stems essentially glabrous; leaves petiolate; inflorescence bracts not ciliate above the base; calyx lobes not bristly ciliate; corolla lavender-pink; stamens 4.

REFERENCES: Riddell 1836:580 (*Stachys glabra* Riddell; Type locality, banks of streams, and in low woods, Worthington); Cooperrider 1995:401 (illus. p. 402).

HERBARIUM RECORDS: 7 Sep 1890-Lake Park, Cols., Selby; 20 Aug 1893-Cols., Werner (CLM, OS); Summer 1988-OSU campus, along the Olentangy R., Cols., DeLong; Summer 1988-along Big Darby Creek between I-70 & Little Darby Creek, Galloway Quad., DeLong.

2. *Stachys hispida* Pursh

Hispid Hedge-nettle

Stem-angles with bristle-like hairs deflexed; leaves petiolate; leaf blades hairy on veins beneath with appressed ones on upper surface; inflorescence bracts and calyx lobes bristly ciliate; corolla bilabiate, lavender-pink; stamens 4. Syn.: *S. tenuifolia* Willd. var. *hispida* (Pursh) Fernald

REFERENCES: Riddell 1834:157 (*Stachys aspera*, [standing pools]); Sullivant 1840:36 (*Stachys aspera* Michx.?). Craig 1890:97 (*Stachys aspera* Michx., this was found on the island last summer, 11 Aug 1882, 7 Jun 1884, 29 May 1887, 9 Jun 1888; *Stachys aspera* Michx. var. *glabra* A.Gray, grows sparingly along the river, 27 Jul 1882); Selby & Craig 1890:14 (*Stachys aspera* Michx.); Selby 1892a:110 (*Stachys aspera* Michx. var. *glabra* A.Gray, Olentangy, Werner); Kellerman & Werner 1893:228 (*Stachys aspera* Michx. var. *glabra* A.Gray); Cooperrider 1995:401 (incl. under *Stachys tenuifolia* Willd.).

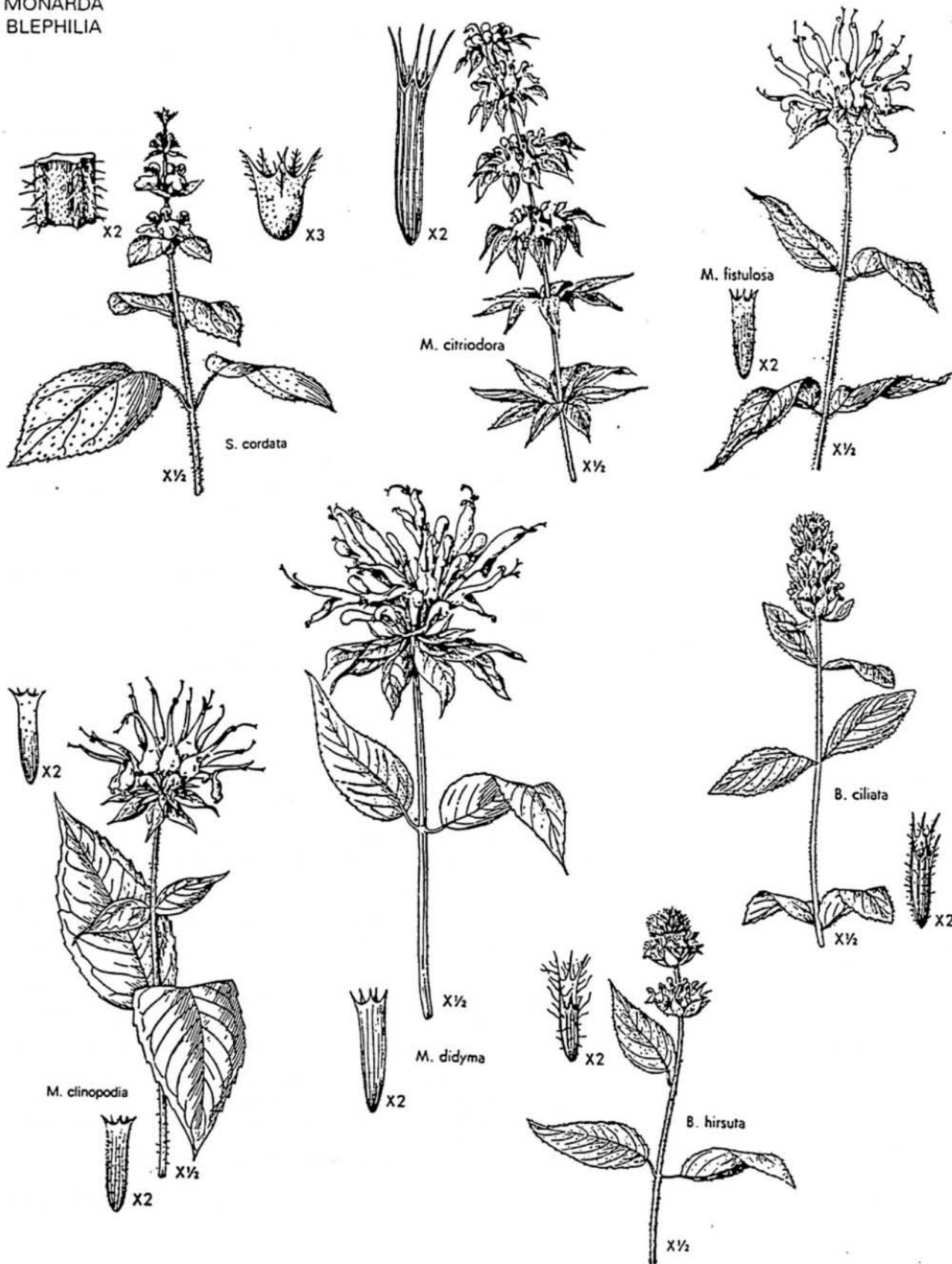
HERBARIUM RECORDS: 19 Aug 1882-Olentangy R., Cols., coll.?.; Spring 1889-near Cols., Craig; 1892-Cols., Werner; 28 Jul 1948-Cols., Cook; 23 Aug 1960-field along Olentangy R. about ½ mi. N of Big Bear Supermarket (Lane Ave.), Cols., Cusick; 31 Jul 1982-Blendon Woods, Owens; 7 Jul 1986-Piedmont Rd., E of N. High St., NW Cols. Quad., Cusick 25475; 3 Jul 1987-Highbanks Metro Park (Delaware Co.) mound bluffs, Higgins; Summer 1988-OSU campus, along the Olentangy R., DeLong.

NOTE: References to *Stachys aspera* belong here. Need to find out if *Stachys aspera* var. *glabra* can apply to which variety.

3. *Stachys cordata* Riddell

Heart-leaved Hedge-nettle

STACHYS
MONARDA
BLEPHILIA



Stems pubescent on both the sides and the angles, especially upper part, with stipitate glands mixed with longer hairs; lower leaf petioles more than 2 cm long; blades ovate, obovate, or lanceolate, usually cordate at base, appressed strigose above, pubescent below at least on veins; flowers in clusters forming rather open spikes; calyx actinomorphic, lobes less than half as long as calyx tube; corolla zygomorphic, bilabiate, pink to purple; stamens 4. Syn.: *S. nuttallii* Shuttlew. ex Benth., *S. riddellii* House

REFERENCES: Riddell 1834:157 (*Stachys sylvatica*, open woods); Sullivant 1840:36 (*Stachys sylvatica* L.?); Selby & Craig 1890:14; Cooperrider 1995:401 (illus. p. 402).

HERBARIUM RECORDS: 9 Jul 1882—Northwood, Cols., *Devol*; 30 Jun 1890—Neils Run, near Cols., *Hine*; 8 Jul 1892—Cols., *Bogue* (BGSU, OS); 16 Jul 1986—Highbanks Metro Park (Delaware Co.), woods, *Watts* 325 (OWU).

23. MONARDA L. Horse Mint, Wild Bergamot

Blades ovate or lanceolate, petioled; flowers rather large, in terminal and sometimes also in axillary dense clusters subtended by foliaceous bracts; calyx nearly regular, 13-15-nerved; corolla strongly 2-lipped; anther-bearing stamens 2, exerted or included under narrow erect or arched upper lip; pollen-sacs divergent.

Monarda citriodora Cerv. (Lemon-mint, native of W U.S.) was collected at Sellsville (27 Oct 1890—Sellsville, Cols., *Selby*) and reported on by Selby & Craig 1890:14 (recently introduced from western states); Lazenby 1891:302 (not known to occur elsewhere in the State); Selby 1891b:75 (western plants occurring near Cols., found on the circus grounds; range Nebraska to Texas); Selby 1891c:149 (western plants collected the last of October about the winter-quarters of Sells Brothers' Circus, at Sellsville, near Cols.). Not treated by Cooperrider 1995:405.

- a Corolla lavender, pink, white or yellow.
- b Corolla pale lavender to deeper purple, white or pink, upper lip villous at tip; bracts green, gray, or pink-tinged; calyx densely villous in throat. 1. *M. fistulosa*, blades villous beneath and hairs of stem spreading, var. *fistulosa*
- b' Corolla white or yellowish-white, dark-spotted, upper lip not villous at tip; bracts green or white. 2. *M. clinopodia*
- a' Corolla red; bracts usually tinged with red; calyx-throat glabrous or nearly so. 3. *M. didyma*

1. *Monarda fistulosa* L. var. *fistulosa*

Wild Bergamot, Basil Bee-Balm

Calyx actinomorphic, summit of tube densely hirsute; corolla pale lavender, pink or white, zygomorphic, strongly bilabiate, upper corolla lip villous at apex; stamens 2.

REFERENCES: Riddell 1834:157; Sullivant 1840:36; Craig 1890:96 (common in the woods and on the island, 9 Jul 1882, 8 Jul 1887); Selby & Craig 1890:14; Kellerman & Werner 1893:226; Cooperrider 1995:405 (illus. p. 407).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 11 Jul 1882—Olentangy R., Cols., *Devol*; [date?—OSU woods, Cols., *Craig*; Jul 1888—Cols., *Craig*; 9 Jul 1890—Cols., *Hine*; 9 Jul 1890—OSU, near Cols., *Hine*; Jun 1891—Cols., *Selby*; Jul 1892—Cols., *Werner* (CLM); 7 Jul 1892—Cols., *Bogue*; 9 Jul 1897—Cols., *Osburn*; 16 Jul 1986—Highbanks Metro Park (Delaware Co.), floodplain, *Watts* 324 (OWU); 19 Jul 1989—Antrim Lake, E of Rt. 315, Sharon Twp., *Lowden* 4219.

NOTE: Some specimens cited above might be *M. clinopodia* if only the flower color (yellowish-white) could be determined.

2. *Monarda clinopodia* L.

Wild Bergamot

Summit of calyx moderately to slightly hirsute; upper corolla lip not villous at apex. Syn.: *M. fistulosa* L. var. *clinopodia* (L.) Cooperr.

REFERENCES: Riddell 1834:157; Selby 1892a:110 (Cols., *Werner*; Mr. Werner thinks this is our commonest species about the city); Kellerman & Werner 1893:226; Cooperrider 1995:406 (incl. under *Monarda fistulosa* L.).

NOTE: See note under *M. fistulosa*.

3. *Monarda didyma* L.

Oswego-tea, Bee-Balm

REFERENCE: Riddell 1834:157 (exotic).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:405 (illus. p. 407).

24. BLEPHILIA Raf.

Hairy; blades lanceolate or ovate; flowers in terminal and subterminal globose clusters, the clusters sometimes continuous in spikes; calyx 2-lipped, upper lip much the longer; corolla white or bluish, with purple spots, 2-lipped, 1-1.5 cm long; stamens 2, ascending under the erect concave entire upper lip, exerted; pollen-sacs divergent.

- a Blades of flowering stem narrowed to base, sessile or nearly so; teeth of lower calyx-lip reaching base of teeth of upper lip or beyond. 1. *B. ciliata*
- a' Blades of flowering stem rounded or cordate at base, petioled; teeth of lower calyx-lip not reaching so far as base of teeth of upper lip. 2. *B. hirsuta*

1. *Blephilia ciliata* (L.) Benth.

Downy Woodmint

Stem hairs recurved; leaves lanceolate, sessile or short petioled; flowers in crowded many-flowered clusters; calyx bilabiate; corolla purplish with darker purple spots; stamens 2, exerted.

REFERENCES: Sullivant 1840:35 (*Blephilia ciliata* Raf.); Selby & Craig 1890:14 (*Blephilia ciliata* Raf.); Cooperrider 1995:406 (illus. p. 407).

HERBARIUM RECORDS: 1840—Cols., Sullivant; 1 Jul 1891—Big Darby Creek, Selby (OS, WOOS); 1 Jul 1891—Georgesville, Werner (CLM); 5 Jun 1895—Cols., W. Kellerman; 22 Jun 1897—Cols., Osburn.

2. *Blephilia hirsuta* (Pursh) Benth.

Hairy Woodmint

Stem hairs spreading; leaves ovate, with petioles 1-3 cm long; flowers crowded in many-flowered clusters; calyx bilabiate; corolla white with purple spots; stamens 2, exerted.

REFERENCES: Riddell 1834:157 (*Monarda hirsuta*); Craig 1890:96 (in the E part of the woods near the fence, but not so common as *Monarda fistulosa*, 19 Jul 1882); Selby & Craig 1890:14; Cooperrider 1995:406 (illus. p. 407).

HERBARIUM RECORDS: 19 Jul 1882—Haydens Falls, Devol; Jul 1888—OSU woods, Cols., Craig; 1891—Wyandot Grove, Selby; 9 Jul 1892—Cols. & Franklin Co., Bogue; 14 Jul 1893—near Scioto, Cols., Selby; 3 Jul 1982—Blendon Woods, jct. of Brookside & Cherry Ridge trails, Owens; 3 Jul 1987—Highbanks Metro Park (Delaware Co.), mound bottom, Higgins; 16 Aug 1987—Highbanks Metro Park (Delaware Co.), woods, Witsberger 954; 6 Aug 1988—Highbanks Metro Park (Delaware Co.), woods edge, Higgins (OS, OWU).

25. SALVIA L. Sage

Leaves ovate to linear; flowers in whorls in axils of bracts, the clusters in terminal spikes or racemes; calyx 2-lipped; corolla 2-lipped, lower lip sometimes much the longer; anther-bearing stamens 2; anther-connectives long, the half-anther on lower end absent or vestigial.

There are many color varieties of *Salvia splendens* Ker Gawl. (Scarlet Sage) cultivated in gardens.

- a Corolla scarlet, about 4 cm long; calyx scarlet. *S. splendens*
- a' Corolla blue, less than 4 cm long.
- b Flowers 1-4 at a node; corolla-tube not longer than calyx. 1. *S. reflexa*
- b' Flowers 6 or more at a node; corolla-tube longer than calyx. 2. *S. pitcheri*

1. †*Salvia reflexa* Hornem.

Rocky Mountain Sage

Stems minutely pubescent; leaves petiolate, blades reaching 5 cm long; flowers in few-flowered verticils, forming a terminal spicate raceme; calyx bilabiate, pubescent only on the nerves; corolla zygomorphic, blue, scarcely exceeds length of calyx; stamens 2.

REFERENCE: Cooperrider 1995:404 (illus. p. 399).

HERBARIUM RECORDS: 12 Jun 1901—Cols., roadside, W. Kellerman; Sep 1911—Cols., weed in back yard along alley, J. H. Schaffner.

2. **Salvia pitcheri* Torr.

Blue Sage

Adventive (native to plains W of Ohio)

Stems minutely pubescent; leaves petiolate, 3-12 cm long, tapering; flowers in few-flowered verticils, forming a terminal spicate raceme; calyx bilabiate, densely pubescent throughout; corolla zygomorphic; stamens 2. Syn.: *S. azurea* Lam. var. *grandiflora* Benth.

REFERENCE: Cooperrider 1995:403.

HERBARIUM RECORD: 17 Sep 1941—Cook Rd., N Cols., probably escaped from cultivation, Roller.

CALLITRICHACEAE, Water Starwort Family

SALVIA
CALLITRICHE
PLANTAGO

