

- c Plants floating; leaves much dissected; scapes 4-many-flowered; spur about 2/3 as long as lower lip, curved.
3. *U. vulgaris*
- c' Delicate; leaves once or twice forked; scapes 1-3-flowered; spur oblong-conic, much shorter than lower lip. 4. *U. gibba*

1. †*Utricularia cornuta* Michx.

Horned Bladderwort

Plants terrestrial, carnivorous, growing in moist substrate; stems and leaves subterranean; leaves linear, undivided; 1-3 flowers on flowering branches; corolla yellow, spurred at base.

HERBARIUM RECORD: 1840—Cols., *Sullivant*.

NOTE: *Sullivant* 1840:37 and *Selby & Craig* 1890:13 reported on plants collected in adjacent counties. Not mapped for Franklin Co. by *Cooperrider* 1995:506 (illus. p. 504).

2. †*Utricularia intermedia* Hayne

Flat-leaved Bladderwort

Plants aquatic, carnivorous; stems and leaves submersed or floating; leaves 1-3 times divided, segments flat, margins minutely serrate with bristle-like hairs; bladders borne separately on leafless branches; flowering branches with 1-5 flowers; corolla yellow, spurred, spur nearly as long as lower lip; palate conspicuous.

HERBARIUM RECORD: 1840—Cols., *Sullivant*.

NOTE: *Sullivant* 1840:37, 60 ("... this rare plant ... grows in Cedar swamp, six mi. S of Urbana") and *Selby & Craig* 1890:13 reported on plants collected in adjacent counties. Not mapped for Franklin Co. by *Cooperrider* 1995:505 (illus. p. 504).

3. *Utricularia vulgaris* L.

Greater Bladderwort

Plants aquatic, carnivorous; stems and leaves submersed or floating; leaves divided 4 or more times, bearing numerous bladders; flowering branches bearing 6 or more buds; corolla yellow, spurred. Incl. *Utricularia macrorhiza* *Leconte*

REFERENCES: *Riddell* 1834:156 (standing pools); *Riddell* 1835:73 (Lockbourne, stagnant pools); *Sullivant* 1840:37; *Selby & Craig* 1890:13; *Cooperrider* 1995:503 (illus. p. 504).

HERBARIUM RECORDS: Jun or Jul 1889—N of Cols., *Craig & Green*; 4 Jul 1891—pond N of city, Cols., *Selby* (OS, WOOS); 28 Jun 1892—Cols., *W. Kellerman*.

4. †*Utricularia gibba* L.

Humped Bladderwort

Plants aquatic, carnivorous; leaves and stems submersed or floating; leaves divided 1-3 times, bearing numerous bladders, final segments terete; flowering shoots with 1-2 flowers; corolla yellow, spurred, lower lip nearly equaling the upper lip.

HERBARIUM RECORD: 15 Oct 1897—Franklin Co., *Fullmer*.

NOTE: Not mapped for Franklin Co. by *Cooperrider* 1995:505 (illus. p. 504).

CAMPANULACEAE, Bellflower Family

Herbs; leaves alternate, simple; flowers epigynous, bisporangiate, often showy, in racemes, spikes, or panicles, or a few together in leaf-axils; sepals 3-5; corolla regular or zygomorphic, of united petals, 5-lobed; stamens 5, separate and on base of corolla, or united in a tube around style; carpels united; ovary with 2-3 locules; style 1; fruit a many-seeded capsule.

- a Anthers not united; corolla regular or nearly so, not split; ovary 3-loculed.
 - b Leaves pinnately veined, longer, linear to ovate, not cordate-clasping. 1. CAMPANULA
 - b' Leaves palmately veined, usually no more than 2 cm long, round-ovate, cordate-clasping. 2. TRIODANIS
- a' Anthers united; corolla zygomorphic, 2-lipped, the tube split on one side nearly to base; ovary 2-loculed. 3. LOBELIA

1. CAMPANULA L. Bellflower

Juice milky; flowers often showy; sepals 5; corolla blue, violet, or white, campanulate, funnellform, or rotate, stigmas and locules 3; capsule opening by lateral pores.

- a Cauline blades lance-ovate, serrate or dentate; flowers usually many, in spikes or racemes.
 - b Corolla rotate; capsule-pores at summit; blades evenly serrate, acuminate at both ends. 1. *C. americana*

b' Corolla campanulate or funnellform; capsule-pores basal; blades irregularly serrate-dentate, not acuminate at base. 2. *C. rapunculoides*

a' Cauline blades linear or lance-linear, entire or sparingly crenulate; basal blades lanceolate; flowers few, long-stalked, solitary or in loose panicles; capsule-pores near base; sepals 4 mm long or less; corolla 12 mm long or less. 3. *C. aparinoides*

1.

1. *Campanula americana* L.

Tall Bellflower

Plants tall, erect; lower leaves lanceolate to ovate, alternate, blades tapering at base; flowers mostly sessile, in terminal or axillary spike-like racemes; corolla nearly actinomorphic, rotate, blue to pale blue; filaments and anthers free; capsule-pores at summit.

REFERENCES: Riddell 1834:154 (open woods); Sullivant 1840:28; Craig 1890:89 (common along the river and about the island, 11 Jul 1882, 10 Aug 1887, University Farm Sep & Oct 1887); Selby & Craig 1890:12; Cooperrider 1995:576 (illus. p. 575).

HERBARIUM RECORDS: 1840—Cols., Sullivant; 9 Jul 1890—Olentangy R., Cols., Hine; Jul 1892—near Cols., E. M. Wilcox; 9 Jul 1892—Alum Creek Station, Bogue; 12 Jul 1897—Cols., Osburn; Oct 1911—Westerville, woods, Hanawalt; 11 Jul 1982—Blendon Woods, Day Camp Rd., Owens; 14 Jul 1987—Delawanda Park, E bank of Olentangy R. behind Graceland Shopping Center, T. Lammers & Lewis 6176; 19 Jul 1987—Highbanks Metro Park, mound bottom, Higgins; Summer 1988—Big Darby Creek between I-70 & Little Darby Creek, Galloway Quad., DeLong; 16 Jul 1990—Whetstone Park of Roses, path behind Blenheim Rd. bus turn around, Clinton Twp., Lowden 4451.

2. **Campanula rapunculoides* L.

European Bellflower, Creeping Bellflower

Naturalized (native of Eurasia)

Stems erect; lower leaves lanceolate to ovate, coarse; flowers mostly in a terminal raceme, pedicels approx. 2-4 mm long; corolla campanulate-funnelform, bluish-purple, approx. 2 cm long; anthers and filament free; capsule-pores at base.

REFERENCE: Cooperrider 1995:574 (illus. p. 575).

HERBARIUM RECORDS: 11 Jul 1985—area of Piedmont Rd. & Torrence Rd., E of N. High St., weed in flowerbeds & along sidewalks, NW Cols. Quad., Cusick 24472 (KE, OS); 14 Jul 1987—Delawanda Park, E bank of the Olentangy R. behind Graceland Shopping Center, T. Lammers & Lewis 6177; 16 Jun 1991—Indian Springs Dr., just E of N. High St., along roadside, Cols., Clinton Twp., Lowden 4699.

3. *Campanula aparinoides* Pursh var. *grandiflora* Holz.

Marsh Bellflower, Prickly Bell-flower

Stems minutely retrorsely scabrous; cauline blades linear to narrowly lanceolate; calyx lobes 4 mm long or less, narrowly triangular, with 1 or 2 low lateral teeth; corolla actinomorphic, campanulate, pale blue to whitish. Syn.: *C. uliginosa* Rydb.

REFERENCES: Riddell 1834:154 (*Campanula erinoides*, dry prairies); Sullivant 1840:28; Selby & Craig 1890:12; Werner 1893:93 (#484 Collections, Cols., Werner); Cooperrider 1995:576 (illus. p. 575).

HERBARIUM RECORDS: [ca. 1834]—Cols., Lapham (CINC); 17 Sep 1892—Cols., Werner (CLM).

NOTE: Leaves are quite variable but specimens best fit var. *grandiflora*.

2. TRIODANIS Raf. Venus's Looking-glass

Small; stem erect; leaves small, round-ovate, cordate-clasping, palmately veined; flowers sessile, axillary, 1-few at a node, those at upper nodes about 1 cm long, those at lower nodes cleistogamous and smaller; sepals 3-5; corolla blue or purple, nearly rotate; capsule opening by pores.

1. *Triodanis perfoliata* (L.) Nieuwl.

Venus' Looking-glass, Round-leaved Triodanis

Stem erect, stiffly hirsute; leaves alternate, sessile; blades as wide as long, palmately-veined, cordate-clasping at base; corolla nearly actinomorphic, blue-purple, rotate; capsule opening by lateral pores. Syn.: *Specularia perfoliata* (L.) A.DC.

REFERENCES: Riddell 1834:154 (*Campanula amplexicaulis*, meadows); Sullivant 1840:28 (*Campanula amplexicaulis* Michx.); Craig 1890:89 (very rare, a few specimens were found this spring near the shelter of Norway Spruce, N of the garden; the only other locality near the city is a common lying between High St. & Summit St. and SE of the N. Cols. Tile Works; it is gradually dying out and the locality will soon be lost); Selby & Craig 1890:12; Cooperrider 1995:573 (illus. p. 577).

HERBARIUM RECORDS: Jun 1888—N Cols. & Cols., Craig; 8 Jul 1891—Central College, Selby; 30 May 1896—Reservoir Park, M. Wright; 2 Jun 1936—OSU Botanical Garden, S. Humphrey; 1 Jun 1980—along RR N of McKinley Ave., 5 blks. W of Souder St., cindery soil, NE ¼ SW Cols. Quad., W. Carr 2854; 12 Jun 1986—Greenlawn Cemetery, SW Cols. Quad., Cusick 25354; 29 May 1987—Highbanks Metro Park (Franklin/Delaware Co. Line), Watts; 11 Jun 1989—Highland Dr. RR tracks, W of Olentangy River Rd., S of Henderson Rd., Clinton Twp., Cols., Lowden 4140; 13 Jun 1990—W side of Waggoner Rd., open field 1 mi. S of Conrail & B&O RR tracks, Jefferson Twp., Lowden 4410; 6 Jun 1991—OSU campus, behind Pomerene Hall, Stuckey.

CAMPANULA
TRIODANIS
LOBELIA



3. LOBELIA L. Lobelia

Juice sometimes milky; flowers often showy, bracted, in racemes, spikes, or panicles; sepals, petals, and stamens 5; corolla-limb 2-lipped, the tube split on one side; stamens united in a tube around the style, some or all anthers hairy; carpels and locules 2; style 1; capsule opening at top.

- a Corolla red, 3-4 cm long, tube with lateral openings. 6. *L. cardinalis*
- a' Corolla blue, purplish, or white.
 - b Corolla tube 1.2 cm long or more, with lateral openings.
 - c Calyx with large deflexed auricles in the sinuses; leaves glabrous or nearly so. 5. *L. siphilitica*
 - c' Calyx without auricles or with very small ones; leaves densely puberulent. 4. *L. puberula*
 - b' Corolla tube 1 cm long or less, without lateral openings.
 - d Cauline leaves linear, basal ones wider; lower lip of corolla not pubescent at base; capsule not inflated. 3. *L. kalmii*
 - d' Cauline leaves wider, some of them 1 cm wide or more; lower lip of corolla pubescent at base.
 - e Stem pubescent, usually much branched; capsule inflated. 2. *L. inflata*
 - e' Stem short-pubescent at base, usually glabrous above, usually not or little branched; capsule not inflated. 1. *L. spicata*, auricles of calyx short, usually 1 mm long or less, var. *spicata*

1. *Lobelia spicata* Lam. var. *spicata*

Pale-spike Lobelia

Stems erect, stiffly short-hirsute along lowest internodes; flowers in a terminal raceme; bases of calyx lobes with auricles less than 1 mm long; corolla zygomorphic, blue to white; anthers fused; fruit not inflated.

REFERENCES: Riddell 1834:154 (*Lobelia claytoniana*, dry prairies); Sullivant 1840:28 (*Lobelia claytoniana* Michx.); Selby & Craig 1890:12; Selby 1891a:111a (#481 Re-collected); Cooperrider 1995:580 (illus. p. 581).

HERBARIUM RECORDS: 1840—Cols., Sullivant; Jul 1891—Big Walnut, Cols., Selby (OS, WOOS); 1 Jul 1891—Big Darby R., Selby; 1 Jul 1891—Georgesville, Werner (CLM).

2. *Lobelia inflata* L.

Indian Tobacco

Stem erect, hairs divergent and variously bent; leaves ovate, lanceolate to oblong; corolla zygomorphic, blue, pink or white; fruit inflated.

REFERENCES: Riddell 1834:154; Sullivant 1840:28; Craig 1890:88-89 (not common, in the pasture E of the woods, where it was recently introduced, 10 Aug 1882, University Farm Oct 1887); Selby & Craig 1890:12; Cooperrider 1995:580 (illus. p. 581).

HERBARIUM RECORDS: 1840—Cols., Sullivant; Jun 1888—Cols., Craig; Aug 1888—Cols., Craig; Jun 1889—Cols., Craig; 8 Aug 1890—Headley's Woods, Selby; 3 Sep 1892—Cols., Bogue; Oct 1911—Westerville, old meadows & pastures, Hanawalt; 12 Jul 1982—Blendon Woods, preserve fence, Owens; 26 Jul 1986—Highbanks Metro Park (Delaware Co.), field, hillside below farmhouse, Morawetz 25 (OS, OWU); 24 Aug 1989—Walnut Grove Cemetery, S Worthington, Sharon Twp., Lowden 4297; 1 Aug 1990—E side of Hoover Dam Park, open woods, just W of Cabbage Rd. & S of Walnut St., Blendon Twp., Lowden 4494.

3. *Lobelia kalmii* L.

Kalm's Lobelia

Stems erect, delicate; basal leaves spatulate; cauline leaves linear, less than 3 mm wide; flowers borne in an open raceme; corolla zygomorphic, blue and white, glabrous at base; anthers fused.

REFERENCES: Riddell 1834:154 (dry prairies); Sullivant 1840:28; Selby & Craig 1890:12; Selby 1892a:111 (#480 Re-collections, Scioto R., Bogue); Cooperrider 1995:582 (illus. p. 581).

HERBARIUM RECORDS: 17 Sep 1892—canal near Cols., in a mucky wet soil, E. M. Wilcox; 10 Sep 1898—Cols., W. Kellerman.

4. *Lobelia puberula* Michx.

Downy Lobelia

REFERENCE: Riddell 1834:154.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Cooperrider 1995:579 (illus. p. 581).

5. *Lobelia siphilitica* L.

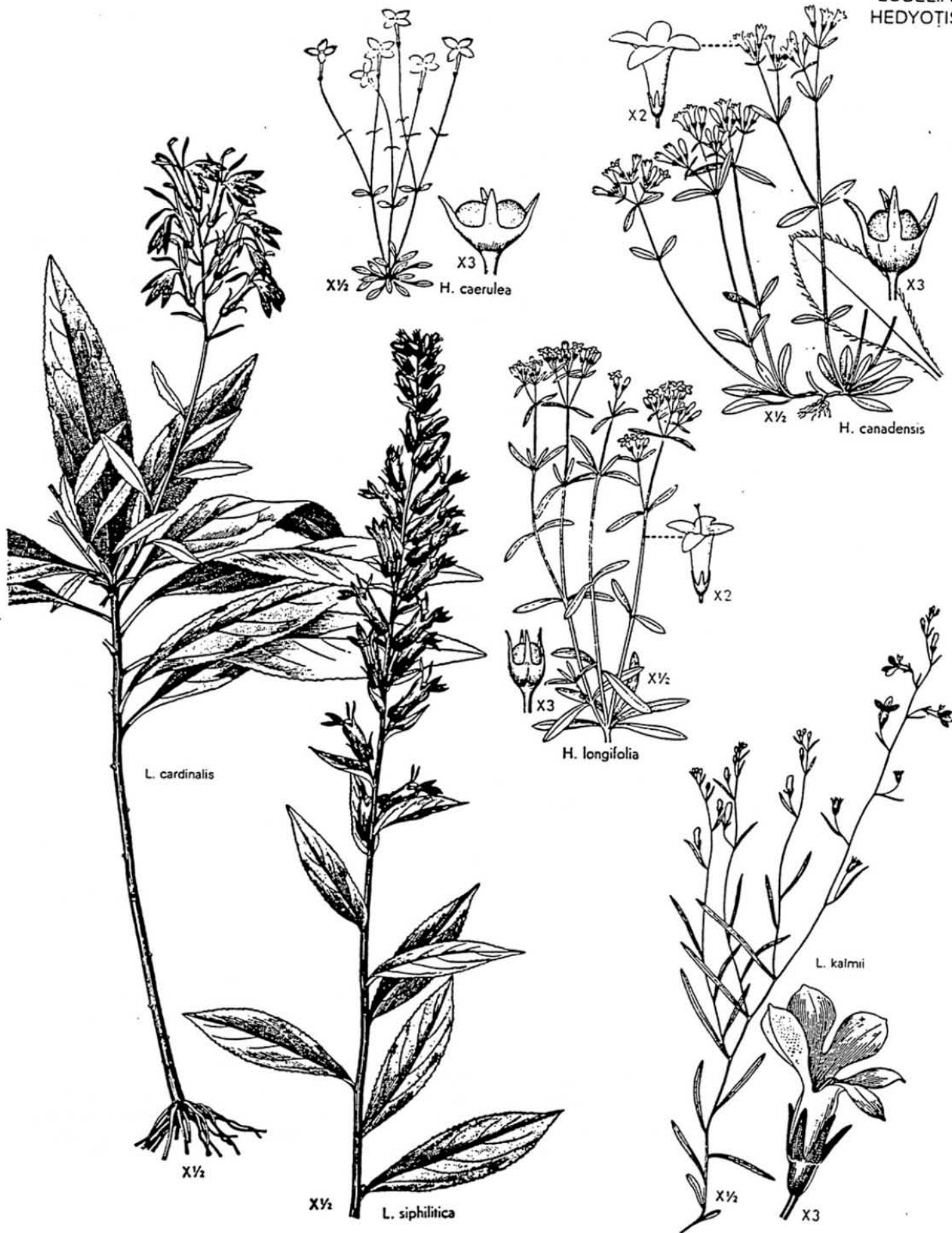
Great Blue Lobelia, Great Lobelia

Plants erect, tall, usually more than 1 m tall; stems sparingly hirsute at most; leaves oblanceolate; flowers in terminal or axillary racemes; calyx lobes hirsute and broadly auricled at base; corolla zygomorphic, showy, blue, lobes hirsute; anthers fused.

REFERENCES: Riddell 1834:154; Sullivant 1840:28; Craig 1890:54, 88 (common in the low meadow land along the brook S & E of the lake, 12 Aug 1887, University Farm Sep & Oct 1887); Selby & Craig 1890:12; Cooperrider 1995:579 (illus. p. 577).

HERBARIUM RECORDS: Jul & Aug 1888—Cols., Craig; Aug 1890—Headley's Woods, Cols., Selby; Jul 1892—near Cols., E. M. Wilcox; 12 Aug 1892—OSU campus, near Cols., E. M. Wilcox; 18 Aug 1892—Cols., Bogue; 12 Oct 1901—S Cols., Eckman; 18 Aug 1929—Big Darby Creek, S of National Rd., Gordon & Chapman; 5 Aug 1977—bottom of Hayden Run ravine, Scioto R. at Hayden Run Rd., W. Carr 625; 23 Aug 1980—entrance to High Banks Metro Park (Delaware Co.), on Rt. 23, N of Cols., Hariman 1671B; 20 Aug 1982—Blendon Woods, Owens; Summer 1988—along

LOBELIA
HEDYOTIS



Big Darby Creek between I-70 & Little Darby Creek, *DeLong*; 18 Sep 1989—Highbanks Metro Park (Delaware Co.), along Olentangy R., 3/4 mi. S of Powell Rd., *Watts 504* (OWU); 10 Sep 1991—E bank of Big Darby Creek, just off Rt. 40, Prairie Twp., *Lowden 4815*.

6. *Lobelia cardinalis* L.

Cardinal-flower

Stem erect, tall; leaves lanceolate to elliptic-lanceolate; flowers more than 3 cm long, showy; corolla zygomorphic, bright red (rarely white). Incl. *L. cardinalis* L. forma *alba* (Eaton) St. John

REFERENCES: Riddell 1834:154 (dense and shady woods, marshes); Sullivant 1840:28; Selby & Craig 1890:12; Cooperrider 1995:579 (illus. p. 577).
HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Aug 1890—Taylor's Woods, *Selby*; 8 Aug 1890—Headley's Woods, Cols., *Selby* (OS, WOOS);
Aug 1896—Georgesville, *W. & Mrs. Kellerman*; 7 Sep 1899—Worthington, *Selby*.

NOTE: The white flowered form is based on Selby's specimen collected at Taylor's Woods.

RUBIACEAE, Madder Family

Herbs and shrubs; leaves entire, opposite or whorled and bases connected by stipules, or whorled without apparent stipules; flowers epigynous, bisporangiate; calyx minute or none or of usually 4 sepals; corolla rotate, funnelform, or salverform, regular, lobes usually 4; stamens as many as corolla lobes, inserted on corolla tube; carpels 2 (or 4), united; locules as many; ovules 1-several in each locule; style 1 or sometimes cleft; stigmas 2 or rarely 1 or 4; fruit separating into 1-seeded indehiscent carpels, or sometimes a berry or a capsule.

a Upright shrubs or small trees; flowers in spherical heads; leaves opposite or in whorls of 3. 3. **CEPHALANTHUS**

a' Herbs, upright to prostrate.

b Prostrate evergreen with small round-ovate petioled opposite leaves; flowers in pairs, ovaries united; stigmas 4; fruit a berry. 2. **MITCHELLA**

b' More or less upright, not evergreen; ovaries single; stigmas 1 or 2.

c Leaves apparently whorled; small cymose flowers terminating the branches or axillary; sepals minute or absent; corolla rotate, tube very short; ovary inferior. 4. **GALIUM**

c' Leaves opposite; flowers terminal and solitary or in terminal cymose clusters; sepals lance-linear to ovate; corolla salverform or funnelform; ovary half inferior. 1. **HEDYOTIS**

1. **HEDYOTIS** L.

Small herbs, usually tufted; leaves opposite, bases connected by stipules; flowers small, partly epigynous, often dimorphic or trimorphic as to relative length of stamens and style, solitary or in terminal cymes; sepals 4, erect; corolla 4-lobed, blue, purple, or white; capsule 2-loculed, dehiscent across the top, few- to several-seeded. (*Houstonia* L.)

a Peduncles 1-flowered, filiform; corolla salverform, pale blue or violet-blue with yellow eye; fruit wider than long; stem-leaves few. 4. *H. caerulea*

a' Flowers in cymes; corolla funnelform.

b Leaves 3-5 nerved, rounded to subcordate at base. 2. *H. purpurea*

b' Leaves 1-nerved.

c Basal leaves many at anthesis, ciliate; stipules rounded at summit, not fringed or toothed. 1. *H. canadensis*

c' Basal leaves not present at anthesis or not ciliate; stipules often fringed or toothed. 3. *H. longifolia*

1. *Hedyotis canadensis* (Willd.) Fosberg

Canadian Bluets

Stems glabrous or sometimes with a few diverging hairs; basal leaves present at anthesis, ciliate; cauline leaves linear to lanceolate; blades less than 1 cm wide, with one main vein; flower and fruiting pedicels longer than 2 mm; corolla whitish to purple. Syn.: *Houstonia canadensis* Willd.

REFERENCES: Riddell 1834:156 (*Houstonia ciliolata*, rocky situations); Riddell 1835:68 (*Houstonia ciliolata* Torr., Worthington, rocky situations & slaty ravines); Selby & Craig 1890:10 (*Houstonia purpurea* L. var. *ciliolata* A.Gray); Cooperrider 1995:535 (illus. p. 534).

HERBARIUM RECORDS: May 1889—E of Alum Creek, *Gould*; 17 May 1890—Central College, Cols., *Selby* (OS, WOOS); 9 May 1891—Big Darby, *Selby*; Jul 1891—Cols., *Selby*; 7 May 1892—Georgesville, *Detmers*; 7 May 1892—Franklin Co., *Werner*; 7 May 1892—Georgesville, *Werner*; 14 May 1892—Georgesville, *E. M. Wilcox*; 17 May 1892—Georgesville, *E. M. Wilcox*; 4 May 1895—Georgesville, *Osburn*; 22 May 1899—Big Darby, *Selby*; 15 May 1901—Worthington, *Mead*; 15 May 1920—Flint Creek, N of Cols., open woods and fields, *Braun*; 26 May 1924—Westerville, *M. Long*; 18 Aug 1929—Big Darby, S of National Rd., *Gordon & Chapman*; 10 May 1970—Camp Johnson, 8 mi. N of OSU on N. High, *Boone 134*; 2 Jun 1980—Central College Rd., N side 1/2 mi. E of Sunbury Rd., Blendon Twp., NE 1/4 NE Cols. Quad., *W. Carr 2869* (KE); 24 Jun 1982—Highbanks Metro Park (Franklin & Delaware Cos.), blufftop, *G. Moore 286*; 18 May 1983—Battelle-Darby, *Owens*; 23 May 1986—Highbanks Metro Park