

HERBARIUM RECORDS: 19 May 1901—W of Cols., *Stiver*; 19 May 1990—E bank of Blacklick Creek, just S of intersection of Blacklick Creek with Morse Rd., Jefferson Twp., *Lowden 4317*.

4. †*Valerianella umbilicata* (Sull.) A.W.Wood

Beaked Corn-salad

Herbaceous; leaves simple, unlobed; margins entire, sometimes toothed; bracts of inflorescence glabrous, without cilia; corolla white; fruits 2-3 mm long, somewhat square in cross section, seed-containing carpel slightly wider than the 2 empty ones, separated by a shallow groove. Syn.: *V. intermedia* Dyal, *V. woodsiana* (Torr. & A.Gray) Walp.

REFERENCES: Sullivant 1842:50 (*Fedia umbilicata* Sull.; Type locality, [moist ground] around Cols., [Sullivant]); Sullivant in Gray 1848:183 (*Fedia patellaria* Sull. in A.Gray; Type locality, low ground, Cols., Sullivant); Craig 1890:83 (*Valerianella woodsiana* Walp. var. *umbilicata* A.Gray, abundant in the low marshy ground W of the lake and there is a small patch on the island, 23 May 1882, 24 May 1883, 21 May 1884, 15 May 1887); Selby & Craig 1890:11 (#334 & 335, *Valerianella woodsiana* Walp. var. *umbilicata* A.Gray & *Valerianella woodsiana* Walp. var. *patellaria* A.Gray); Jones 1943:107; Eggers-Ware 1970:210-212 (recognizes 3 forms in Franklin Co.); Cooperrider 1995:568 (illus. p. 567).

HERBARIUM RECORDS: Jun 1888—Cols., *Craig*; 8 Jul 1891—Big Darby, *Selby*; 21 May 1892—Cols., *W. McCormick*; Jun 1892—Cols., *Addison*; 24 Jun 1892—Cols., *Bogue*; 30 May 1895—N Cols., *Osburn*; 19 May 1896—W Cols., *M. Wright*; 190—Cols., *E. M. Wilcox*; 4 Jun 1931—Westerville, *Hicks*; 27 May 1968—along Trabue Rd., across from golf course parking lot, *R. Johnson*; 18 May 1980—OSU campus, Neil Ave., Cols., *H. Liu 2214*; 18 May 1986—Antrim Park, NW side of lake along bike path, *R. Burnes 27*; 22 May 1988—E bank of Olentangy R., 100 feet S of Dodridge St., Cols., *Kelly 20*; 22 May 1990—Elliot Rd., 1 mi. S of Hayden Run Rd., Brown Twp., *Lowden 4328*; 23 May 1990—N side of Central College Rd., ¼ mi. W of Franklin/Licking Co. Line, Plain Twp., *Lowden 4334*; 30 May 1990—Ropath Rd., S of Zuber Rd., approx. 1 mi. from county line, Jackson Twp., *Lowden 4352*.

## DIPSACACEAE, Teasel Family

### 1. DIPSACUS L. Teasel

Tall erect herb; stem prickly; blades prickly on midvein beneath, basal ones oblanceolate, crenate, cauline ones lanceolate, entire, sessile or connate-perfoliate; flowers epigynous, perfect, in peduncled dense ovoid or cylindrical clusters subtended by an involucre of rigid prickly bracts; rigid bractlets among the flowers longer than the flowers; calyx about 1 mm long, silky; corolla pale purple, not quite regular, tubular, with 4 short lobes; stamens 4, inserted on corolla; carpels 2, only 1 developing; locule and ovule 1; fruit an achene.

a Stem-leaves entire or prickly-margined. 1. *D. sylvestris*

a' Stem-leaves pinnately lobed or divided. 2. *D. laciniatus*

#### 1. \**Dipsacus sylvestris* Huds.

Common or Wild Teasel

Naturalized (native of Europe)

Stems prickly; leaves opposite, sessile, often connate-perfoliate; margins crenate-dentate, unlobed; flowers borne in many flowered heads; involucre bracts curved upward, longest one longer than inflorescence, bracts terminated by a straight spine; corolla pink-purple. Incl. *D. fullonum* L.

REFERENCES: Riddell 1834:154 (bottomland); Sullivant 1840:34 (naturalized plants); Craig 1890:53, 83 (abundant on the hillside S of the Lake, where pure white specimens are occasionally found, 20 Jul 1882, 24 Jul 1887, 9 Jul 1888, University Farm Sep 1887); Selby & Craig 1890:11 (introduced); Cooperrider 1995:569 (illus. p. 570).

HERBARIUM RECORDS: 11 Jul 1898—Cols., *J. H. Schaffner*; 18 Jul 1899—Bot. Gar., Cols., *W. Kellerman*; 10 Sep 1901—Cols., *Tyler & Jennings*; 20 Aug 1911—Westerville, woods & fencerows, *Hanawalt*; 15 Aug 1982—Blendon Woods, *Owens*; 16 Jul 1986—Highbanks Metro Park (Delaware Co.), field, *Watts* (OS, OWU); 4 Aug 1989—along Rt. 71, W of Harrisburg, N of the Franklin/Pickaway Co. line, Pleasant Twp., *Lowden 4229*; 1 Aug 1990—Delawanda Park E of the Olentangy R., behind Graceland Shopping Center, Sharon Twp., *Lowden 4479*.

#### 2. \**Dipsacus laciniatus* L.

Cup-leaf Teasel

Naturalized (native of Europe)

Stem-leaves irregularly pinnately lobed or divided, bristly-ciliate.

HERBARIUM RECORD: 3 Sep 1992—N side of Rt. 161 just E of Blacklick Creek, occasional on weedy roadbank, Plain Twp., New Albany Quad., *McCormac 4885*.

NOTE: Not mapped for Franklin Co. by Cooperrider 1995:571 (illus. p. 570).

## ASTERACEAE, Aster Family

Herbs; rarely dioecious; leaves alternate, opposite, or whorled; flowers bisporangiate, monosporangiate, or neutral, epigynous, in dense heads on a common receptacle surrounded by an involucre of bracts (phyllaries); pappus in

position of calyx, of hairs, bristles, awns, teeth, or scales, or cuplike, or absent; corolla tubular and usually regular, usually 5-lobed, or ligulate and zygomorphic (tubular at base but flat and straplike above); heads discoid (of flowers with only tubular corollas); ligulate (of flowers with only ligulate corollas), or radiate (of a central disk of flowers with tubular corollas surrounded by one or more series of flowers with ligulate corollas, called ray flowers); flowers subtended by bracts (pales), receptacle then chaffy, or flowers bractless, receptacle then naked; stamens 5, inserted on the corolla, filaments separate, anthers usually united around the style or rarely separate or scarcely united; carpels 2, united; ovary 1-loculed with 1 ovule; style 1, usually 2-branched at apex; stigmas 2; fruit an achene. (Compositae, nom. altern.)

Garden cultivars include Marigolds (*Tagetes* L.) and Zinnias (*Zinnia elegans* Jacq.). Other garden composites include the following: *Carthamus tinctorius* L. (Safflower, False Saffron), introduced probably through birdseed; flowers bright orange, outer phyllaries foliaceous (23 Jul 1990—disturbed garden just S of Old Greenhouse behind Lazenby Hall near Dieter Cunz Bldg., OSU campus, *Lowden 4456*; 23 Sep & 23 Oct 1991—391 Blenheim Rd., Dr. E. F. Paddock's backyard garden, not planted, plants found under a bird feeder, *Lowden 4854*). Fisher (1988) did not treat this species. The only other known specimen comes from Lucas Co., Spencer Twp., Berkey Quad.: 10 Jul 1988—approx. 12 plants, spontaneous in weedy ground by manager's residence, Irwin Prairie State Nature Preserve, Bancroft St., *John O'Meara*. *Cosmos bipinnatus* Cav. (Common Cosmos), cultivated escape (native of Mexico & adjacent U.S.); rays about 8, white to pink-purple; leaves pinnately dissected, ultimate segments linear-filiform; achenes 4-angled, linear, beaked (28 Sep 1933—escaped to waste ground N of Cols., *J. H. Schaffner*; 28 Jul 1993—SE corner of Tulane Rd. & N. High St., Clintonville, supposedly escaped, *Frederick 003*). Not treated by Fisher (1988). *Gaillardia pulchella* Foug. (Rosering Blanket-flower), cultivated to escaped along roadsides (native of SE & SW U.S.); rays red-purple, often yellow-tipped (16 Jun 1931—Cols., persistent after cultivation, *J. H. Schaffner*; 8 Aug 1990—Rt. 71, mi. 98 marker, near Grove City Country Club, Jackson Twp., *Lowden 4528*). Not treated by Fisher (1988). *Iva xanthifolia* Nutt. (Marsh-elder), found in moist garden waste (23 Jul 1994—Worthington, 6170 Middlebury Dr. W., James Lane's garden, *Lane*). This weedy annual, native west of Ohio, has opposite leaves; heads discoid, chaffy, in panicles, without subtending bracts; pappus none; carpellate flowers fewer at border, corolla tube small at top of achene; staminate flowers centrally located, stamens free, anther tips incurved. Not mapped for Franklin Co. by Fisher 1988:113 (illus. p. 115). *Silybum marianum* (L.) Gaertn. (Milk-thistle), cultivated (native of the Mediterranean region). Mapped for Franklin Co. by Fisher 1988:219 (illus. p. 219) and collected by *W. Kellerman* (15 Aug 1897—cult., OSU grounds).

There are 3 keys, corresponding to the 3 types of heads.

- a Heads discoid. KEY A
- a' Heads radiate. KEY B
- a'' Heads ligulate; plants with milky juice; flowers bisporangiate. KEY C

#### KEY A. HEADS DISCOID

- a Pappus capillary (of soft hairs or hairlike bristles).
  - b Receptacle densely bristly-hairy.
    - c Phyllaries rigid, hooked at tip; stems and leaves not spiny. 43. ARCTIUM
    - c' Phyllaries not hooked at tip.
      - d Pappus bristles plumose; plants spiny. 45. CIRSIUM
      - d' Pappus bristles not plumose.
        - e Phyllaries tipped with appendages that are pectinate, lacerate, fringed, toothed, scarious or hyaline, or rarely tipped with long spines; marginal flowers of head sometimes enlarged. 47. CENTAUREA
        - e' Phyllaries linear to ovate, tipped with short spines; wings of stem and leaves spine-toothed. 44. CARDUUS
  - b' Receptacle naked, sometimes pitted (or with some short hairs or bristles in *Onopordum*).
    - f Stem broadly winged, teeth of wing and of blades spine-tipped; pappus barbellate; plant white-woolly. 46. ONOPORDUM
    - f' Stem not winged.
      - g Pappus in 2 series, the outer much the shorter; corollas purple. 42. VERNONIA
      - g' Pappus-bristles all of approximately the same length.

- h Pappus-bristles plumose or barbellate; leaves often resin-dotted.
- i Heads in corymbiform clusters; corollas creamy-white. **40. KUHNIA**
- i' Heads in racemes or spikes; corollas usually rose-purple. **41. LIATRIS**
- h' Pappus-bristles neither plumose nor barbellate, sometimes scabrous.
- j Leaves, except sometimes the upper ones, opposite or whorled.  
**39. EUPATORIUM**
- j' Leaves alternate, or all basal.
- k Main phyllaries in a series of about equal length, with sometimes some shorter ones at base.
- l Blades triangular or hastate, serrate or dentate; involucre about 1 cm high. **26. CACALIA**
- l' Blades not as above.
- m Blades palmately veined; main phyllaries about 5. **26. CACALIA**
- m' Blades not palmately veined; main phyllaries more than 5.
- n Involucre about 5 mm high, cylindric. **24. SENECIO**
- n' Involucre about 1.5 cm high, usually wider at base. **25. ERECHTITES**
- k' Main phyllaries in several series of unequal length.
- o Plants white-woolly; phyllaries white, pink, or yellowish.
- p Basal rosettes prominent at anthesis, blades oblanceolate to obovate, differing in shape from the few narrow cauline ones; dioecious. **38. ANTENNARIA**
- p' Basal rosettes absent at anthesis or the blades not much different from cauline ones; monoecious; heads alike, outer flowers of head carpellate with filiform corollas, a few inner flowers perfect with coarser 5-toothed corollas. **37. GNAPHALIUM**
- o' Plants not white-woolly.
- q Leaf-blades triangular-hastate; main phyllaries equal. **26. CACALIA**
- q' Leaf-blades not triangular-hastate; phyllaries usually in several series of different lengths. **32. ASTER**
- a' Pappus none or pappus present but not capillary.
- r Carpellate heads axillary, of 1 or 2 flowers in a closed hardened spiny or tuberculate involucre; staminate flowers on same plant but in separate heads, staminate heads in terminal clusters.
- s Carpellate flowers solitary in an ovoid or top-shaped involucre bearing usually 1 series of tubercles or spines. **16. AMBROSIA**
- s' Carpellate flowers solitary in each of the 2 cavities of an oblong involucre which becomes a bur with many spines. **17. XANTHIUM**
- r' Carpellate flowers, if present, not enclosed in a closed hardened involucre.
- t Pappus of 2-6 rigid awns or teeth, mostly downwardly barbed; outer phyllaries sometimes foliaceous. **10. BIDENS**
- t' Pappus none or a short cup or crown.
- u Phyllaries tipped with appendages that are pectinate, lacerate, fringed, toothed, scarious or hyaline, or rarely tipped with stout spines; outer corollas of head sometimes enlarged. **47. CENTAUREA**
- u' Phyllaries not as above.
- v Leaves, at least the lower, opposite
- w Blades unlobed, lanceolate to ovate; heads 5 mm wide or less. **IVA**
- w' Blades large, lobed, with stipulelike appendages at base; heads more than 5 mm wide; viscid-hairy. **13. POLYMNIA**
- v' Leaves alternate.
- x Heads small, 5 mm wide or less, mostly in spikes, racemes, or panicles; blades undivided and narrow or white-tomentose, or pinnatifid. **23. ARTEMISIA**

- x' Heads larger.
- y Receptacle conic; phyllaries much shorter than disk. **22. MATRICARIA**
- y' Receptacle flat or convex; phyllaries little, if any, shorter than disk.
- z Blades 1-3 times pinnately divided or dissected. **21. TANACETUM**
- z' Blades oblong, crenate-serrate, sometimes lobed at base.  
**20. CHRYSANTHEMUM**

#### KEY B. HEADS RADIATE

- a Pappus capillary (of soft hairs or hairlike bristles), rarely absent in ray-flowers.
  - b Corollas of ray flowers yellow or orange.
    - c Phyllaries imbricated in several series.
      - d Heads about 5 cm wide; blades velvety-pubescent beneath. **36. INULA**
      - d' Heads much less than 5 cm wide.
        - e Phyllaries dotted with conspicuous glands. **12. DYSSODIA**
        - e' Phyllaries not gland-dotted.
          - f Blades resinous-dotted, linear, entire; basal and lower cauline leaves deciduous; heads in a flat-topped, corymblike inflorescence; achenes pubescent; receptacle fimbriate. **29. EUTHAMIA**
          - f' Blades variously shaped and disposed, but not resin-dotted (pellucid-punctate in *S. odora*, which has a paniculiform inflorescence, with recurved-second branches).  
**28. SOLIDAGO**
    - c' Main phyllaries in 1 series of about the same length, often some much shorter ones at base.
      - g Flowers appearing in early spring before leaves, heads solitary on scaly scapes; leaves basal, blades cordate-ovate, white-tomentose on lower surface. **27. TUSSILAGO**
      - g' Flowers appearing after leaves; cauline leaves present, usually pinnatifid. **24. SENECIO**
  - b' Corollas of ray flowers not yellow or orange.
    - h Ray flowers few, 4-5 (-8).
      - i Heads in a corymb; achenes covered with silky hairs, the upper hairs like a short outer pappus.  
**32. ASTER**
      - i' Heads in a slender panicle. **28. SOLIDAGO**
    - h' Ray flowers more numerous than 8.
      - j Phyllaries obviously imbricated in several series of different lengths. **32. ASTER**
      - j' Phyllaries of approximately the same length, or, if of several series of different lengths then ray flowers scarcely longer than disk flowers.
        - k Heads 1 cm wide or more; ray-corollas much longer than disk-corollas; disk-flowers many.  
**33. ERIGERON**
        - k' Heads about 5 mm wide; ray-corollas equaling or slightly longer than disk; disk-flowers not more than about 20. **34. CONYZA**
  - a' Pappus, at least of disk flowers, a circle of awns, chaffy or rigid bristles, or scales sometimes dissected into bristles, sometimes deciduous. (See a'').
    - l Corollas of ray flowers white or pink, little exceeding disk-corollas, the flat portion about as wide as long; leaves opposite, ovate to lance-ovate. **11. GALINSOGA**
    - l' Corollas of ray flowers yellow or orange, sometimes purple at base; plants gland-dotted.
      - m Leaves opposite, pinnately divided, ultimate segments linear; pappus of chaffy scales parted into bristles; phyllaries conspicuously gland-dotted. **12. DYSSODIA**
      - m' Leaves alternate on the stem.
        - n Heads small, 5 mm wide or less; rays not over 5 mm long; phyllaries strongly imbricate, glutinous.
          - o Disk-flowers perfect and fertile. **30. GUTIERREZIA**
          - o' Disk-flowers functionally staminate, without an ovary. **31. AMPHIACHYRIS**
        - n' Heads larger; rays longer, 3-lobed; phyllaries in 2-3 series, not glutinous but may be gland-dotted. **5. HELENIUM**
  - a'' Pappus none, a short cup or crown, or a few teeth, awns, or scales (sometimes deciduous) that correspond to angles of achene, sometimes with tiny bristles or scales between.

- p Receptacle chaffy, sometimes only near the center.
  - q Lower leaves opposite; blades large, lobed, small stipulelike appendages at base of petiole; rays yellow or whitish; plants viscid-hairy; achenes thick, forming on only ray flowers. **13. POLYMNIA**
  - q' Without the above set of characters.
    - r Rays pale purple, rarely whitish, 2.5-6 cm long; long slender tips of chaff exceeding disk corollas. **3. ECHINACEA**
    - r' Rays white or rarely pink, at most 1.5 cm long. (See r'.)
      - s Leaves opposite, lanceolate to linear; seeds forming in both disk and ray flowers. **7. ECLIPTA**
      - s' Leaves alternate.
        - t Leaves pinnately dissected into narrow, often filiform, segments.
          - u Rays white or pink, 2-3 mm long; heads less than 1 cm wide; disk corollas white. **19. ACHILLEA**
          - u' Rays white, 5 mm long or more; heads more than 1 cm wide; disk corollas yellow. **18. ANTHEMIS**
        - t' Leaves not dissected, at most slightly lobed.
          - v Rays 5, minute; stem not winged; outer phyllaries ovate; seeds forming in only ray flowers. **15. PARTHENIUM**
          - v' Rays 1-5, less than 1 cm long; stem winged; outer phyllaries oblong; seeds forming in disk and sometimes also in ray flowers. **6. VERBESINA**
    - r" Rays yellow, rarely brown or purple at base.
      - w Stems winged; seeds forming in disk-flowers and sometimes also in ray-flowers; seeds winged or wingless. **6. VERBESINA**
      - w' Stems not winged.
        - x Receptacle conic or columnar.
          - y Leaves pinnately divided, segments narrow; plants more or less white-tomentose; rays shorter than width of disk; seeds forming in both disk and ray flowers. **18. ANTHEMIS**
          - y' Plants not as above.
            - z Leaves opposite, serrate or dentate; receptacle conic; seeds forming in both disk and ray-flowers. **8. HELIOPSIS**
            - z' Leaves alternate.
              - aa Achenes flattened; receptacle elongate, narrow; disk dark, its corollas narrowed only at very base. **4. RATIBIDA**
              - aa' Achenes 4-sided; receptacle rounded or conic; disk dark or yellow, its corollas narrowed from above base. **2. RUDBECKIA**
        - x' Receptacle flat or convex.
          - bb Phyllaries of 2 kinds, the outer unlike the inner.
            - cc Pappus of rigid, often barbed, awns; inner phyllaries striate, outer ones often foliaceous. **10. BIDENS**
            - cc' Pappus absent, a mere border, or 2 short awns or teeth, not of rigid awns; phyllaries joined at base. **9. COREOPSIS**
          - bb' Phyllaries in several series, all similar; pappus none or of 2 scales.
            - dd Phyllaries ovate, blunt or, if acute, then blades perfoliate or pinnatifid; achenes flat, winged, forming in ray-flowers only. **14. SILPHIUM**
            - dd' Phyllaries acute, usually much longer than wide; achenes thick, wingless, forming in disk-flowers only; pappus deciduous. **1. HELIANTHUS**
    - p' Receptacle naked.
      - ee Plants small; leaves all basal; heads scapose; pappus none. **35. BELLIS**
      - ee' Plants not as above.
        - ff Blades dissected into narrow segments. **22. MATRICARIA**
        - ff' Blades toothed to bipinnatifid, the teeth sometimes lacinate, but ultimate segments not narrow. **20. CHRYSANTHEMUM**

KEY C. HEADS LIGULATE; PLANTS WITH MILKY JUICE; FLOWERS BISPORANGIATE

- a Pappus none; corollas yellow; cauline leaves present; peduncles short and slender. **56. LAPSANA**
- a' Pappus of short scales; corollas blue or rarely white. **55. CICHORIUM** (See a".)
- a" Pappus of scales alternating with bristles; corollas yellow or orange. **53. KRIGIA** (See a"".)
- a"" Pappus capillary.
  - b Pappus-bristles, of some or all of at least inner flowers of head, plumose or barbellate.
    - c Blades linear-lanceolate, entire; branches of pappus-bristles interwebbed. **59. TRAGOPOGON**
    - c' Blades toothed or lobed, all basal or very near base of stem; branches of pappus-bristles not interwebbed.
      - d Receptacle chaffy. **57. HYPOCHOERIS**
      - d' Receptacle naked or hairy. **58. LEONTODON**
  - b' Pappus bristles simple or with some soft white scales.
    - e Achenes muricate above, with slender beaks; leaves all basal; heads solitary, on hollow scapes. **54. TARAXACUM**
    - e' Achenes not muricate.
      - f Achenes flattened.
        - g Involucre ovoid or campanulate; flowers 60 or more in a head; achenes beakless. **50. SONCHUS**
        - g' Involucre cylindric or conic; flowers rarely as many as 50 in a head; achenes with a beak or a thickened summit. **49. LACTUCA**
      - f' Achenes not flattened.
        - h Corollas white, cream, or pink; heads slender, cylindric, drooping. **48. PRENANTHES**
        - h' Corollas yellow or orange.
          - i Pappus white; main phyllaries in 1 series. **52. CREPIS**
          - i' Mature pappus gray, tawny, or brown; main phyllaries in 1 or more series. **51. HIERACIUM**

HELIANTHEAE, Sunflower Tribe (incl. HELENIEAE, Sneezeweed Tribe)

1. HELIANTHUS L. Sunflower

Coarse; heads large, radiate, peduncled; phyllaries in several series; receptacle flat to conic, chaffy; ray-flowers neutral, corollas yellow; disk-flowers bisporangiate, seeds forming; pappus of 2 or more thin chaffy scales.

- a Lobes of disk-corollas yellow.
  - b Stem leafy only in lower half, or phyllaries appressed and without long recurved tips; blades trinerved.
    - c Blades of middle and upper stem small and bractlike, of lower stem long-tapering to base. **9. H. occidentalis**
    - c' Upper leaf-blades not conspicuously smaller than lower; phyllaries closely appressed and imbricated, broad, shorter than disk. **10. H. × laetiflorus**
  - b' Stem leafy; phyllaries with spreading tips.
    - d Disk small, usually 4-7 mm in diameter; blades thin, ovate-lanceolate, trinerved, lower surface resin-dotted, mostly opposite on main stem; stem glabrous; rays about 1 cm long, 5-8. **7. H. microcephalus**
    - d' Disk and rays larger.
      - e Blades lanceolate, tapering to base, mostly alternate, not or weakly trinerved.
        - f Stem glabrous below inflorescence, glaucous.
          - g Blades lanceolate, lower surface pubescent; lobes of disk-corollas glabrous or nearly so. **13. H. grosseserratus**
          - g' Blades linear-lanceolate; lobes of disk-corollas white-pubescent. **H. × kellermani** (*H. grosseserratus* × *salicifolius*), treated under **13. H. grosseserratus**
        - f' Stem pubescent, scabrous, or hirtellous; blades scabrous on upper surface.
          - h Disk 2-3 cm wide; blades often folded lengthwise, curved; heads in a raceme; petioles short. **14. H. maximilianii**
          - h' Disk smaller; blades not folded, not curved; heads in a corymb or panicle. **12. H. giganteus**

- e' Blades broader or, if lanceolate, then sessile or short-petioled, not tapering to base, mostly opposite, usually trinerved.
  - i Blades mostly opposite, widest at base or just above, rounded or cordate at base, sessile or nearly so (petiole to 1 cm long in *H. hirsutus*).
  - j Blades clasping; lower surface of blades and of phyllaries gray-pubescent; stem densely villous. **8. *H. mollis***
  - j' Blades not or scarcely clasping, sessile or short-petioled; stem glabrous to pubescent but not densely villous.
  - k Stem glabrous below inflorescence; leaves divaricate, sessile or nearly so, scabrous above, more or less pubescent below. **3. *H. divaricatus***
  - k' Stem usually pubescent; leaves ascending, sometimes with petioles to 1 cm long. **4. *H. hirsutus***
- i' Petioles evident, often margined; blades tapering to base.
  - l Leaves mostly opposite, ovate-lanceolate, pale and usually soft-pubescent beneath, harsh above, thick, hard, entire or shallowly dentate. **5. *H. strumosus***
  - l' Leaves alternate above, median and lower or only lower opposite, usually ovate, usually sharply serrate or coarsely toothed.
    - m Stem glabrous, at least below; blades thin, smooth or slightly rough; veins slender; disk small, the corollas pubescent; usually in dry open woods. **6. *H. decapetalus***
    - m' Stem rough.
      - n Annual; receptacle flat or nearly so; leaves chiefly alternate. **1. *H. annuus***
      - n' Perennial, with coarse tuber-bearing rhizome; receptacle convex, blades thick and scabrous, midveins coarse and prominent, larger ones white; usually in moist sunny habitats. **11. *H. tuberosus***
- a' Lobes of disk-corollas red, purple, or brown, or rarely yellow in cultivated *H. annuus*.
  - o Leaves mostly opposite, blades tapering to base, cauline ones gray-green, long-pointed at tip; receptacle convex. **10. *H. × laetiflorus***
  - o' Blades cordate to truncate at base, mostly alternate, except lowermost; receptacle nearly flat.
    - p Leaf-blades often toothed; phyllaries ovate; pales not white-bearded; achenes glabrous or hairy at summit. **1. *H. annuus***
    - p' Leaf-blades mostly entire; phyllaries lanceolate; pales at center of disk white-bearded; achenes hairy all over. **2. *H. petiolaris***

**1. \**Helianthus annuus* L.**

Common Sunflower

Cultivated Escape (native to W U.S.)

Annual; stems stout, hispid; leaves mostly alternate, ovate, serrate, lower subcordate; petioles long; phyllaries ovate, more than 4 mm wide, attenuate; chaff short-hairy at tip. Weedy forms in disturbed waste areas. Aug-Oct.

REFERENCES: Riddell 1834:155 (naturalized); Selby & Craig 1890:11 (introduced); Fisher 1988:143 (illus. p. 144).

HERBARIUM RECORDS: 11 Sep 1898—Cols., *W. Kellerman*; 5 Oct 1970—E. 5th St., Cols., *Stuessy*; 8 Oct 1977—NW corner of Naughton St. & N. 5th St., *J. & B. La Duke*; 9 Aug 1990—E side of Rt. 104, S of Cols. just S of the I-270 overpass, waste area, Jackson Twp., *Lowden 4529*.

**2. \*†*Helianthus petiolaris* Nutt.**

Prairie Sunflower

Adventive (native to W U.S.)

Annual; leaf-blades mostly entire; chaff of central disk white-bearded; achenes hairy. Weed in dry waste places. Aug.

REFERENCE: Fisher 1988:143 (illus. p. 145).

HERBARIUM RECORD: 20 Aug 1929—near Amlin, *Blaydes*.

**3. *Helianthus divaricatus* L.**

Divaricate Sunflower, Woodland Sunflower

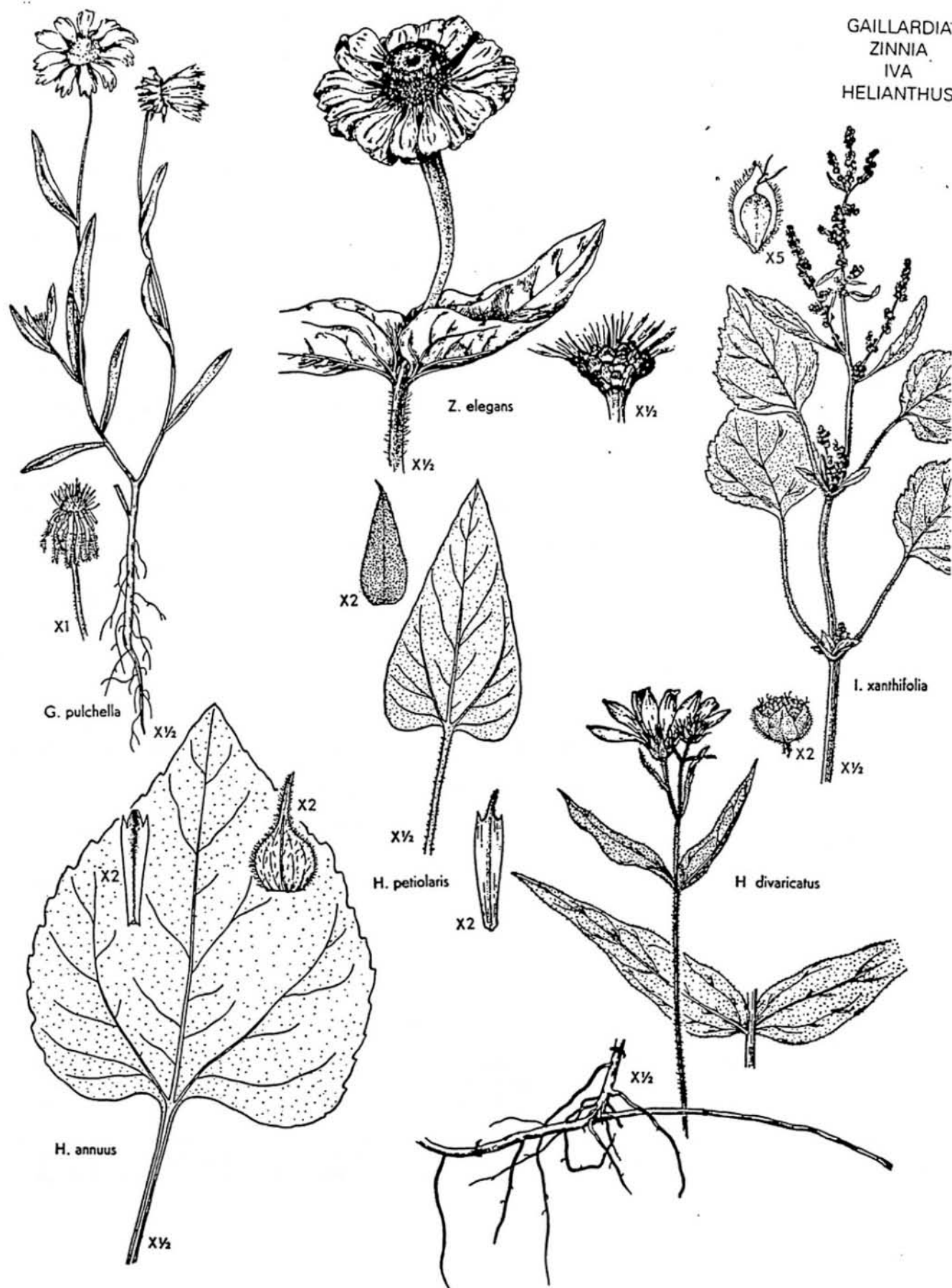
Perennial; stems glabrous to hispid-hirsute; leaves opposite, divaricate, rounded to truncate at base, nearly sessile; blades scabrous above, sparingly hispid below. Aug.

REFERENCES: Riddell 1834:155 (*Helianthus truncatus*, dry prairies); Sullivant 1840:31; Craig 1890:85 (abundant along the brook near the lake); Selby & Craig 1890:11; Fisher 1988:148 (illus. p. 151).

HERBARIUM RECORDS: 7 Aug 1890—Early's Mills, Rocky Fork R., *Selby*; 1 Aug 1990—E side of Hoover Dam Park, upland woody area just W of Cabbage Rd. & S of Walnut St., *Lowden 4489 & 4492*.

**4. *Helianthus hirsutus* Raf.**

Hairy Sunflower





Perennial; stem scabrous to densely hirsute below inflorescence; leaves opposite, base rounded or tapering to short petiole. Dry open areas. Aug.

REFERENCES: Craig 1890:85 (near the N part of the island, 8 Aug 1882); Selby & Craig 1890:11; Fisher 1988:148 (illus. p. 151).  
HERBARIUM RECORDS: Aug 1888—Cols., *Craig*; 7 Aug 1890—by Early's Mills, Rocky Fork, *Selby*; 29 Aug 1892—Georgesville, *Werner* (CLM, OS); 16 Aug 1898—OSU Bot. Garden, *J. H. Schaffner*; 4 Aug 1989—along I-71, W of Harrisburg, just N of the Franklin/Pickaway Co. Line, *Lowden* 4227; 8 Aug 1990—Rt. 40 just E of Big Darby Creek, Prairie Twp., *Lowden* 4523.

5. *Helianthus strumosus* L.

Pale-leaved Wood Sunflower

Perennial; stems glabrous below the inflorescence; leaves 3-nerved, serrate to entire; petioles to 3 cm long. Sep.  
Syn.: *H. trachelifolius* Willd.

REFERENCES: Riddell 1834:155 (dry prairies); Craig 1890:53, 85 (#211-212) (University Farm Sep 1887; along the river near the island ... and on the island); Selby & Craig 1890:11; Kellerman & Werner 1893:228; King 1981:120 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 7-Georgesville RR Site).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:152 (illus. p. 150).

6. *Helianthus decapetalus* L.

Forest Sunflower

Perennial; leaves 3-nerved, strongly to moderately serrate; phyllaries somewhat leaf-like, longer than disk. Moderately shaded areas along creeks & woods. Aug-Sep.

REFERENCES: Riddell 1834:155 (dry prairies); Craig 1890:53, 86 (#212-213; University Farm Sep 1887; grows along the river and on the island); Selby & Craig 1890:11; Fisher 1988:152 (illus. p. 153).

HERBARIUM RECORDS: 11 Aug 1890—Neil's Run, Cols., *Hine*; 26 Aug 1890—OSU campus, near Cols., *Hine*; 14 Aug 1892—Alum Creek Station, *E. M. Wilcox*; 14 Sep 1895—Blendon, *Osburn*; Aug 1896—Georgesville, *W. & K. F. Kellerman*; 18 Sep 1898—Cols., *W. Kellerman*; 7 Sep 1899—Worthington, near Cols., *Selby*; 25 Aug 1905—OSU woods, *Fischer*.

7. *Helianthus microcephalus* Torr. & A. Gray

Small Wood Sunflower

Perennial; stems glabrous; leaves mostly opposite, usually long-petiolated, resin-dotted below; heads small, 0.5-1.0 cm wide. Aug.

REFERENCES: Selby & Craig 1890:11 (*Helianthus parviflorus* Bernh.); Fisher 1988:148 (illus. p. 149).

HERBARIUM RECORDS: Aug 1890—near Cols., *E. V. Wilcox*; 7 Aug 1890—Rocky Fork R., *Selby*; 8 Aug 1890—Rocky Fork, *Selby*.

8. †*Helianthus mollis* Lam.

Ashy Sunflower, Hairy Sunflower

Perennial; stems white-villous; leaves ovate to ovate-lanceolate, sessile, clasping; phyllaries densely hispid to villous. Aug.

REFERENCES: McCance 1984:A-352; Fisher 1988:148 (illus. p. 150).

HERBARIUM RECORD: 20 Aug 1905—Arlington, *Fischer*.

9. †*Helianthus occidentalis* Riddell var. *occidentalis*

Western Sunflower, Few-leaved Sunflower

Perennial; stems with small opposite reduced leaves; leaves mostly basal, oblong-lanceolate, entire; phyllaries imbricate, appressed. Aug-Sep.

REFERENCES: Riddell 1836:577 (Type locality, Georgesville); Selby 1892a:110 (Georgesville, *Werner*); Roberts & Cooperrider 1982:69; McCance 1984:A-353; Fisher 1988:146 (illus. p. 144).

HERBARIUM RECORDS: 29 Aug 1891—Georgesville, *Werner* (CLM, OS); 29 Aug 1892—Georgesville, *Werner* (neotype, OS); 24 Sep 1892—Big Darby, near Cols., *Selby*.

10. †*Helianthus* × *laetiflorus* Pers.

Sunflower

Syn.: [*H. rigidus* (Cass.) Desf. × *H. tuberosus* L.], *H. scaberrimus* Ell.

REFERENCES: Riddell 1834:155 (Dry prairies); Selby & Craig 1890:11; Jones 1943:96.

HERBARIUM RECORD: 16 Aug 1898—OSU Bot. Garden, *J. H. Schaffner*.

NOTE: Only one specimen, perhaps best to treat under *Helianthus tuberosus*. Not mentioned for Franklin Co. by Fisher 1988:156.

11. *Helianthus tuberosus* L.

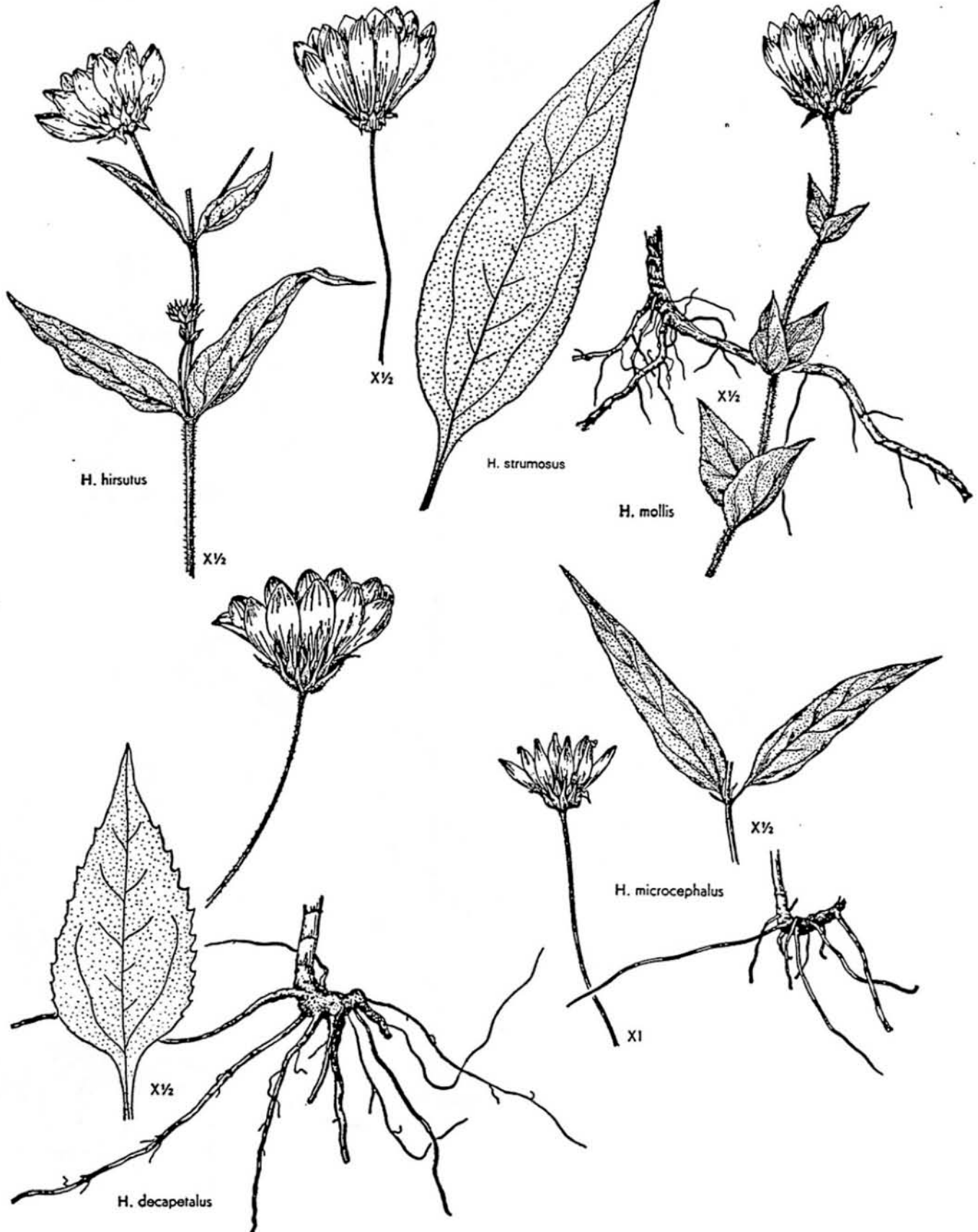
Jerusalem Artichoke

Perennial, rhizomes bearing tubers; stems coarse, hairy below inflorescence, scabrous, hirsute; leaves 3-nerved, upper alternate, lower opposite; blades scabrous above, hirsute below. Aug-Sep.

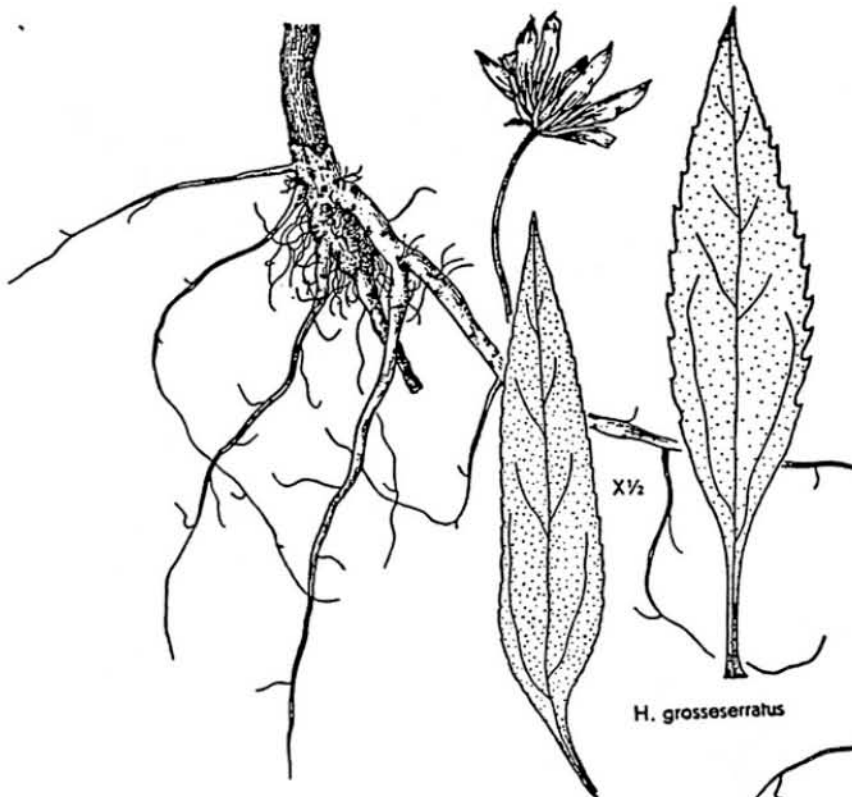
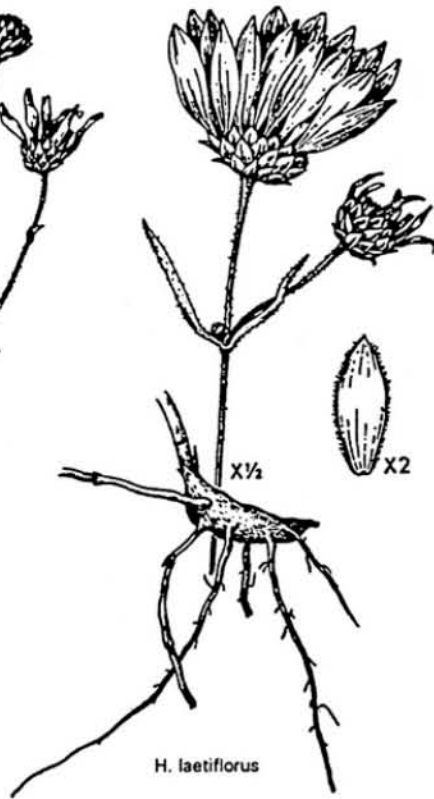
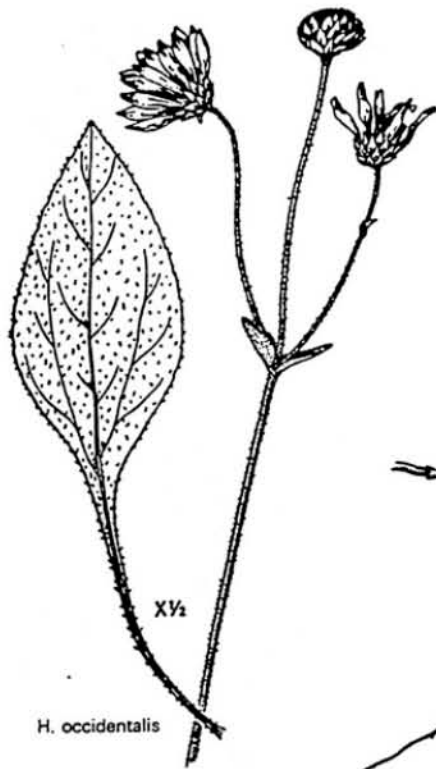
REFERENCES: Riddell 1834:155 (naturalized); Craig 1890:85 (a little E of the island, 15 Aug 1882); Selby 1891a:111a; Kellerman & Werner 1893:226 (*H. tuberosus* L. is very common near the river, but is not given in the list; specimens in the University Herbarium labelled *H. laetiflorus* are *H. tuberosus*; none of the other species of *Helianthus* quoted in the list, except *H. decapetalus* have been found by us); Fisher 1988:154 (illus. p. 155).

HERBARIUM RECORDS: Aug 1888—Cols., *Selby*; Sep 1888—Fair Grounds, Cols., *Selby*; 22 Sep 1892—Cols., *Werner* (CLM, OS); 7 Sep 1894—Cols., *W. Kellerman*; 4 Sep 1936—N of Dublin, *Gordon*; 6 Sep 1986—Highbanks Metro Park (Delaware Co.), *Higgins*; 9 Aug 1990—Grant Run along Borror Rd., W of Rt. 104, N of Rt. 665, open area, Jackson Twp., *Lowden* 4535; 7 Sep 1991—Antrim Lake border, Sharon Twp., *Lowden* 4799.

HELIANTHUS



HELIANTHUS



NOTE: Specimens of Lowden 4799 have leaves that are slightly serrate.

**12. *Helianthus giganteus* L.**

Swamp Sunflower

Perennial; leaves lanceolate, alternate, subsessile or with short often ciliate petioles; phyllaries ciliate. Aug-Sep.  
REFERENCES: Riddell 1834:155 (dry prairies); Selby & Craig 1890:11; Selby 1892a:110 (Rocky Fork, Selby); Fisher 1988:148 (illus. p. 149).  
HERBARIUM RECORDS: 1890—Cols., Selby; 7 Aug 1890—near New Albany, Selby; 17 Sep 1892—Cols., Werner (CLM, OS); Sep 1898—Cols., W. Kellerman.

NOTE: Perhaps †*Helianthus doronicoides* Lam. of Selby & Craig 1890:11 and Selby 1891b:74 (prairie plants of the west here ... near Cols. ... on the E limits of their range) belongs here. Fisher 1988:156 treats it as a hybrid: *Helianthus* × *doronicoides* Lam. (*Helianthus giganteus* × *Helianthus mollis*).

**13. *Helianthus grosseserratus* M.Martens**

Sawtooth Sunflower

Perennial; stems mostly glabrous and glaucous below inflorescence; leaves mostly opposite with 1 main nerve, petiolate. Aug-Oct.

REFERENCES: King 1981:120 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park Bluff Prairie, not on prairie but on adjacent park property. Not included in total species for the bluff prairie); Fisher 1988:146 (illus. p. 147).

HERBARIUM RECORDS: 16 Aug 1898—OSU Bot. Garden, J. H. Schaffner, 1928—E. Thomas; 12 Oct 1980—corner of Hudson St. and I-71, behind Sohio station, Doskotch.

The following hybrid is recognized:

†*Helianthus* × *kellermanii* Britton (*H. grosseserratus* M.Martens × *H. salicifolius* A.Dietr.) Kellerman's Sunflower

REFERENCES: Britton 1901:994 (Type locality, Cols., W. Kellerman); Jones 1943:96; Fisher 1988:154, 156 (the original specimen of *Helianthus kellermanii* was collected in Cols., Ohio (Britton, 1901); for further discussion of this hybrid, see Kellerman (1902) and Long (1955)).

HERBARIUM RECORD: 5 Oct 1898—Cols., W. Kellerman (topotypes! - 3 sheets; OS).

**14. *Helianthus maximilianii* Schrad.**

Maximilian Sunflower

Perennial; stems pubescent; leaves alternate; blades folded, entire, sessile; phyllaries long-attenuate. Oct.

REFERENCE: Fisher 1988:146 (illus. p. 145).

HERBARIUM RECORD: 3 & 13 Oct 1905—Arlington, Fischer.

**2. RUDBECKIA L. Coneflower**

Usually rough; leaves alternate, blades undivided, lobed, or pinnatifid; heads large, long-peduncled, radiate; receptacle conic or convex, chaff partly enclosing achenes; phyllaries in 2 or 3 rows; ray-flowers neutral, corollas yellow, orange, or partly purple; disk-flowers bisporangiate, seeds forming; pappus none or a short crown.

- a Disk-corollas green or yellow; style tips blunt; lower blades or some of them cleft or pinnatifid. 4. *R. laciniata*
- a' Disk-corollas purple or brown; blades 3-lobed or unlobed.
- b Pappus none; pales with bristle tips; style-tips subulate, elongate; leaves entire or finely toothed, basal blades oblanceolate, cauline blades linear to oblanceolate. 1. *R. hirta*
- b' Pappus a crown; pales without bristle tips, under surface glabrous or pubescent, edges ciliate or not; style tips blunt and short.
- c Pales glabrous, ending in a long cusp, lower cauline blades often 3-lobed. 3. *R. triloba*
- c' Pales glabrous or pubescent, not ending in a long cusp; sometimes ciliate; blades not lobed. 2. *R. fulgida*, blades mostly coarsely dentate; rays 2.5-4 cm long, var. *sullivantii*

**1. *Rudbeckia hirta* L.**

Black-eyed Susan, Yellow Daisy

Stem hirsute; leaves entire or dentate; disk corollas purple or brown; chaff acute, with bristle tips, margins hispid-ciliate; pappus none. Various habitats. Jun-Oct. Syn.: *R. serotina* Nutt.

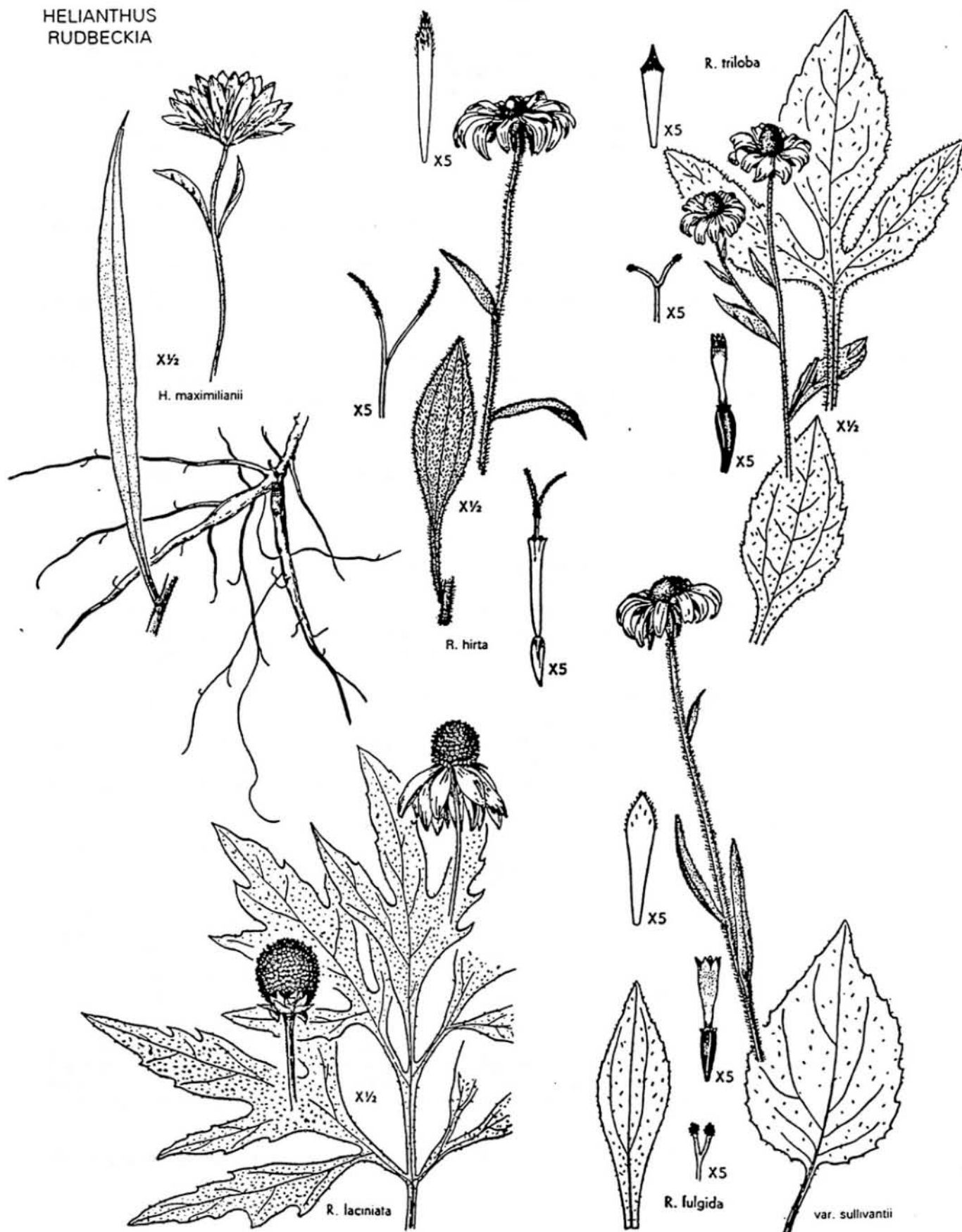
REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:32; Craig 1890:85 (grows in the meadow S of the road and near the river, 9 Sep 1882, 12 Jun 1887, 23 Jun 1889); Selby & Craig 1890:12; King 1981:121 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 8-Graessle Rd. Bluff Site); Fisher 1988:134 (illus. p. 135).

HERBARIUM RECORDS: Jul & Aug 1888—Cols., Craig; 4 Oct 1890—Central College, E. V. Wilcox; 6 Aug 1893—Cols., Werner; 2 Jul 1911—½ mi. E of Westerville, Hanawalt; 2 Jul 1980—OSU, Campus Loop Rd., SW of bridge over Olentangy R., Doskotch; 6 Jun 1982—Blendon Woods, Owens; 8 Jun 1986—Highbanks Metro Park (Delaware Co.), open field, Witsberger; 29 Jun 1986—Highbanks Metro Park (Delaware Co.), open field, Witsberger 921 (OWU); 4 Aug 1989—W of Harrisburg, along I-71, NE of Franklin/Pickaway Co. Line, Lowden 4232; 5 Aug 1989—along Godown Rd., between Commerce Pl. & Le Anne Marie Circle, Perry Twp., Lowden 4239; 11 Aug 1989—just S of Fishinger Rd. Bridge, Tarbue-Murphy Landing, along E bank of Scioto R., Upper Arlington, Perry Twp., Lowden 4266.

**2. †*Rudbeckia fulgida* Aiton var. *sullivantii* (C.L.Boynton & Beadle) Cronquist**

Coneflower, Orange Coneflower

HELIANTHUS  
RUDBECKIA



Leaves lanceolate to ovate, margins coarsely dentate to nearly entire; disk corollas dark brown or purple, rays yellow or yellow-orange; chaff obtuse to acute, glabrous or ciliolate on margins; pappus a crown. Aug-Sep. Syn.: *R. speciosa* Wender.

REFERENCES: Sullivant 1840:32; Craig 1890:85 (sparingly E of the island and N of road); Selby & Craig 1890:12; Selby 1892a:111 (#441 Re-collections, Georgesville, *Werner*); Kellerman & Werner 1893:228; Werner 1893:93 (S of Cols., *Werner*); Boynton & Beadle 1901:15 (*Rudbeckia sullivanii* C.L. Boynton & Beadle; Type locality, Cols., 1840, *Sullivant*); Jones 1943:103; Fisher 1988:136, 139 (illus. p. 138).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 29 Aug 1892—Georgesville, *Werner*; 5 Aug 1893—Cols., *Werner*; 5 Aug 1893—near canal S of Cols., *Werner*; 13 Aug 1898—Cols., *W. Kellerman*; 4 Sep 1936—N of Dublin, *Gordon*.

### 3. *Rudbeckia triloba* L.

Three-lobed Coneflower

Leaves entire to nearly evenly dentate, lower blades often 3-lobed; disk corollas dark purple, rays yellow-orange, base somewhat orange; chaff glabrous with a long point; pappus a crown. Woody stream banks & open places. Jul-Sep.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:32; Craig 1890:85 (grows along the river, 9 Aug 1882); Selby & Craig 1890:12; Fisher 1988:134, 136 (illus. p. 137).

HERBARIUM RECORDS: 1890—Cols., *Selby*; 6 Aug 1890—Cols., *Werner* (CLM); 11 Aug 1890—OSU, near Cols., *Hine*; Sep 1891—Central College, *Selby*; 20 Aug 1892—Cols., *Bogue*; 20 Sep 1895—N. Cols., Olentangy, *Osburn*; 20 Aug 1899—Scioto R., *Selby*; 10 Aug 1929—Marble Cliff quarries, W of Cols., *Blaydes*; 4 Sep 1936—N of Dublin [a mixed collection, on sheet with *Ratibida pinnata*], *Gordon*; 18 Jul 1982—Blendon Woods, woodcock fields, *Owens*; 20 Sep 1987—Highbanks Metro Park (Delaware Co.), *Morawetz*; 11 Aug 1989—Rt. 33, ½ mi. S of the Henderson Rd. jct., along the Scioto R., Upper Arlington, Perry Twp., *Lowden 4262*; 28 Aug 1989—Battelle Darby Creek Metro Park, along Little Darby Creek embankment, Pleasant Twp., *Lowden 4300*; 31 July 1990—Whetstone Park to Northmoor Park, walk path along Olentangy R., Clinton Twp., *Lowden 4469*.

### 4. *Rudbeckia laciniata* L.

Cutleaf Coneflower

Disk corollas green, gray or yellow; some lower blades cleft or pinnatifid. Aug-Sep.

REFERENCES: Riddell 1834:155 (bottomland); Sullivant 1840:32; Craig 1890:85 (grows in the clover field near the island, 8 Aug 1882); Selby & Craig 1890:12; Fisher 1988:134 (illus. p. 135).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Aug 1888—Cols., *Craig*; 7 Aug 1890—Rocky Fork R., *Selby*; 11 Aug 1890—Olentangy R., Cols., *Hine*; 27 Aug 1890—Franklin Co., *Selby*; 11 Sep 1890—OSU, river, *E. M. Wilcox*; 16 Aug 1898—OSU, Botanical Gardens, Cols., *J. H. Schaffner*; 22 Aug 1899—S. Cols., *Selby*; 6 Aug 1982—Sharon Woods, Cols., *Owens*; 11 Aug 1989—just S of Fishinger Rd. Bridge, Tarbue-Murphy Landing, along Scioto R. bank, Upper Arlington, Perry Twp., *Lowden 4281*; 28 Aug 1989—Battelle Darby Creek Metro Park, along Little Darby Creek embankment, Pleasant Twp., *Lowden 4305*.

## 3. ECHINACEA Moench Coneflower

Leaves mostly alternate, blades ovate or narrower; heads radiate, large, solitary or few, peduncled; phyllaries in 2-4 series; receptacle conic, chaffy, pales with elongate slender tip, longer than disk-flowers; achenes not forming in ray-flowers, corollas reddish-purple, up to 6 cm long; disk-flowers bisporangiate, purple, seeds forming; pappus a short dentate crown.

### 1. †*Echinacea purpurea* (L.) Moench

Purple Coneflower

Leaves alternate, petioles sometimes winged; ray-corollas pale purple to reddish-purple; disk-corollas purple; pappus short, slightly toothed; chaff long, slender, tips exceeding disk-corollas. Jul-Oct. Syn.: *E. purpurea* Moench, *Rudbeckia purpurea*

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:31, 58; Craig 1890:85 (Mr. Green found this growing along the river, 29 Jul 1882); Selby & Craig 1890:11; King 1981:119 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie); Fisher 1988:139 (illus. p. 139).

HERBARIUM RECORDS: 29 Jul 1882—Olentangy R., *W. Green*; Oct 1891—Big Darby R., *Selby*; 15 Jul 1892—Georgesville & Cols., *Bogue* (BGSU, OS); 5 Jul 1979—W-facing bluffs above Big Darby Creek, Darby Creek Metro Park, just N of scenic lookout W of Koebel-Suydam Rd., Pleasant Twp., Galloway Quad., *Cusick 19460*.

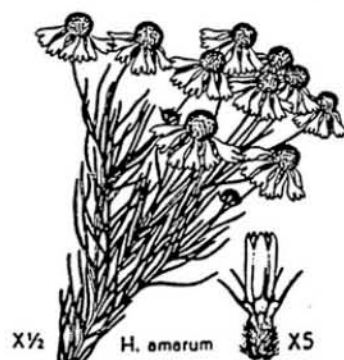
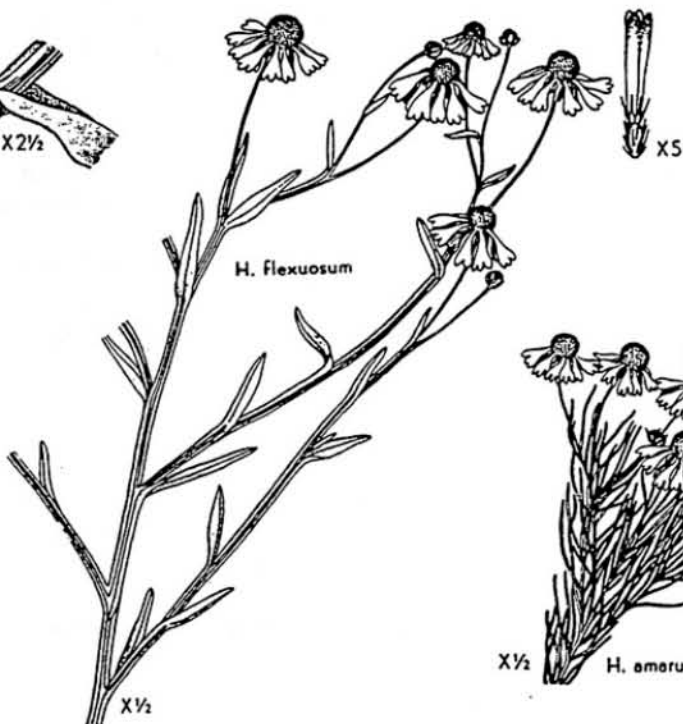
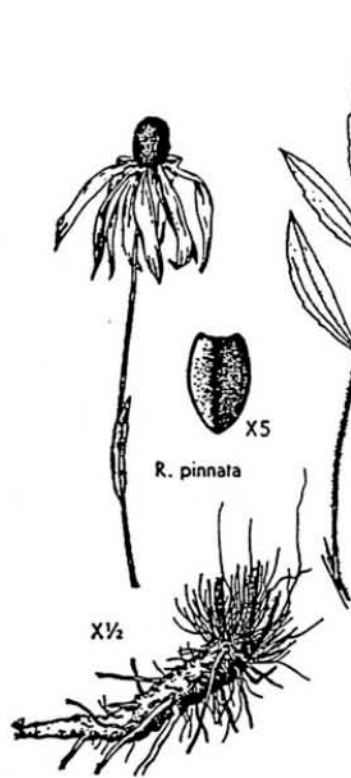
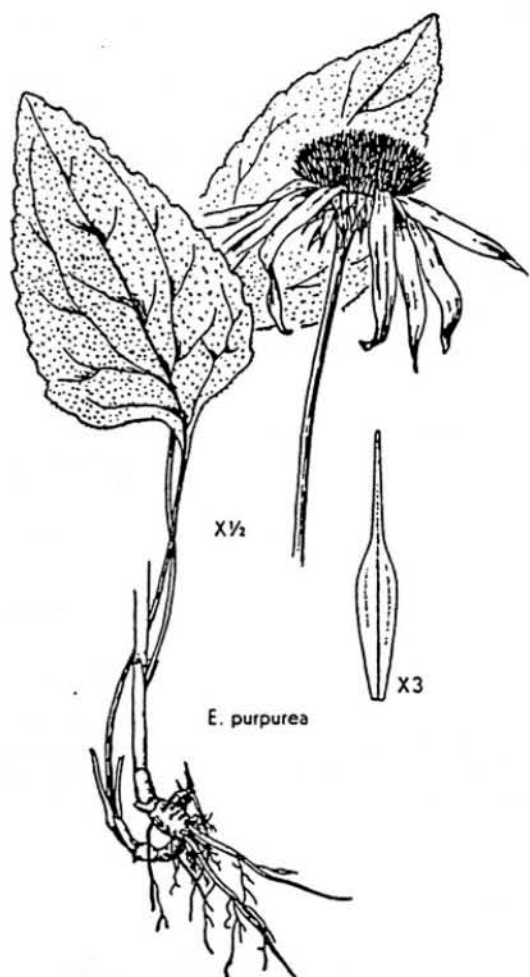
## 4. RATIBIDA Raf. Prairie Coneflower

Leaves alternate, blades pinnately parted; heads radiate, long-peduncled; phyllaries few; receptacle columnar, chaffy; ray-flowers neutral, corollas yellow or partly or wholly brown-purple; disk dark, flowers bisporangiate, seeds forming; tips of pales grayish-hairy; pappus, 1 or 2 teeth or none.

a Disk ellipsoid, length less than twice width; pappus none; achenes smooth; style-branches lanceolate, acute.

### 1. *R. pinnata*

ECHINACEA  
RATIBIDA  
HELENIUM



a' Disk cylindrical, length usually more than twice width; pappus of 1 or 2 teeth; achenes ciliate on inner margin; style-branches short and blunt. **2. *R. columnifera***

**1. *Ratibida pinnata* (Vent.) Barnhart**

Globular Coneflower

Plants fibrous-rooted; disk slightly higher than thick; pappus none. Old fields. Jul-Aug. Syn.: *Lepachys pinnata* Torr. & A. Gray, *Obeliscaria pinnata* Cass., *Rudbeckia pinnata* Michx.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:32, 58; Selby & Craig 1890:11; Selby 1892a:111 (#432, Georgesville, Werner); King 1981:121 (Gray-headed Coneflower; Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 7-Georgesville RR Site, 8-Graessle Rd. Bluff Site); Fisher 1988:140 (illus. p. 141).

HERBARIUM RECORDS: 1840—Cols., Sullivant; 27 Aug 1892—Werner; 29 Aug 1892—Georgesville, Werner (CLM); 4 Sep 1936—N of Dublin, Gordon; 19 Jul 1977—W-facing bluffs above Big Darby Creek, N of Pickaway Co. line, NW of Orient, Pleasant Twp., Cusick (KE); 19 Jul 1989—Antrim Park, W of Olentangy R., N of Bethel Rd., E of Rt. 315, Lowden 4218 & 4220; 11 Aug 1989—Rt. 33, ½ mi. S of Henderson Rd. jct. along the Scioto R., Lowden 4263.

**2. \**Ratibida columnifera* (Nutt.) Wootton & Standl.**

Columnar Coneflower

Adventive (native to the W U.S.)

Plants taprooted; disk 2.0-4.5 times as high as thick; pappus awn-toothed. Dry open places. Jul-Oct.

REFERENCE: Fisher 1988:140 (a Franklin Co. specimen at the OSU Herbarium; probably nonindigenous in Ohio where it has not been collected since 1899).

HERBARIUM RECORDS: 30 Oct 1899—OSU campus near observatory, J. H. Schaffner; 22 Jul 1992—Quarry off Rt. 33, E side of Scioto R., front of Riverside Green entrance, ½ mi. S of Rt. 161, Perry Twp., Lowden 4996.

**5. HELENIUM L. Sneezeweed**

Leaves alternate, gland-dotted; heads usually radiate; phyllaries in 1-3 series; receptacle convex or conic, naked; ray-corollas narrowed to base, yellow or brownish, 3-lobed; disk-flowers bisporangiate, seeds forming, corollas yellow or brown-purple, lobes glandular-hairy; pappus of several thin scales.

*Helenium microcephalum* DC. has been cited for Franklin Co. by Selby 1891a:111a (Sellsville); Selby 1891b:75 (southern Texas and adjacent Mexico); and in J. Cols. Hort. Soc. (1892) 7:42 (newly introduced at Sellsville; southwestern Texas & adjacent Mexico). No specimens have been seen from Franklin Co.

a Leaves linear-filiform, not decurrent on stem. **3. *H. amarum***

a' Leaves broader, decurrent on stem.

b Disk corollas yellow. **1. *H. autumnale***

b' Disk corollas purple or brown. **2. *H. flexuosum***

**1. *Helenium autumnale* L.**

American Sneezewort, Common Sneezeweed

Perennial; leaves narrowly ovate-lanceolate, more than 5 mm wide, decurrent on stem; disk-corollas yellow. Moist low ground. Aug-Oct.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:31 (naturalized plant); Craig 1890:54, 56, 86 (#218, along the river S of the road and W of the big box elder, 20 Aug 1882; University Farm Sep & Oct 1887, 5 Nov 1888); Selby & Craig 1890:11; King 1981:120 (Pleasant Twp.: 1-Battelle Darby Creek Metro Park, Bluff Prairie); Fisher 1988:177 (illus. p. 178).

HERBARIUM RECORDS: Sep 1833 & 14 Sep 1834—Scott's Plains, J. Paddock Collection (ILL); 1840—Cols., Sullivant; Aug 1888—Cols., Craig; 30 Aug 1890—OSU Farm, near Cols., Selby; 3 Oct 1891—Georgesville, Selby; 7 Oct 1893—Cols., Werner (CLM); 21 Sep 1895—S Cols., Osburn; 8 Oct 1902—S Cols., Sanders; 25 Aug 1982—Blendon Woods, Day Camp Area, Owens; 6 Sep 1986—Highbanks Metro Park (Delaware Co.), Higgins; 23 Sep 1986—Highbanks Metro Park (Delaware Co.), Watts 355 (OS, OWU); Summer 1988—along the Olentangy R., OSU campus, Cols., Delong & along Big Darby Creek between I-70 and Little Darby Creek, Galloway Quad., Delong; 28 Aug 1989—Battelle Darby Creek Metro Park, along Little Darby Creek, Pleasant Twp., Lowden 4303; 13 Aug 1991—Olentangy R., mudflat N of Lane Ave. bridge, S of Fawcett Center, Clinton Twp., Lowden 4877; 17 Sep 1991—E bank of Big Darby Creek, just N of Rt. 40, Prairie Twp., Lowden 4849; 23 Sep 1991—Scioto R., banks just N of I-270, Hamilton Twp., SW Cols. Quad., McCormac 4343.

**2. \**Helenium flexuosum* Raf.**

Southern Sneezeweed, Naked Sneezeweed

Adventive (introduced from S U.S.)

Perennial; leaves linear-lanceolate, more than 5 mm wide, decurrent on stem; disk-corollas purple or brownish.

Aug-Oct. Syn.: *H. nudiflorum* Nutt.



REFERENCES: Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers' Circus); Selby 1891c:148 (Western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio, near Cols.); King 1981:120 (Pleasant Twp.: 1-Battelle Darby Creek Metro Park, Bluff Prairie); Fisher 1988:177 (illus. p. 178).  
HERBARIUM RECORDS: Aug 1890—grounds at Sell's Bros. Circus, near Cols., *E. M. Wilcox*; 26 Oct 1890—Sellsville, *Selby*; 27 Oct 1890—Sellsville, *Selby*; 1 Aug 1891—Sellsville, *E. V. Wilcox*; Aug 1892—Cols., *Werner* (CLM); 18 Aug 1892—Sellsville, Cols., *Bogue*; 12 Sep 1937—Minerva Park, *Chapman*.

3. \*†*Helenium amarum* (Raf.) H. Rock  
Adventive (introduced from S & W U.S.)

Slender-leaved Sneezeweed

Annual; leaves linear-filiform, not decurrent on stem. Aug-Oct. Syn.: *H. tenuifolium* Nutt.

REFERENCES: Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers' Circus); Selby 1891c:149 (Western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio, near Cols.); Jones 1943:96; Fisher 1988:179 (illus. p. 178).

HERBARIUM RECORDS: Aug 1890—grounds of Sell's Bros. Circus, near Cols., *E. V. Wilcox*; 25 Oct 1890—Sellsville near Cols., *Wilcox & Green*; 27 Oct 1890—Sellsville, Cols., *Selby*; 20 Sep 1891—Sellsville, Cols., *E. V. Wilcox*; 20 Sep 1898—grounds of Sells Circus, *W. Kellerman*.

6. VERBESINA L. Wing-stem

Stem more or less winged; heads radiate or rarely rays wanting; phyllaries few or in a few series; receptacle convex to conic, chaffy; ray flowers sometimes few or wanting; disk flowers bisporangiate, seeds forming; pappus of a few awns. (*Actinomeris* Nutt.)

- a Heads 1-few; rays 8-15, yellow; phyllaries erect or spreading; blades sessile, soft-hairy beneath. 1. *V. helianthoides*  
a' Heads usually many; rays 2-8, yellow; phyllaries soon deflexed; blades tapering to short petiolelike base; achenes usually winged. 2. *V. alternifolia*

1. †*Verbesina helianthoides* Michx.

Hairy Wing-stem

Syn.: *Actinomeris helianthoides* Nutt.

REFERENCES: Sullivant 1840:30; Selby & Craig 1890:12.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:157 (illus. p. 160).

2. *Verbesina alternifolia* (L.) Britton

Wing-stem

Stems usually winged by decurrent leaf bases; leaves alternate, lanceolate or lance-elliptic; blades tapering to short petiolelike base; heads globose, numerous; rays yellow, 2-8; phyllaries deflexed in fruit; achenes usually winged. Dry open woods & thickets near streams. Aug-Sep. Syn.: *Actinomeris alternifolia* (L.) DC.

REFERENCES: Riddell 1834:155 (*Actinomeris squarrosa*, meadows); Sullivant 1840:30; Craig 1890:54, 86 (*Actinomeris squarrosa* Nutt.; along the river N of the road leading to the island, 8 Aug 1882; University Farm Sep & Oct 1887); Selby & Craig 1890:11 (*Actinomeris squarrosa* Nutt.); Fisher 1988:158 (illus. p. 160).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 7 Aug 1890—near Cols., Jaeger's Ice Pond, *Selby*; 3 Sep 1892—Cols., *Bogue*; 20 Aug 1982—Blendon Woods, Day Camp area, *Owens*; 11 Aug 1989—Starret Rd., Olentangy R., just N of Henderson Rd., Clinton Twp., Cols., *Lowden 4259*.

7. ECLIPTA L.

Stem spreading, sometimes rooting at nodes; leaves opposite, blades lanceolate or narrower, slightly serrate; phyllaries in 1 or 2 series; receptacle flat; chaff slender; heads small, radiate; ray-corollas white, minute; disk-flowers bisporangiate, seeds forming; achenes 3-4-angled or compressed; pappus none or a minute crown or 2 short teeth.

1. *Eclipta prostrata* (L.) L.

Yerba-de-Tago

Annual. Weedy plant of moist places. Jul-Oct. Syn.: *E. alba* (L.) Hassk.

REFERENCES: Selby & Craig 1890:11; Fisher 1988:133 (illus. p. 133).

HERBARIUM RECORDS: 1890—Lake Park, *Selby*; Aug 1891—RR yards, near Cols., *E. M. Wilcox*; 26 Jul 1902—Cols., *W. Kellerman*; 3 Oct 1907—S Cols., *Detmers*; 5 Jul 1991—OSU Campus, E bank of Olentangy R., S of Lane Ave. bridge, Clinton Twp., *Lowden 4755*; 23 Sep 1991—Scioto R., just N of I-270, gravel bar, Hamilton Twp., SW Cols. Quad., *McCormac 4352*.

8. HELIOPSIS Pers. Ox-eye

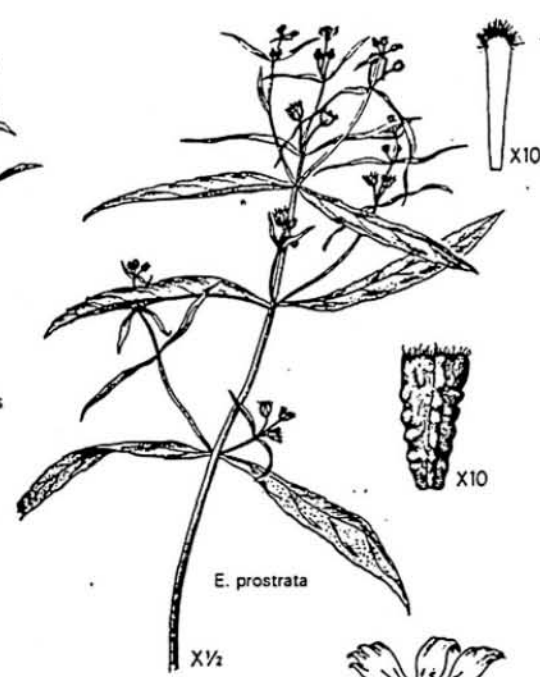
VERBESINA  
ECLIPTA  
HELIOPSIS  
COREOPSIS



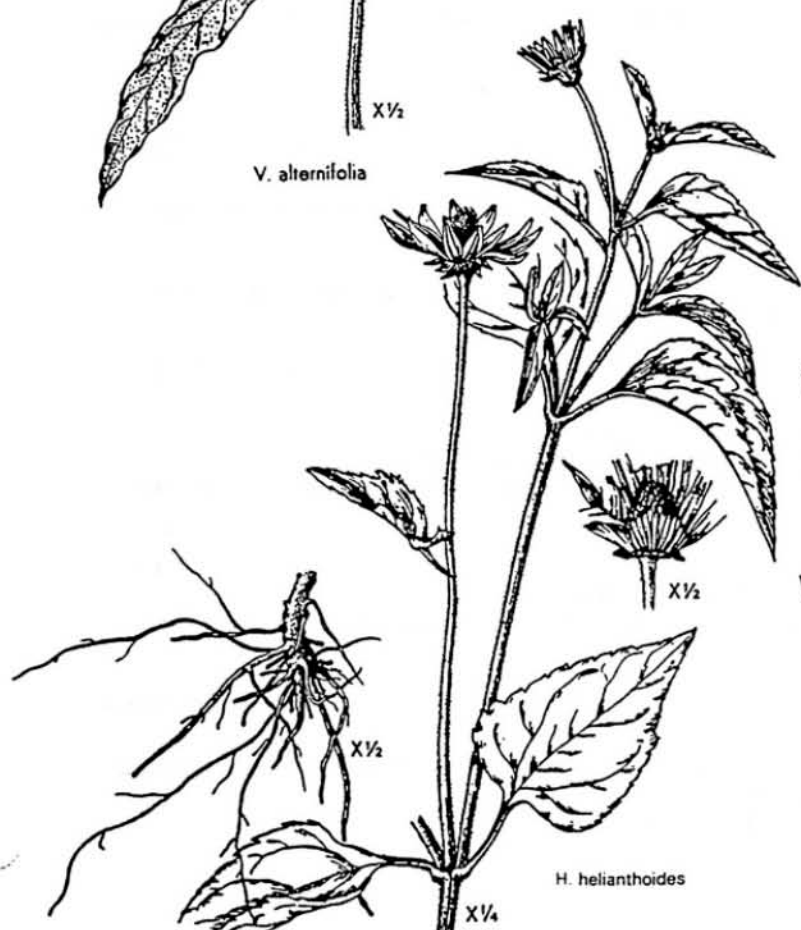
*V. alternifolia*



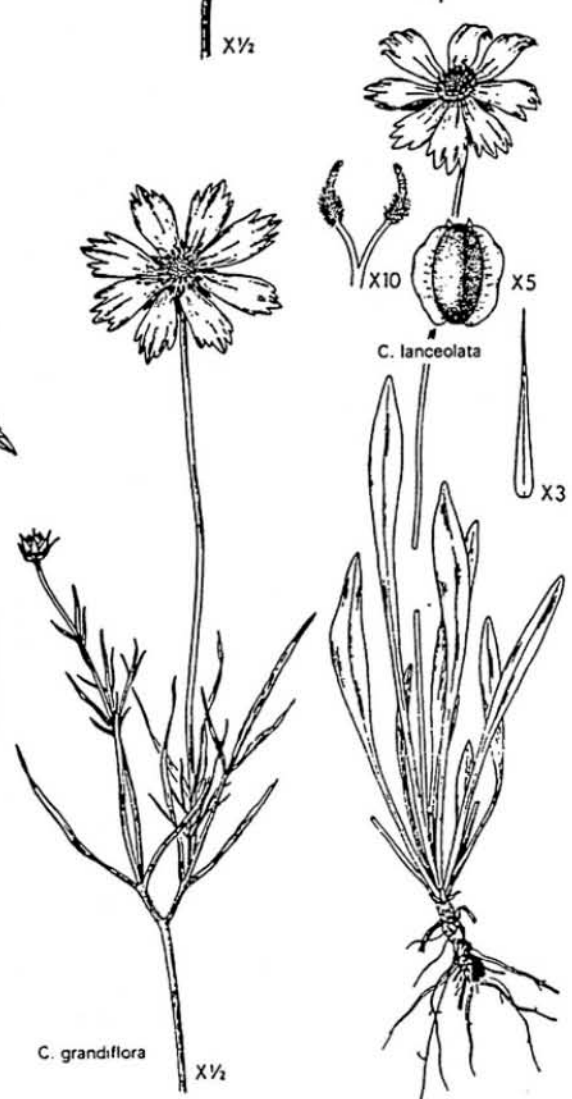
*V. helianthoides*



*E. prostrata*



*H. helianthoides*



*C. grandiflora*

*C. lanceolata*

Stem glabrous or scabrous; leaves opposite, blades ovate to lance-ovate; heads large, peduncled, radiate; phyllaries in a few series, nearly equal; receptacle conic, chaffy; ray-flowers carpellate, seeds usually forming, corollas yellow; disk-flowers bisporangiate, seeds forming, pappus none, or a few teeth, or a crownlike border.

1. *Heliopsis helianthoides* (L.) Sweet var. *helianthoides*

Ox-eye, Smooth Ox-eye

Perennial. Open woods & waste places. Jul-Aug.

REFERENCES: Riddell 1834:155 (*Heliopsis laevis*, bottomland); Sullivant 1840:31 (*Heliopsis laevis* Pers.); Craig 1890:85 (*Heliopsis laevis* Pers., rather abundant along the river just S of the road and nearly W of the big box elder, 11 Jul 1882); Selby & Craig 1890:11 (*Heliopsis laevis* Pers.); King 1981:120 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 7-Georgesville RR Site); Fisher 1988:130 (illus. p. 132).  
HERBARIUM RECORDS: 1840—Cols., Sullivant; 30 Jul 1883—University farm, Olentangy R., Devo; Jul 1888—Cols., Craig; Aug 1890—E of Big Walnut, Selby; 7 Aug 1890—Selby; 9 Jul?—OSU, Cols., Hine; 12 Aug 1892—Cols., Werner (CLM); 5 Jul 1899—Cols., Helfrich; 2 Jul 1901—Georgesville, Coberly; 30 Jul 1929—near Fishinger Bridge, Blaydes; 4 Sep 1936—Scioto R. terrace, N of Dublin, Gordon; 16 Jul 1986—Highbanks Metro Park (Delaware Co.), Watts; 16 Aug 1987—Highbanks Metro Park (Delaware Co.), Witsberger 956; 19 Jul 1989—Antrim Park, E. of Rt. 315, Cols., Lowden 4213; 11 Aug 1989—S of Fishinger Rd. Bridge, Tarque-Murphy Landing, along Scioto R., Lowden 4284-4285; 31 Jul 1990—Whetstone to Northmoor Park, walk path along Olentangy R., Clinton Twp., Cols., Lowden 4470.

9. COREOPSIS L. Tickseed

Leaves opposite or the upper alternate; heads radiate, long-peduncled; phyllaries in about 2 series, united at base; receptacle flat or slightly convex, chaff thin; disk-flowers bisporangiate, seeds forming; pappus of 2 awns or teeth, a short crown, or none.

a Leaf-blades palmately divided or palmately compound, leaflets or leaf-segments lanceolate, 3 or sometimes 5; at least main leaves petioled; rays yellow; achenes winged. 3. *C. tripteris*

a' Leaf-blades unlobed or pinnately lobed or pinnately divided.

b Rays yellow with red-brown bases; disk dark; blades pinnately divided, lobes narrow; achenes wingless.

4. *C. tinctoria*

b' Rays yellow; disk yellow; achenes broadly winged.

c Cauline leaves on only lower part of stem, blades entire or with 1 or 2 pairs of small lobes.

2. *C. lanceolata*

c' Stem leafy nearly to summit, blades mostly divided. 1. *C. grandiflora*

1. \**Coreopsis grandiflora* Hogg

Big-flower Tickseed

Adventive (native of SE U.S.)

Leaves extend well up the stem, pinnately divided, uppermost 3-5 parted; outer phyllaries about the same length as the inner. Waste places. Jun-Aug.

REFERENCE: Fisher 1988:164 (illus. p. 162).

HERBARIUM RECORDS: 14 Aug 1905—Marble Cliff, Fischer; 15 Jun 1934—waste ground, OSU campus, J. H. Schaffner; 19 Jun 1973—Quarry 1 mi. S of Dublin, E side of Scioto R. along SR 33, Washington Twp., Cahall & Roberts 3595.

2. \*†*Coreopsis lanceolata* L.

Longstalk Tickseed

Cultivated Escape (native of Ohio)

Stems leafy only towards the base; leaves usually pinnate. Dry areas. Jun.

REFERENCES: Jones 1943:91 (*Coreopsis lanceolata* L. var. *floribunda* Hort.); Fisher 1988:164 (illus. p. 165).

HERBARIUM RECORDS: 17 Jun 1934—OSU campus, Cols., J. H. Schaffner; 17 Jun 1937—Montgomery Twp., J. H. Schaffner; 14 Jun 1989—OSU campus, behind B&Z Bldg., Cols., Lowden 4173.

3. *Coreopsis tripteris* L.

Tall Tickseed

Leaves usually trifoliolate, petiolate. Oct. Syn.: *Chrysostemma tripteris* Less.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:31, 57; Selby & Craig 1890:11; Fisher 1988:161 (illus. p. 163).

HERBARIUM RECORD: 31 Oct 1891—Georgesville, Selby.

4. \**Coreopsis tinctoria* Nutt.

Golden Tickseed

Cultivated Escape (introduced from W U.S.)

Cauline and basal leaves pinnately divided, segments linear or narrow-lanceolate; outer phyllaries much smaller and shorter than the inner; disk-corollas 4-toothed. Jul.

REFERENCES: Selby & Craig 1890:11 (introduced); Fisher 1988:161 (illus. p. 162).

HERBARIUM RECORD: Jul 1890—near Cols., E. M. Wilcox.

COREOPSIS  
BIDENS



10. *BIDENS* L. Bur-marigold, Beggar-ticks

Leaves opposite; heads radiate or discoid; outer phyllaries often foliaceous, inner of different appearance, usually striate; receptacle flat or nearly so, chaffy; disk flowers bisporangiate, seeds forming; corollas yellow; pappus of 2-6 usually rigid awns or teeth, usually barbed, often retrorsely.

- a Leaf-blades serrate, unlobed, or rarely 3-5-lobed.
  - b Tip of achene convex; rays large and showy or wanting; leaves sessile or connate-perfoliate; heads often nodding in fruit. 1. *B. cernua*
  - b' Tip of achene flat or concave; rays absent or small and scarcely exceeding disk; leaves more or less petioled; heads erect. 2. *B. tripartita*
- a' Leaves pinnately compound or pinnately divided.
  - c Heads discoid or rays short and rudimentary.
    - d Leaf-blades 2-3 times pinnately divided; achenes linear, 4-angled, 2-3 times as long as phyllaries; heads few-flowered. 6. *B. bipinnata*
    - d' Leaf-blades, or some of them, pinnately compound, segments broader than linear; achenes flat.
      - e Outer phyllaries glabrous, usually 4(3-5); upper leaves often simple, lower and middle ones 3-foliolate; heads about 6 mm wide or less. 3. *B. discoidea*
      - e' Outer phyllaries 5 or more, hairy on margin; heads larger.
        - f Outer phyllaries 5-10, margins sparsely hairy; disk-corollas orange; achenes dark brown or blackish, the inner ones 7-10 mm long. 4. *B. frondosa*
        - f' Outer phyllaries 10-15 or more, margins quite hairy; disk-corollas yellow; achenes pale brown, green, or dark, inner ones 9-17 mm long. 5. *B. vulgata*
  - c' Heads radiate, rays exceeding disk.
    - g Achenes cuneate, without thin brittle margin; outer phyllaries 6-8, smooth or ciliate, usually not exceeding disk. 7. *B. coronata*
    - g' Achenes obovate, with thin brittle, sometimes erose, margin.
      - h Outer phyllaries 8-12, margins smooth or moderately ciliate, mostly shorter than inner. 8. *B. aristosa*
      - h' Outer phyllaries 12-25, margins coarsely ciliate, mostly longer than inner. 9. *B. polylepis*

1. *Bidens cernua* L.

Bur-marigold, Nodding Stick-tight

Leaves simple, serrate, sessile or connate; ray flowers present or absent; heads often nodding in fruit. Low moist areas. Aug-Oct. ? incl. *B. laevis* (L.) Britton, Sterns & Poggenb.

REFERENCES: Riddell 1834:155 (marshes); Sullivant 1840:30 (*Bidens chrysanthemoides* Michx.); Craig 1890:54, 86 (*Bidens chrysanthemoides* Michx.); Selby & Craig 1890:11 (& *Bidens chrysanthemoides* Michx.); Fisher 1988:172 (illus. p. 173).

HERBARIUM RECORDS: 4 Sep 1890—on creek from Alum C. to Cent. Coll., Cols., Selby; 21 Oct 1891—Cols., Werner (CLM); Aug 1892—Cols., Werner; 7 Sep 1896—Lake Park, near Cols., Selby; 26 Sep 1969—along Olentangy R., opp. Lincoln Tower, on OSU campus, W. Owen 075; 21 Sep 1982—Blendon Woods, Owens; Summer 1988—along Olentangy R., OSU campus, Cols., Delong; Summer 1988—Galloway Quad. along Big Darby Creek between I-70 and Little Darby Creek, Delong; 18 Sep 1989—Highbanks Metro Park (Delaware Co.), Olentangy R. sandbars, Watts 496; 12 Sep 1991—Hoover Dam Park, N of entrance off Cabbage Rd., reservoir inlet, Blendon Twp., Lowden 4835; 14 Sep 1992—Pickerington Ponds, just S of Wright Rd., Madison Twp., Lowden 5037.

2. *Bidens tripartita* L.

Swamp Beggar-ticks

Leaves simple, serrate, with petioles; heads erect in fruit. Weed of moist waste areas. Sep-Nov. Incl. *B. comosa* (A.Gray) Wiegand; incl. *B. connata* Muhl.

REFERENCES: Sullivant 1840:30 (*Bidens petiolata* Nutt.); Selby & Craig 1890:11 (... collected at Lake Park, near Cols.); Selby 1891c: 148 (... collection from Cols. ... vicinity); Kellerman & Werner 1893:229 (edge of the brook, N of Neil Ave., Aug 1891); Fisher 1988:172 (illus. p. 173).

HERBARIUM RECORDS: 9 Sep 1890—on banks of Canal, near Cols., Selby; Oct 1890—Mr. Glover's, Cols., Selby; 27 Sep 1892—Cols., Werner (CLM, OS); 29 Sep 1892—Cols., Werner; 3 & 6 Nov 1984—Gahanna Woods State Nature Preserve, Tyrrell; Summer 1988—along the Olentangy R., OSU campus, Cols. and Galloway Quad. along Big Darby Creek between I-70 & Little Darby Creek, Delong; 12 Sep 1991—Hoover Dam Park, N of entrance off Cabbage Rd., reservoir inlet, Blendon Twp., Lowden 4834.

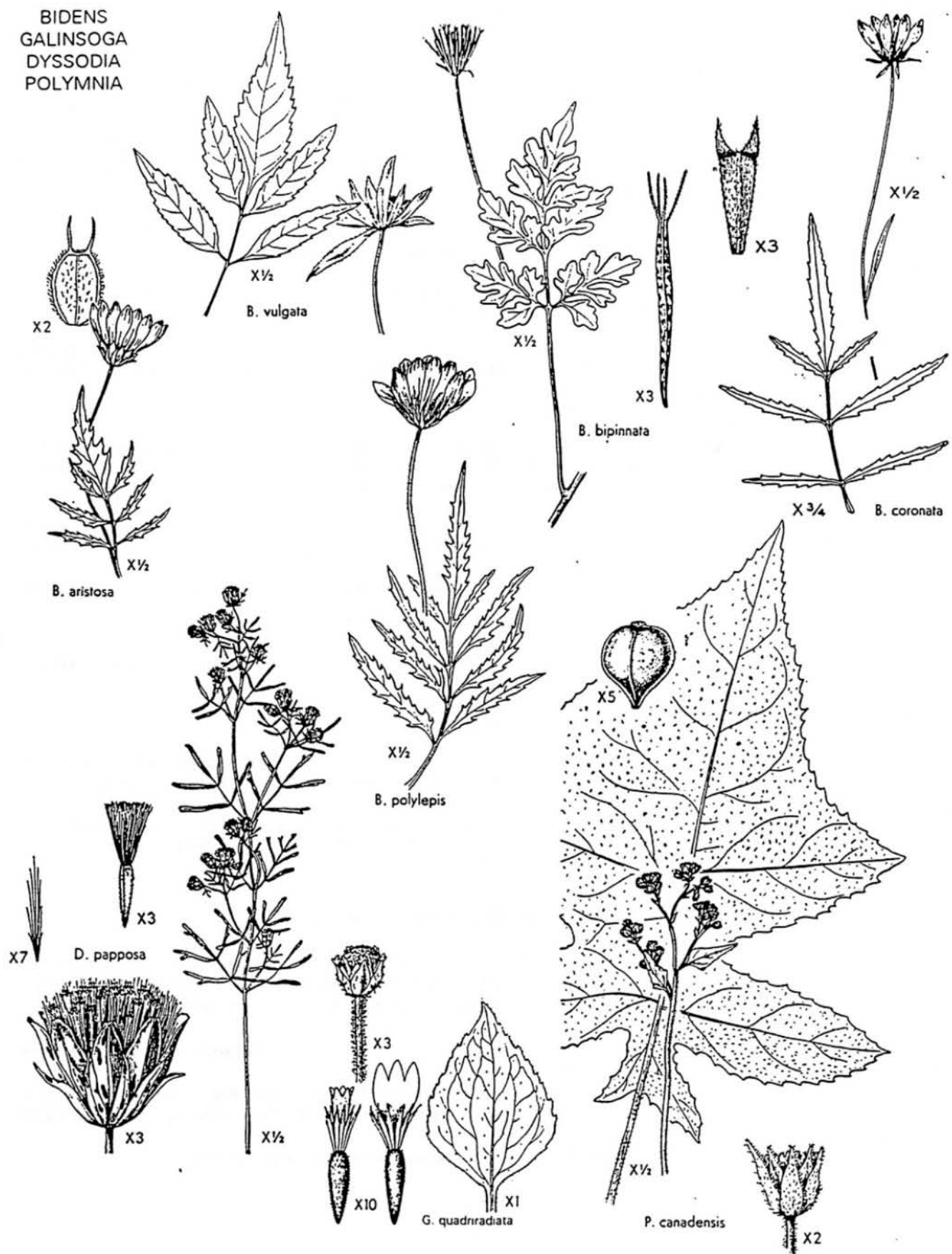
3. †*Bidens discoidea* (Torr. & A.Gray) Britton

Few-bracted Beggar-ticks

Lower and middle leaves 3-foliolate; outer phyllaries 3-5, glabrous; heads small, up to 6 mm wide. Moist places. Oct-Nov.

REFERENCES: Sullivant 1840:30, 57 (*Bidens* aff. *frondosa* ?; resembles *B. frondosa* ... grows plentifully in the Cat-tail swamp, 3 mi. W of Cols.); Torrey & Gray 1842:339 (*Coreopsis discoidea* Torr. & A.Gray; Type locality, wet places and swamps, Cols., Sullivant); Jones 1943:88.

BIDENS  
GALINSOGA  
DYSSODIA  
POLYMNIA



HERBARIUM RECORDS: 31 Oct & 3 Nov 1984—Gahanna Woods State Nature Preserve, Tyrrell.  
NOTE: Not mapped for Franklin Co. by Fisher 1988:168 (illus. p. 167).

4. *Bidens frondosa* L.

Stick-tight, Devil's Beggar-ticks

Leaves pinnately compound, leaflets 3-5; outer phyllaries 5-10. Moist disturbed places. Sep.

REFERENCES: Riddell 1834:155; Sullivant 1840:30; Craig 1890:86 (common in meadow near river, 7 Sep 1882); Selby & Craig 1890:11; Fisher 1988:168 (illus. p. 169).

HERBARIUM RECORDS: 7 Sep 1890—Lake Park, Selby; 23 Sep 1935—Harper & E. Thomas; Summer 1988—along the Olentangy R., OSU campus, Cols. & Galloway Quad. along Big Darby Creek between I-70 and Little Darby Creek, Delong; 18 Sep 1989—Highbanks Metro Park (Delaware Co.), Olentangy R. sandbars, Watts 496 (OWU); 7 Sep 1991—Antrim Lake, drainage ditch, Sharoff Twp., Lowden 4802; 12 Sep 1991—Hoover Dam Park, N of entrance off Cabbage Rd., reservoir inlet, Blendon Twp., Lowden 4831.

5. *Bidens vulgata* Greene

Tall Beggar-ticks

Leaves 3-5 foliolate; phyllaries 10-15, very leafy. Weed of moist waste places. Sep.

REFERENCE: Fisher 1988:171 (illus. p. 169).

HERBARIUM RECORDS: 3 Sep 1892—Cols., Bogue; Summer 1988—Galloway Quad., along Big Darby Creek between I-70 & Little Darby Creek, Delong; 10 Sep 1991—Big Darby Creek off Rt. 40, Prairie Twp., Lowden 4812.

6. *Bidens bipinnata* L.

Spanish Needles

Leaves 2-3 times pinnately divided; heads few-flowered; achenes black at maturity, with 4 retrorsely barbed awns.

Waste places along roadsides. Jun-Oct.

REFERENCES: Riddell 1834:155; Craig 1890:54, 86 (#217; common in the woods in the meadow W of the barn, 15 Aug 1882, 21 Aug 1887; University Farm Sep 1887); Selby & Craig 1890:11; Fisher 1988:168 (illus. p. 167).

HERBARIUM RECORDS: 27 Sep 1882—Cols., Devo; Aug 1892—near Cols., E. M. Wilcox; 8 Oct 1902—Cols., J. G. Sanders; 19 Sep 1950—OSU grounds, E. Thomas; 27 Jun 1973—near OSU campus, Cols., D. Keil 9628; 22 Jul 1987—Freddie's Dairy bar, corner of Neil Ave. and W. 11th Ave., Cols., T. Lammers 6179; 30 Sep 1991—Scioto Blvd., W bank of Scioto R., N of Greenlawn Ave. bridge, Franklin Twp., Lowden 4868.

7. *Bidens coronata* (L.) Britton

Northern Tickseed-sunflower

Leaves pinnately divided, 3-5 parted; heads radiate, showy; phyllaries 6-8; pappus of 2 sharp upwardly barbed awns.

Wet places. Sep.

REFERENCES: Riddell 1834:155 (*Coreopsis trichosperma*, wet prairies); Sullivant 1840:31 (*Coreopsis trichosperma* Michx.); Selby & Craig 1890:11 (*Coreopsis trichosperma* Michx.); Fisher 1988:172 (illus. p. 173).

HERBARIUM RECORDS: 1840—Cols., Sullivant; 7 & 9 Sep 1890—Lake Park, Selby; 1893—Cols., E. M. Wilcox.

8. *Bidens aristosa* (Michx.) Britton

Midwestern Tickseed-sunflower

Leaves pinnately divided; heads radiate; outer phyllaries 8-12. Wet places. Aug.

REFERENCES: Selby & Craig 1890:11 (*Coreopsis aristosa* Michx.); Fisher 1988:171 (illus. p. 170).

HERBARIUM RECORD: 6 Aug 1897—Hamilton Twp., W. Kellerman.

9. *Bidens polylopes* S.F.Blake

Bur-marigold, Ozark Tickseed-sunflower

Plants robust and showy; leaves pinnately divided; heads radiate; outer phyllaries 12 or more. Wet open places.

Sep.

HERBARIUM RECORDS: 9 Sep 1977—Hoover Dam, Daskotch; 5 Sep 1991—N side of Morse Rd. just W of Stelzer Rd. jct., Blendon Twp., Lowden 4791; 12 Sep 1991—Hoover Dam Park, N of entrance off Cabbage Rd., reservoir inlet, Blendon Twp., Lowden 4836.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:171 (illus. p. 170).

## 11. GALINSOGA Ruiz & Pav. Quickweed

Annuals; leaves opposite, margins of blades dentate or entire; heads small, radiate; phyllaries in 2 series, ovate; receptacle conic, chaffy; ray-flowers 4 or 5, little longer than disk, corollas white or pink, carpellate, seeds forming; disk-flowers bisporangiate, corollas yellow; pappus of fimbriate or lacinate scales, sometimes wanting in ray-flowers.

1. \**Galinsoga quadriradiata* Ruiz & Pav.

Galinsoga, Common Quickweed

Naturalized (native of Central & South America)

Pappus of ray-flowers well developed, as long as tube; pappus of disk-flowers short awned. Weed of gardens & waste places. Jun-Oct. Syn.: *G. bicolorata* H.St.John & D.White, *G. caracasana* (DC.) Sch.-Bip., *G. ciliata* (Raf.) S.F.Blake

REFERENCES: Selby & Craig 1890:11 (*Galinsoga parviflora* Cav., name misapplied); Fisher 1988:174 (illus. p. 175).

HERBARIUM RECORDS: 24 June 1892—Cols., *Selby*; 12 June 1899—Worthington, *Burr*; 3 Oct 1968—B&Z Bldg., OSU campus, *Stuessy 1426*; 14 Jun 1989—behind B&Z Bldg., OSU campus, *Lowden 4191*; 24 Aug 1989—Walnut Grove Cemetery, Worthington, *Lowden 4295*.

## 12. DYSSODIA Cav.

Strong-scented; gland-dotted; leaves opposite, pinnatifid or bipinnatifid, segments linear; heads small; phyllaries gland-dotted, in 2 series, inner united; receptacle pitted; corollas yellow; ray-flowers few, carpellate, seeds forming, corollas scarcely exceeding phyllaries; pappus of scales parted into bristles.

### 1. \**Dyssodia papposa* (Vent.) Hitchc.

Fetid Marigold

Naturalized (native to W U.S. & Mexico)

Weedy tendencies along roadsides. Aug-Oct. Syn.: *D. chrysanthemoides* Lag. (misapplied name)

REFERENCES: Selby 1890:85; Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols., also found at Westerville); Selby 1891a:111; Selby 1891b:75-76 (weedy tendencies; Sells Brothers' Circus & introduced independently at other points in the county); Selby 1891c:148 (Selby collection, Sellsville); Selby 1892a:163 (native in Illinois and the states immediately W of it; weeds from Franklin Co.); Fisher 1988:179 (illus. p. 180).

HERBARIUM RECORDS: 4 Sep 1890—Westerville, near Cols., *Selby*; 5 Sep 1890—Central College, *E. V. Wilcox*; Oct 1890—Franklin Co., coll.? (KE); 21 Aug 1891—Sellsville, near Cols., *Selby*; 4 Oct 1891—Central College, *Bogue*; 19 Sep 1898—Cols., *W. Kellerman*; 1 Oct 1911—Westerville, county line roadside, *Hanawalt*; 2 Oct 1984—Rt. I-71, ¼ mi. N of jct. of Rt. I-270, NE Cols. Quad., *Cusick 24044*; 21 Oct 1986—Rt. I-71, E of U.S. Rt. 62 exit, NE of Orient, Pleasant Twp., Harrisburg Quad., *Cusick 26137*.

## 13. POLYMNIA L. Leafcup

Tall, viscid-pubescent; blades large, thin, lobed; heads radiate or discoid; phyllaries 5; receptacle flat, chaffy, outer bracts large, partly enclosing the achenes; ray flowers carpellate, seeds forming, corolla white or yellow; disk flowers perfect, seeds not forming; pappus none.

### 1. *Polymnia canadensis* L.

Pale-flowered Leafcup

Rays 5, white, very short to about 1 cm long, or none; petioles not winged nearly to base; achene 3-angled, 3-ribbed. Moist woods & floodplains. Jul-Nov.

REFERENCES: Riddell 1834:155 (slaty ravines); Sullivant 1840:32; Selby & Craig 1890:11; Fisher 1988:121 (illus. p. 122).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Jul 1889—Wyandot Grove, *Selby*; Nov 1890—Big Darby R., *Selby*; 11 Nov 1890—N of Jones [?Ives] Mill on Scioto R., Cols., *Craig*; 9 Jul 1892—Cols., *Bogue*; 8 Aug 1899—Scioto R., *Selby*; 30 Jul 1960—Hayden Run Rd., W side of Scioto R., *J. Wells*; 17 Jul 1977—confluence of Hayden Run & Scioto R., just N of Cols., *W. Carr 509*; 21 Jul 1986—Highbanks Metro Park, floodplain, *Watts 332* (OS, OWU); 19 Jul 1989—Antrim Park, along W bank of Olentangy R., E of Rt. 315, N of Bethel Rd., *Lowden 4212*.

## 14. SILPHIUM L. Rosin-weed

Tall, coarse; juice resinous; heads radiate, large; phyllaries in a few series; receptacle flat, chaffy; ray flowers in 2-3 series, carpellate, seeds forming, corollas yellow; seeds not forming in disk flowers; achenes broad, flattened dorsally, winged at the edges, notched at top; pappus none or a tooth at top of each wing.

a Leaves connate-perfoliate, opposite; stem square. 1. *S. perfoliatum*

a' Leaves not connate-perfoliate.

b Stem leafy.

c Blades toothed or entire, lanceolate; leaves whorled, or sometimes opposite or alternate. 2. *S. trifoliatum*

c' Blades except uppermost pinnately or bipinnately parted; leaves alternate. 3. *S. laciniatum*

b' Lower leaves very large, margins toothed or sometimes pinnatifid; stem-leaves much smaller, bractlike; achene about 1 cm long. 4. *S. terebinthinaceum*

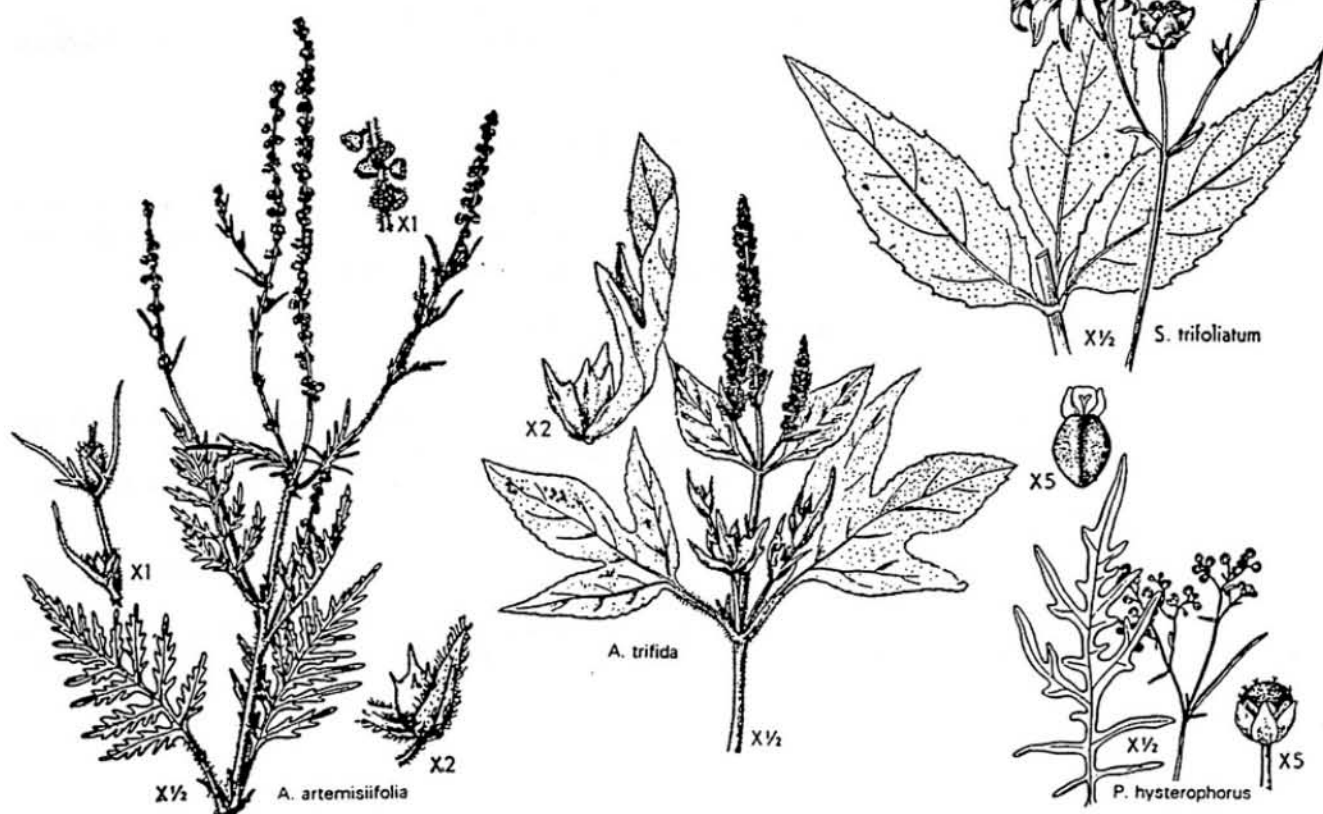
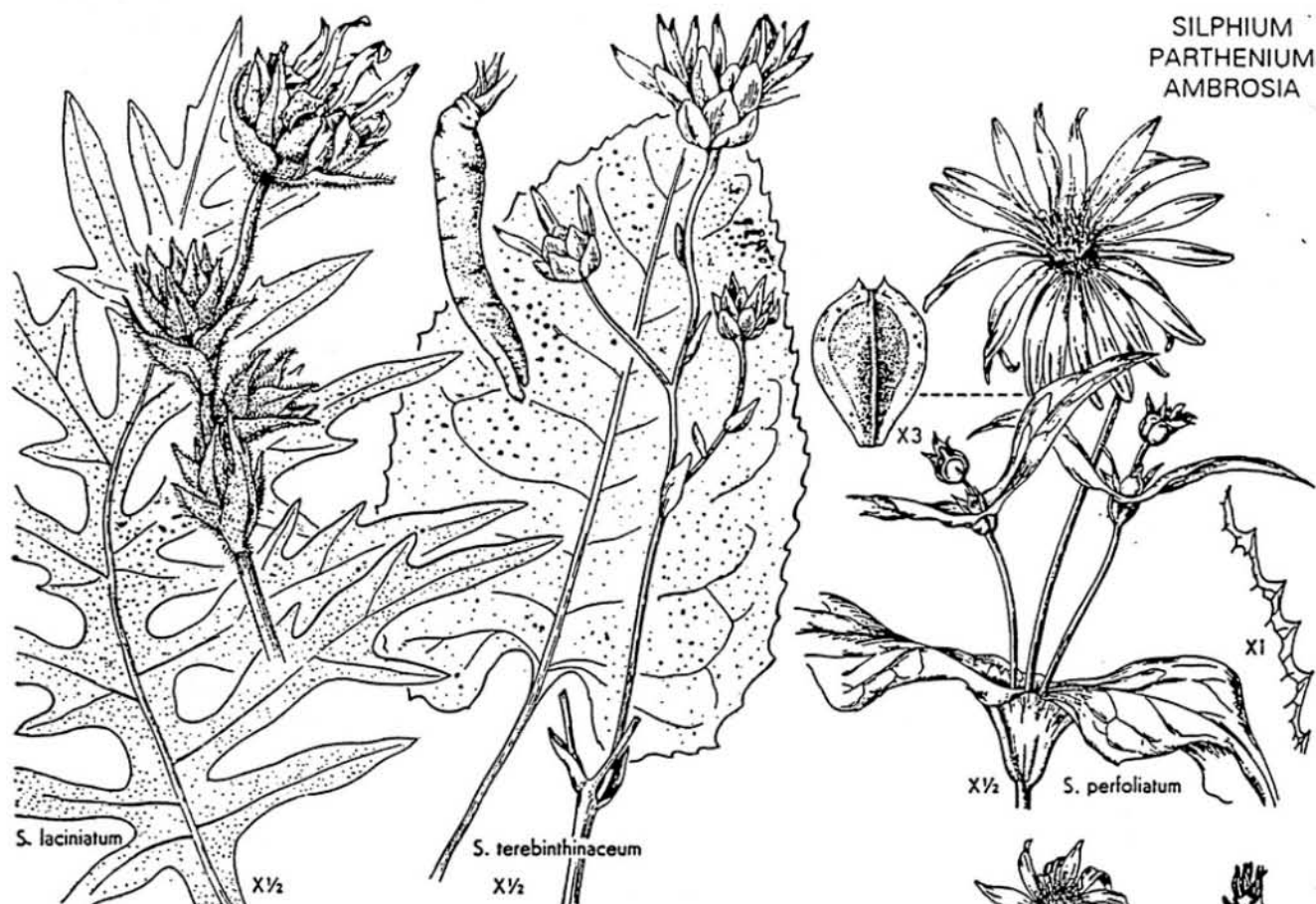
### 1. *Silphium perfoliatum* L.

Indian-cup, Cup-plant

Stems square; leaves opposite, connate-perfoliate. Woodlands & river margins. Jul-Sep.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:33; Craig 1890:53, 84 (#197; University Farm Sep 1887; occurs sparingly along the river and on the island; there is a small clump on the campus near the stone, 31 Jul 1882, 30 Jul 1887); Selby & Craig 1890:12; Fisher 1988:123 (illus. p. 124).





HERBARIUM RECORDS: Aug 1888—Olentangy R. bottoms, Cols., *Craig*; 20 Aug 1890—Cols., *Werner* (CLM); 27 Jul 1891—near Cols., *E. V. Wilcox*; 16 Aug 1898—Botanical Gardens, OSU, Cols., *J. H. Schaffner*; 16 Jul 1972—0.3 mi. N of Henderson Rd. & Rt. 315, Cols., *Mossman 1090*; Summer 1988—along Big Darby Creek between I-70 & Little Darby Creek, Galloway Quad., *Delong*; 19 Jul 1989—Antrim Park, E of Rt. 315, W of Olentangy River Rd., Cols., *Lowden 4207*; 11 Aug 1989—along Olentangy River Rd., ½ mi. S of Bethel Rd., between Henderson Rd. & Bethel Rd., Cols., *Lowden 4258*; 11 Aug 1989—Just S of Fishinger Rd. Bridge, Tarbue-Murphy Landing, along E bank of Scioto R., Upper Arlington, Perry Twp., *Lowden 4265*.

2. †*Silphium trifoliatum* L.

Whorled Rosin-weed

Stem leafy; leaves opposite; alternate or often whorled; blades mostly lanceolate, toothed to nearly entire. Woodlands & open places. Jul-Aug.

REFERENCES: Riddell 1834:155 (*Silphium ternatum* & *S. atropurpureum*, dry prairies); Sullivant 1840:33 (*Silphium ternatum* Retz.); Craig 1890:84 (grows along the river and near the lake); Selby & Craig 1890:12; King 1981:121 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 7-Georgesville RR Site, 8-Graessle Rd. Bluff Site); Fisher 1988:125 (illus. p. 126).

HERBARIUM RECORDS: 15 Jul 1892—Georgesville, *Bogue*; 30 Aug 1931—"Red Hills," *Chapman*.

3. †*Silphium laciniatum* L. var. *laciniatum*

Compass-plant

Leaves alternate; blades pinnatifid to bipinnatifid. Open places along railroads. Oct.

REFERENCES: Riddell 1834:155 (& *Silphium gummiferum*, dry prairies); Sullivant 1840:33 (*Silphium gummiferum* Ell.); Selby & Craig 1890:12; Roberts & Cooperrider 1982:70; McCance 1984:A-362.

HERBARIUM RECORD: 6 Oct 1935—along RR, Cols., *J. H. Schaffner*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:125 (illus. p. 124).

The following hybrid is recognized:

†*Silphium laciniatum* × *Silphium terebinthinaceum* Jacq.

Prairie-dock

Pinnatifid leaves. Syn.: *S. pinnatifidum* Elliott (misapplied name), *S. terebinthinaceum* Jacq. var. *pinnatifidum* (Elliott) A. Gray (misapplied name)

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:33, 59 (*Silphium pinnatifidum*, by some, considered a var. of *Silphium terebinthinaceum* ...; particularly a note, by Mr. Curtis, on a supposed larger var. of *Silphium terebinthinaceum*, which seems to be very near our plant); Selby & Craig 1890:12.

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 16 Aug 1898—Botanical Gardens, OSU, *J. H. Schaffner*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:125 (hybrids are often erroneously identified as *Silphium pinnatifidum* Elliott).

4. †*Silphium terebinthinaceum* Jacq. var. *terebinthaceum*

Prairie-dock

Stem tall, naked except for a few leafy bracts; basal leaves large, broadly ovate to ovate-oblong, cordate at base, sharply toothed. Open lowlands. Jul.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:33, 59 (there is evidently much uncertainty about the species of this genus); Selby & Craig 1890:12.

HERBARIUM RECORD: 25 Jul 1992—OSU Prairie Plant Reserve, jct. Kinnear Rd. & North Star Ave., Clinton Twp., *Lowden 5004*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:125 (illus. p. 126).

## 15. PARTHENIUM L.

Leaves alternate; heads small, radiate; phyllaries in 2 to a few series; receptacle conic or convex, chaffy; ray-flowers about 5, carpellate, seeds forming, corollas short, broad, white, inconspicuous; achenes not forming in disk-flowers; pappus none or of 2-3 scales or awns; corolla persistent on achene.

1. \**Parthenium hysterophorus* L.

Santa Maria, Greaser Weed

Adventive (introduced from tropical America N to SE U.S.)

Leaf-blades pinnatifid or bipinnatifid. Weedy tendency. Aug-Oct.

REFERENCES: Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891a:111; Selby 1891b:75-76 (weedy tendencies; Sells Brothers' Circus); Selby 1891c:149 (western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio near Cols.); J. Cols. Hort. Soc. (1892) 7:42; Selby 1892b:163 (Greaser Weed, name given by the writer; previously reported from Florida, Louisiana and Texas, but probably from tropical America originally, weeds from Franklin Co.); Fisher 1988:128 (illus. p. 129).

HERBARIUM RECORDS: Aug 1890—Sellsville, *E. V. Wilcox*; 23 Aug 1890—Sellsville, *Selby*; 28 Oct 1890—Sellsville near Cols., *E. V. Wilcox*; 31 Oct 1890—Cols., *E. V. Wilcox*; Aug 1891—Sellsville, *Selby*.

## 16. AMBROSIA L. Ragweed

Monoecious or rarely dioecious; receptacle flat, with slender chaff; flowers monosporangiate, the two kinds in different heads; staminate heads small, many-flowered, discoid, in spikes or racemes, phyllaries united in a 5-12-lobed involucre, corolla 5-toothed; carpellate flowers below the staminate, in axils of leaves or bracts, without corolla, solitary in a closed globose-ovoid or top-shaped spiny or tubercled involucre; anthers almost separate; pappus none.

- a Leaves opposite below or alternate above, blades thin, pinnatifid or more often twice pinnatifid; plants pubescent or in part subglabrous. 1. *A. artemisiifolia*  
a' Leaves opposite, blades palmately 3-5-lobed or some merely toothed; tall, very coarse plants. 2. *A. trifida*

1. *Ambrosia artemisiifolia* L. Roman Ragweed, Common Ragweed, Roman Wormwood, Hogweed

Leaves pinnatifid or bipinnatifid, smooth; fruiting involucre with beak about 1 mm long or more and 5-7 sharp spines about 0.5 mm long. Fields & waste places. Aug-Sep. Syn.: *A. elatior* L.

REFERENCES: Riddell 1834:156 (roadsides); Sullivant 1840:30; Craig 1890:53, 85 (#200; very common in fields and waste places, 9 Aug 1882, 12 Aug 1887, 2 Aug 1888; University Farm Sep 1887); Selby & Craig 1890:11; Fisher 1988:116 (illus. p. 117).  
HERBARIUM RECORDS: Aug 1888—Cols., Craig; 11 Aug 1890—near Cols. & OSU, Hine; 29 Aug 1892—Cols., Bogue; 19 Aug 1899—Cols., Selby 2425; 17 Aug 1986—Highbanks Metro Park (Delaware Co.), Morawetz 27 (OS, OWU); 24 Aug 1989—RR tracks at Highland Dr., W of Olentangy River Rd., Lowden 4294.

2. *Ambrosia trifida* L. Greater Ragweed, Horseweed, Hogweed, Giant Ragweed

Leaves 3-5 lobed, some entire; plants tall and coarse. Weed of floodplain & waste places. Jul-Sep. Syn.: *A. trifida* L. var. *integrifolia* Torr. & A.Gray

REFERENCES: Riddell 1834:156 (bottomland); Sullivant 1840:30; Craig 1890:53, 85 (#199; very abundant around the island where it grows luxuriantly and attains a large size, 24 Jul 1887, 2 Aug 1888); Selby & Craig 1890:11; Fisher 1988:116 (illus. p. 117).  
HERBARIUM RECORDS: 8 Aug 1882—University Farm, Cols., W. Green; Aug 1888—Cols., Craig; 12 & 26 Aug 1890—Olentangy R., Cols., Hine; 1 Aug 1892—near Cols., E. M. Wilcox; 12 Aug 1892—Cols., Werner; 17 Aug 1986—Highbanks Metro Park (Delaware Co.), Morawetz 26; 24 Aug 1989—RR tracks at Highland Dr., W of Olentangy River Rd., Lowden 4292.

17. XANTHIUM L. Cocklebur

Leaves alternate, blades lobed, toothed, or repand; monoecious; flowers monosporangiate, the two kinds in different heads; staminate heads discoid, small, many-flowered, in short spikes or racemes at end of branches, involucre of separate phyllaries, receptacle chaffy, corolla tubular, anthers separate; involucre of carpellate flowers closed, covered with hooked prickles, 2-loculed, 1 flower in each, corolla none; fruiting involucre (bur) with 1 achene in each locule; pappus none.

1. *Xanthium strumarium* L. Common Cocklebur, Clot-weed, Clot-burr

Blades broadly ovate, base cordate or truncate, without axillary spines.

Two varieties are recognized:

var. *canadense* (Mill.) Torr. & A.Gray

Burs hairy on and among the spines. Weed of fields, waste places & floodplains. Aug-Oct. Syn.: *X. canadense* Mill., *X. canadense* Mill. var. *echinatum* A.Gray

REFERENCES: Riddell 1834:156 (cultivated fields); Sullivant 1840:33; Craig 1890:53, 85 (#201; common along the brook, 7 Sep 1882, 27 Aug 1887; University Farm Sep 1887); Selby & Craig 1890:12 (#475-477); Fisher 1988:119 (illus. of var. *canadense*, p. 120).

HERBARIUM RECORDS: [ca. 1830s]—Worthington, [J. R.] Paddock (URB); 20 Oct 1890—Sellsville, Selby; 22 Aug 1901—Georgesville, Coberly; 2 Sep 1901—Neil's Run, Mead; 23 Sep 1974—Wright Rd. Pond, W of Bowen Rd., Madison Twp., May 16; 11 Sep 1986—along RR at Ohio Woolgrowers Warehouse, NNE of jct. of Courtright Rd. & Groves Rd., SE Cols. Quad., Cusick 25864; 8 Sep 1991—Rt. 315 going S, Goodale St. Exit, Franklin Twp., Cols., Lowden 4803.

var. *glabratum* (DC.) Cronquist

Burs atomiferous-glandular to glabrous. Oct.

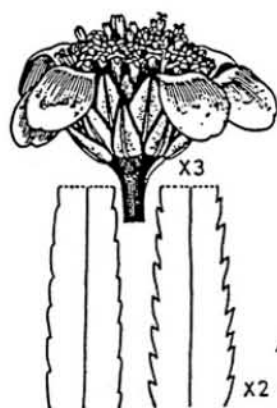
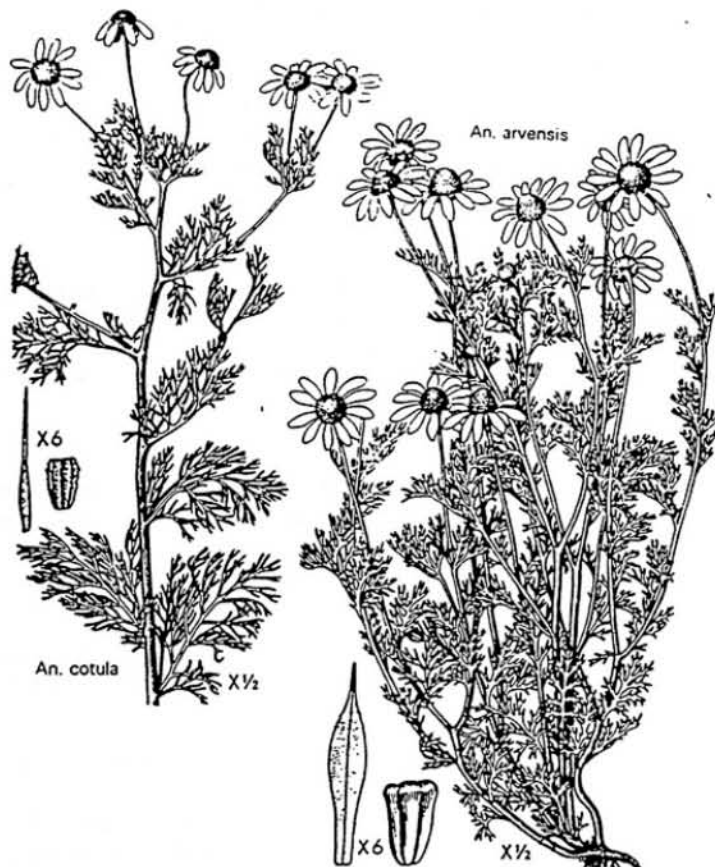
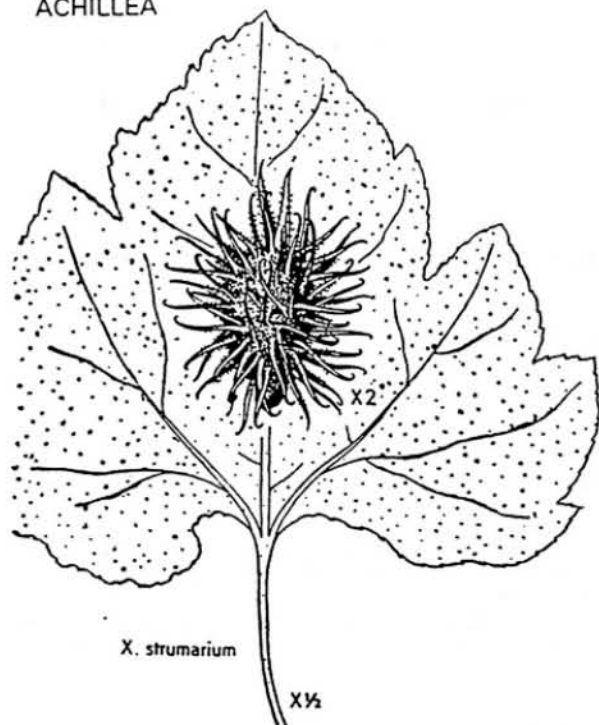
REFERENCE: Fisher 1988:119.

HERBARIUM RECORD: 3 Oct 1965—W bank of the Olentangy R., ½ mi. S of Henderson Rd. on Rt. 315, Anderson 2008 (KE).

ANTHEMIDEAE, Chamomile Tribe

18. ANTHEMIS L. Chamomile

XANTHIUM  
ANTHEMIS  
ACHILLEA



Leaves alternate, blades pinnatifid or pinnately dissected; heads radiate or discoid; phyllaries nearly equal or in several series; receptacle conic or convex, chaffy at least in the middle; disk flowers bisporangiate, seeds forming, corollas yellow; pappus none or a small crown.

a Odorless; blades once or twice pinnatifid; pappus a minute border; achenes smooth, about 10-nerved; seeds forming in ray-flowers. 1. *A. arvensis*

a' Strong-scented; leaf-blades usually tripinnatifid; pappus none; achenes rough-tuberculate; receptacle chaffy only at center; no seeds forming in ray-flowers. 2. *A. cotula*

1. \**Anthemis arvensis* L.

Corn Cotula

Naturalized (native of Europe)

Odorless; blades once or twice pinnatifid; pappus a minute border; ligules white; achenes smooth, about 10-nerved; seeds forming in ray-flowers. Jun.

REFERENCE: Fisher 1988:181 (illus. p. 182).

HERBARIUM RECORD: 21 Jun 1977—W bank of Olentangy R., just N of Lane Ave. bridge, *W. Carr* 371.

2. \**Anthemis cotula* L.

Dogfennel, Mayweed, Stinking Cotula

Naturalized (native of Europe)

Strong-scented; leaf-blades usually tripinnatifid; pappus none; ligules white; achenes rough-tuberculate; receptacle chaffy only at center; no seeds forming in ray-flowers. Weed in fields & waste places. Jun-Nov. Syn.: *A. cotula* DC., *Maruta cotula* DC.

REFERENCES: Riddell 1834:156 (naturalized); Sullivant 1840:30 (naturalized plants); Craig 1890:54, 56, 86 (#219; abundant in the yard of the larger dormitory, and on W. Woodruff Ave., occasionally elsewhere, as it is spreading slowly, 22 Jun 1882, 11 Jun 1887; University Farm Sep & Oct 1887, 11 Nov 1888); Selby & Craig 1890:11 (introduced); Fisher 1988:182 (illus. p. 183).

HERBARIUM RECORDS: 8 Aug 1882—University Farm, Cols., *Devol*; Jun 1888—Cols., *Craig*; 26 Jul 1890—Cols., *Hine*; 11 Aug 1911—Westerville, barn lots & orchard, *Hanawalt*; 15 Jul 1988—Highbanks Metro Park, sandbars along Olentangy R., *Watts* 448 (OS, OWU).

19. ACHILLEA L. Yarrow

Leaves alternate, blades pinnately dissected; heads small, radiate; phyllaries in several series; receptacle chaffy; ray-flowers few, carpellate, seeds forming, corollas white or pink; disk 2-4 mm wide, the flowers bisporangiate, seeds forming; pappus none.

a Leaves finely serrate to subentire, not dissected. 1. *A. ptarmica*

a' Leaves pinnately dissected. 2. *A. millefolium*

1. \**Achillea ptarmica* L.

Sneezeweed

Cultivated (native to N Eurasia)

Leaves lance-linear, simple, finely serrate; heads radiate, corymb loose, rays as long as involucre. Jun.

HERBARIUM RECORD: 1 Jun 1934—Botany Garden OSU, *Camp*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:181.

2. \**Achillea millefolium* L.

Yarrow, Milfoil

Naturalized (native of Europe & Asia)

Heads radiate, dense flat-topped corymbs, leaves pinnately dissected, corolla white to rose-purple, rays short, about 2 mm long. Common weed along roadsides, disturbed places & fields. May-Nov.

REFERENCES: Riddell 1834:156 (naturalized); Sullivant 1840:29 (naturalized plants); Craig 1890:54, 56, 86 (#220; common in fields and on the hillside over the lake, 22 Jun 1882, 30 May 1887, 6 Jun 1888, 1 Jun 1889; University Farm Sep & Oct 1887, 4 Nov 1888); Selby & Craig 1890:11; Fisher 1988:181 (illus. p. 180).

HERBARIUM RECORDS: 11 Jul 1882—Olentangy R., OSU, Cols., *W. Green*; Aug 1888—Cols., *Craig*; Oct 1890—W of Cols. on road to Marble Cliff, *Craig*; 3 Sep 1892—Cols., *Bjoguel*; 27 May 1896—Clintonville, *M. Wright*; 28 May 1896—Cols., *W. Kellerman*; 1 Jun 1896—Cols., *McCall*; 10 Jun 1899—Worthington, *Helfrich*; Fall 1899—Cols., *J. H. Schaffner*; 8 Jun 1911—Westerville, old pastures along roads, *Hanawalt*; 26 May 1922—Westerville, roadside, *Foley*; 29 May 1922—Westerville, *Gibson*; Summer 1938—OSU Botanical Garden, *C. Jones*; 1 Jul 1982—Blendon Woods, *Owens*; 16 May 1986—2402 East Ave., Cols., *R. Burnes* 21; 8 Jun 1986—Highbanks Metro Park (Delaware Co.), *Witsberger* 914 (OS, OWU); 21 Sep 1986—Highbanks Metro Park (Franklin Co.), *Higgins*; 11 Jun 1987—E bank of Olentangy R., between Lane Ave. & Dodridge St. bridges, Tuttle Park, Cols., *T. Lammers* 6118; 4 Jun 1989—Olentangy River Rd., S of Henderson Rd. between Olentangy River Rd. & Rt. 315, *Lowden* 4095.



## 20. CHRYSANTHEMUM L. Chrysanthemum

Leaf-blades serrate, dentate, incised, or dissected, alternate; heads radiate or discoid; phyllaries in few to several series; receptacle flat or convex, naked; ray-flowers carpellate, seeds forming, corollas white in species listed below; disk-corollas yellow; pappus none or a cup of short scales.

- a Heads 4-6 cm wide, solitary. 1. *C. leucanthemum*
- a' Heads smaller, in clusters.
- b Leaf-blades bipinnatifid; ray-flowers present. 2. *C. parthenium*
- b' Leaf-blades crenate or serrate or with a pair of lateral lobes at base; ray-flowers absent or very short; fragrant when crushed. 3. *C. balsamita*

### 1. \**Chrysanthemum leucanthemum* L.

Oxeye Daisy, White Daisy

Naturalized (native of Eurasia)

Heads wide, showy and solitary. Common weed of fields & along roadsides. May-Jul. Syn.: *Leucanthemum vulgare* Lam.

REFERENCES: Riddell 1834:155 (naturalized); Craig 1890:86 (very rare, I found a single specimen near the swamp W of the lake. Mr. Devol found it on the campus in 1882, 14 Jun 1882, 10 Jul 1887); Selby & Craig 1890:11 (introduced); Fisher 1988:186 (illus. p. 187).

HERBARIUM RECORDS: 19 May 1974—OSU, Botany Garden, Cols., *D. Johnson*; 19 Jun 1980—ODNR complex, Fountain Sq., Morse Rd., 1.8 mi. E of I-71, NE Cols. Quad., *Shelly 48*; 30 May 1982—Blendon Woods, *Owens*; 31 May 1986—Highbanks Metro Park (Delaware Co.), open fields, *Morawetz 15*; 1 Jun 1986—lot N of St. Michael's Church at Selby & High St., Cols., *Benkowski 54*; 28 May 1988—field, ¼ mi. N of Bethel Rd. & Rt. 315, Cols., *Kelley 40*; 4 Jun 1989—between Olentangy River Rd. & Rt. 315, just S of Henderson Rd., Clinton Twp., Cols., *Lowden 4099*; 6 Jun 1989—Turkey Run between Olentangy River Rd. & Pegg Ave. just S of Highland Dr., Clinton Twp., Cols., *Lowden 4125*; 14 Jun 1989—just E of Olentangy River Rd. & Henderson Rd. intersection getting on Rt. 315 going N, Clinton Twp., Cols., *Lowden 4200*; 24 May 1990—0.5 mi. S of Rt. 161 on Dublin Rd., Riverview, overlooking the Scioto R., Dublin, Washington Twp., *Lowden 4345*.

### 2. \**Chrysanthemum parthenium* (L.) Bernh.

Common Feverfew

Cultivated Escape (native of Europe)

Heads in clusters, small; leaves pinnatifid to bipinnatifid; rays present. Disturbed waste sites. Jun.

REFERENCE: Selby & Craig 1890:11 (introduced)

HERBARIUM RECORDS: 29 Jun 1963—just S of E. 18th St., 1 blk. E of N. High St., Cols., *Cusick*; 28 Jun 1987—Westerville, Blendon Twp., NE Cols. Quad., *McCormac 126*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:186 (illus. p. 187).

### 3. \**Chrysanthemum balsamita* L.

Costmary, Mint-geranium, Sweet Mary

Cultivated Escape (native of S Europe & the Orient)

Heads in clusters, small; leaves crenate; rays absent or very short. Sep-Oct. Syn.: *C. balsamita* L. var. *tanacetoides* Boiss.

REFERENCES: Selby & Craig 1890:11 (introduced); Fisher 1988:186 (illus. p. 187).

HERBARIUM RECORDS: 3 Oct 1891—Georgesville, *Selby*; 10 Oct 1891—Georgesville, near roadside, *Werner* (CLM); 24 Sep 1892—Georgesville, *Werner*.

## 21. TANACETUM L. Tansy

Strong-scented; leaves alternate, blades twice pinnatifid, rachis winged and toothed or pinnatifid; heads many, discoid; phyllaries in several series; receptacle flat or convex, naked; corollas yellow; flowers bisporangiate, seeds forming; pappus a short crown.

### 1. \**Tanacetum vulgare* L.

Common Tansy, Golden-buttons

Naturalized (introduced from Eurasia)

Fields & waste places. Jun-Nov.

REFERENCES: Riddell 1834:156 (naturalized); Craig 1890:86 (in Dr. Townshend's front yard, and in the grass-plot field N of Prof. Thomas' house, 7 Jun 1884, 10 Jul 1887); Selby & Craig 1890:12 (introduced); Fisher 1988:188 (illus. p. 189).

HERBARIUM RECORDS: Aug 1888—Cols., *Craig*; 3 Oct 1891—Georgesville, *Selby*; 1 Oct 1892—47 E. 9<sup>th</sup> Ave., near Cols., *E. M. Wilcox*; Jul & 19 Nov 1896—Cols., *W. Kellerman*; 19 Jul 1986—W of Graceland Shopping Ctr. on N. High St., Cols., *T. Lammers & Spooner 5961*.

## 22. MATRICARIA L. Chamomile

Leaves alternate, blades pinnately dissected, segments narrow; heads radiate or discoid; phyllaries in a few series; receptacle conic or hemispheric, naked; ray-flowers carpellate, when present, seeds usually forming, corollas white; disk-flowers bisporangiate, seeds forming, corollas yellow; pappus none or a short crown.

- a Heads radiate; disk-corollas 5-lobed; plants scentless or almost. 1. *M. maritima*
- a' Heads discoid; disk-corollas 4-lobed; phyllaries shorter than disk; receptacle conic; plants fragrant. 2. *M. matricarioides*

1. \**Matricaria maritima* L. Scentless False Chamomile  
Adventive (native of Europe)

Heads 3-4 cm wide; receptacle naked, hemispheric; achenes strongly 3-ribbed; plants scentless; leaf segments filiform. Disturbed roadsides. Jun.

HERBARIUM RECORD: 13 Jun 1990—E. Broad St. (Cols.-Newark Rd., Rt 16), ½ mi. W of Franklin/Licking Co. Line, Jefferson Twp., Lowden 4405.

NOTE: Not mapped for Franklin Co. by Fisher 1988:185. Recheck with other specimens, also with *Matricaria chamomilla* specimens.

2. \**Matricaria matricarioides* (Less.) Porter Pineapple-weed  
Naturalized (native to the Pacific U.S.)

Heads discoid; corolla 4-lobed. Weed along roadsides & in waste places. May-Jul.

REFERENCE: Fisher 1988:185 (illus. p. 184).

HERBARIUM RECORDS: 5 Jun 1937—Cols., J. H. Schaffner, 28 May 1983—Cooper Rd., Blendon Twp., Owens; 18 May 1986—OSU campus, West Campus woodlot, Cols., Taylor-Lehman 55; 10 Jul 1986—OSU campus, banks of Olentangy R., E. King 3; 25 May 1988—corner of Lane Ave. & N. High St., Cols., Kelly 32; 26 May 1988—OSU, N of Sisson Hall, just E of Coffey Rd., Chinery 54; 14 Jun 1989—OSU campus, W of B&Z Greenhouses, walkway to Biological Sciences Bldg., Cols., Lowden 4163; 10 Jun 1990—along Havens Rd., just W of Darling Rd., Jefferson Twp. (NC), Lowden 4393.

### 23. ARTEMISIA L. Wormwood, Mugwort

Usually aromatic, often tomentose; leaves alternate; heads small, discoid, paniced; phyllaries in a few series; receptacle small, naked or pubescent; outer flowers of head carpellate, inner bisporangiate, seeds forming in all or in only the outer; corollas green or yellow; pappus none.

- a Leaf-blades white-tomentose or silvery-pubescent on one or both surfaces.
  - b Blades silvery-pubescent; receptacle villous. 5. *A. absinthium*
  - b' Blades white-tomentose; receptacle glabrous.
    - c Blades 2-3-pinnatifid, ultimate segments blunt and not more than 1 mm wide; somewhat shrubby. 1. *A. pontica*
    - c' Blades entire to once pinnatifid (or sometimes twice), ultimate segments wider. 2. *A. vulgaris*
- a' Leaf-blades glabrous, or if pubescent, not white-tomentose, not silvery-pubescent.
  - d Heads sessile or nearly so; panicle narrow, of spikelike or glomerate erect branches; involucre 2-3 mm high. 3. *A. biennis*
  - d' Heads peduncled, drooping; panicle open; involucre 1-2 mm high; plant sweet-scented. 4. *A. annua*

1. \**Artemisia pontica* L. Roman Wormwood  
Cultivated to Escaped (native of Europe)

Leaf blades 2-3 pinnatifid, somewhat shrubby, grayish to white-tomentose above and beneath. Jun.

REFERENCE: Fisher 1988:190 (illus. p. 191).

HERBARIUM RECORD: 19 Jun 1920—near West Jefferson, J. H. Schaffner.

NOTE: Perhaps the cited specimen should be interpreted as Madison Co. instead of Franklin Co.

2. \**Artemisia vulgaris* L. Common Mugwort  
Naturalized (native of Eurasia)

Leaves green and glabrous above, white-tomentose beneath, pinnatifid (once to twice), segments acuminate, entire or incised; receptacle glabrous. Roadsides & fields. Sep-Nov.

HERBARIUM RECORDS: 1 Nov 1959—along Olentangy River Rd. across from Sisson Hall, OSU, Cusick; 13 Sep 1982—open E bank of the Olentangy R. between Dodridge St. & Lane Ave., Cols., T. Lammers 4933 (KE, OS).

NOTE: Not mapped for Franklin Co. by Fisher 1988:192 (illus. p. 191).



ARTEMISIA



3. \**Artemisia biennis* Willd.

Biennial Wormwood, Mugwort, Sage

Adventive (native to NW U.S.)

Heads sessile or nearly so; leaf blades 1-2 pinnatifid; panicle narrow of erect branches; leaf blades not white-tomentose, not silvery-pubescent. Weedy tendency, along railroads & in waste places. Sep.

REFERENCES: Selby 1891a:111a (introduced); Selby 1891b:75 (Cols., from west, plants dropped ... around RR intersections); Selby 1892b:163 (appeared about the stockyards, weeds from Franklin Co.); Fisher 1988:192 (illus. p. 191).

HERBARIUM RECORD: Sep 1891—near Cols., & Cols., *E. V. Wilcox*.

4. \**Artemisia annua* L.

Annual Wormwood, Mugwort, Sweet Wormwood

Naturalized (native to E Europe & Asia)

Leaf blades not white-tomentose, not silvery-pubescent; heads peduncled, drooping; panicle open; plant sweet-scented; leaf blades 1-2 pinnatifid. Weed of waste places. Aug-Nov.

REFERENCES: Selby & Craig 1890:11 (introduced); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers' Circus); Fisher 1988:193 (illus. p. 193).

HERBARIUM RECORDS: Aug 1890—near Cols., *E. M. Wilcox*; Oct 1890—Cols., *Werner* (CLM); 6 Nov 1890—Scioto R., *E. M. Wilcox*; 6 Nov 1890—Cols., Scioto R., *E. V. Wilcox*; Sep 1891—Cols., *E. V. Wilcox*; 6 Nov 1891—Scioto R. near Cols., *E. V. Wilcox*; 20 Sep 1913—*J. H. Schaffner*; 26 Sep 1936—Cols., *J. H. Schaffner*; 7 Oct 1960—Olentangy River Rd., across Olentangy R. from OSU Hospital, *Cusick*; 9 Sep 1991—Scioto Blvd. just N of Greenlawn Ave. Bridge, W bank of Scioto R., Franklin Twp., Cols., *Lowden 4806*.

5. \**Artemisia absinthium* L.

Common Wormwood, Mugwort, Absinthium

Adventive (native of Europe)

Leaves silvery, sericeous above and beneath; receptacles hairy.

REFERENCE: Riddell 1834:156 (naturalized).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:190 (illus. p. 190).

SENECIONEAE, Groundsel Tribe

24. SENECIO L. Groundsel, Ragwort, Squaw-weed

Leaves alternate; heads radiate or discoid; main phyllaries about equal; receptacle naked, flat, often honeycombed; ray-flowers when present carpellate, seeds forming; disk-flowers perfect, seeds forming; corollas yellow; pappus soft, white, capillary.

- a Cauline leaves not diminishing rapidly upward, extending usually to the inflorescence; blades all pinnatifid or only coarsely toothed.
  - b Blades lyrate-pinnatifid, terminal lobe largest and rounded; rays showy. 3. *S. glabellus*
  - b' Blades not lyrate-pinnatifid; rays absent, corollas all tubular. 4. *S. vulgaris*
- a' Cauline blades diminishing rapidly upward, those near the inflorescence small; basal or rosette blades undivided, cauline, except uppermost, often pinnatifid.
  - c Basal blades ovate to circular, cordate to broadly rounded at base, petiole long and not winged; achene glabrous. 2. *S. aureus*
  - c' Basal blades obovate to circular, usually tapering at base to winged petioles, crenate across rounded tip, teeth sometimes deeper toward base; leaf tufts at ends of stolons abundant. 1. *S. obovatus*

1. *Senecio obovatus* Muhl.

Groundsel, Ragwort, Squaw-weed, Roundleaf Squaw-weed

Cauline blades reduced upward on stem; basal blades tapering at base to winged petioles. Open woods. Apr-Jun.

Syn.: *S. aureus* var. *obovatus* Torr. & A. Gray

REFERENCES: Riddell 1834:155 (slaty ravines); Sullivant 1840:32; Selby & Craig 1890:12; Werner 1893:93 (#446, Georgesville, *Werner*); Fisher 1988:205 (illus. p. 204).

HERBARIUM RECORDS: 28 Apr 1890—Cols., *H. Richardson*; 10 May 1890—Scioto R., W of Cols., *W. Baker*; 10 May 1890—OSU Woods, near Cols., *W. Baker*; 7 May 1892—Georgesville, *Werner* (CLM); 12 May 1894—Georgesville, *W. Kellerman*; 19 May 1896—W Cols., *M. Wright*; 1 May 1899—Olentangy Park, Cols., *Helfrich*; 19 May 1901—W of Cols., *Stiver*; 2 Jun 1901—Neil's Run, Cols., *Mead*; 7 Jun 1901—Cols., *Ball*; May 1909—loc?, *Mayferth*; 21 May 1924—Westerville, moist soil & banks, *Martin*; [ca. 1925]—Westerville, dry woods & upland, *Camp*; 28 Apr 1970—Darby Creek, S of Darby Creek Park, *Boone*; 21 Apr 1986—Highbanks Metro Park (Delaware Co.), open field, *Watts 286* (OS, OWU); 10 May 1986—Highbanks Metro Park (Delaware Co.), open woods, *Witsberger 898* (OS, OWU); 2 May 1987—Battelle-Darby Creek Metro Park, along Big Darby Creek, 3 mi. S of U.S. Rt. 40, *T. Lammers 6094*; 8 May 1989—Overbrook Dr. Ravine, between N. High St. & Cooke Rd., Clinton Twp., *Lowden 4002*; 13 May 1989—woody slopes along W side of Big Darby Creek, ¼ mi. S of Rt. 665, common, Pleasant Twp., Harrisburg Quad., *McCormac 554*; 24 May 1990—Dublin, ½ mi. S of Rt. 161 on Dublin Rd., Riverview, overlooking Scioto R., Washington Twp., *Lowden 4350*; 11

SENECIO  
ERECHTITES



Apr 1991—Antrim Park, along Olentangy R., Sharon Twp., *Lowden 4578*; 3 May 1991—Rt. 33 along E bank of Scioto R., 1 mi. N of W. Case Rd., Perry Twp., *Lowden 4604*.

2. *Senecio aureus* L.

Golden Ragwort

Cauline blades reduced upward on stem; basal leaves ovate to elliptic, cordate at base. Open woods. Apr-May.

Syn.: *S. gracilis* Small

REFERENCES: Riddell 1834:155 (open woods); Riddell 1835:59 (*Senecio gracilis* Pursh, Worthington; wet prairies, damp grounds, marshes); Riddell 1836:13 (Cols., *Lapham*); Craig 1890:86 (quite a patch on the bank a little N of the island spring, 30 Apr 1882, 5 May 1883, 14 May 1884, 21 Apr 1886, 25 Apr 1887, 23 Apr 1888); Selby & Craig 1890:12; Fisher 1988:203 (illus. p. 204).

HERBARIUM RECORDS: 1840—Cols., *Sullivan*; 21 May 1892—Cols., *E. M. Wilcox*.

3. \*†*Senecio glabellus* Poir.

Butterweed, Yellowtop

Naturalized (native of Ohio)

Plants leafy to the summit, leaves not greatly reduced; blades lyrate-pinnatifid, terminal lobe large and round; heads radiate, rays bright yellow. Wet openings or fields bordering woody areas. May-Jun.

HERBARIUM RECORDS: 3 May 1990—OSU Campus, 12th Ave., N side of Postle Hall, *Stuckey, Schneider & DeVore*; 22 May 1990—Roberts Rd., W of Alton & Darby Creek Rd., 1 mi. E of Walker Rd., Brown Twp., *Lowden 4330*; 8 Jun 1990—Piedmont Rd. between N. High St. & Indianola Ave., NW Cols. Quad., *Cusick 28937*; 11 May 1991—Hoover Dam Park, W side of Cabbage Rd., Blendon Twp., *Lowden 4606*; 12 Jun 1992—Pickerington Pond, rare, a few plants in low muddy ground along shores of kettle lake, Madison Twp., Reynoldsburg Quad., *McCormac 4709*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:201 (illus. p. 202). Fisher considers "uncommon in Ohio," however I consider it not uncommon in Franklin Co.

4. \**Senecio vulgaris* L.

Common Groundsel

Naturalized (native of Europe)

Cauline leaves about the same size up the stem; blades without enlarged terminal lobes; phyllaries glabrous, both smaller and often the larger ones with black tips; heads many, discoid; rays absent. Weed of disturbed & waste sites.

Apr-Nov.

REFERENCE: Fisher 1988:201 (illus. p. 202).

HERBARIUM RECORDS: 4 Nov 1920—near Cols., *J. H. Schaffner*; 20 Aug 1961—OSU campus, *Naskali*; 22 Aug 1972—OSU Campus, *D. Keil*; 27 Jun 1973—alley near OSU Campus, Cols., *D. Keil 9629*; 11 Apr 1980—Presutti's Restaurant, 1692 W. 5th Ave., Grandview Heights, *W. Carr 2617* (KE, OS); 10 May 1980—Lane Ave., OSU Campus, Cols., *H. Liu 2206*; 16 Apr 1987—OSU Campus, S side of Postle Hall, Cols., *T. Lammers 6070*; 14 Jun 1989—OSU Campus, N side of B&Z Bldg., *Lowden 4184*; 16 Apr 1991—NE corner of Rt. 23 & Wilson Bridge Rd., waste ground, Sharon Twp., NW Cols. Quad., *McCormac 3427*.

25. ERECHTITES Raf. Fireweed

Stem rather soft, striate; blades alternate, sometimes clasping, lanceolate or oblong, serrate to lobed; heads discoid; involucre cylindric above widened base, main phyllaries equal; receptacle flat, naked; seeds forming at least in marginal flowers; pappus capillary, soft, white, copious.

1. *Erechtites hieracifolia* (L.) Raf.

Fireweed, Pilewort

Moist open woods. Aug-Sep. Syn.: *E. hieracifolia* Raf., *Senecio hieracifolius* L.

REFERENCES: Riddell 1834:155 (open woods); *Sullivan* 1840:32; Craig 1890:54, 87 (#225; University Farm Sep 1887; scarce; a few specimens have been found near the lake, about the culvert and in the woods); Selby & Craig 1890:11; Fisher 1988:196 (illus. p. 197).

HERBARIUM RECORDS: 1889—Cols., *Selby*; 3 Sep 1892—Cols., *Bogue*; 30 Aug 1982—Blendon Woods, *Owens*; 7 Sep 1991—Antrim Lake, Sharon Twp., *Lowden 4801*.

26. CACALIA L. Indian-plantain

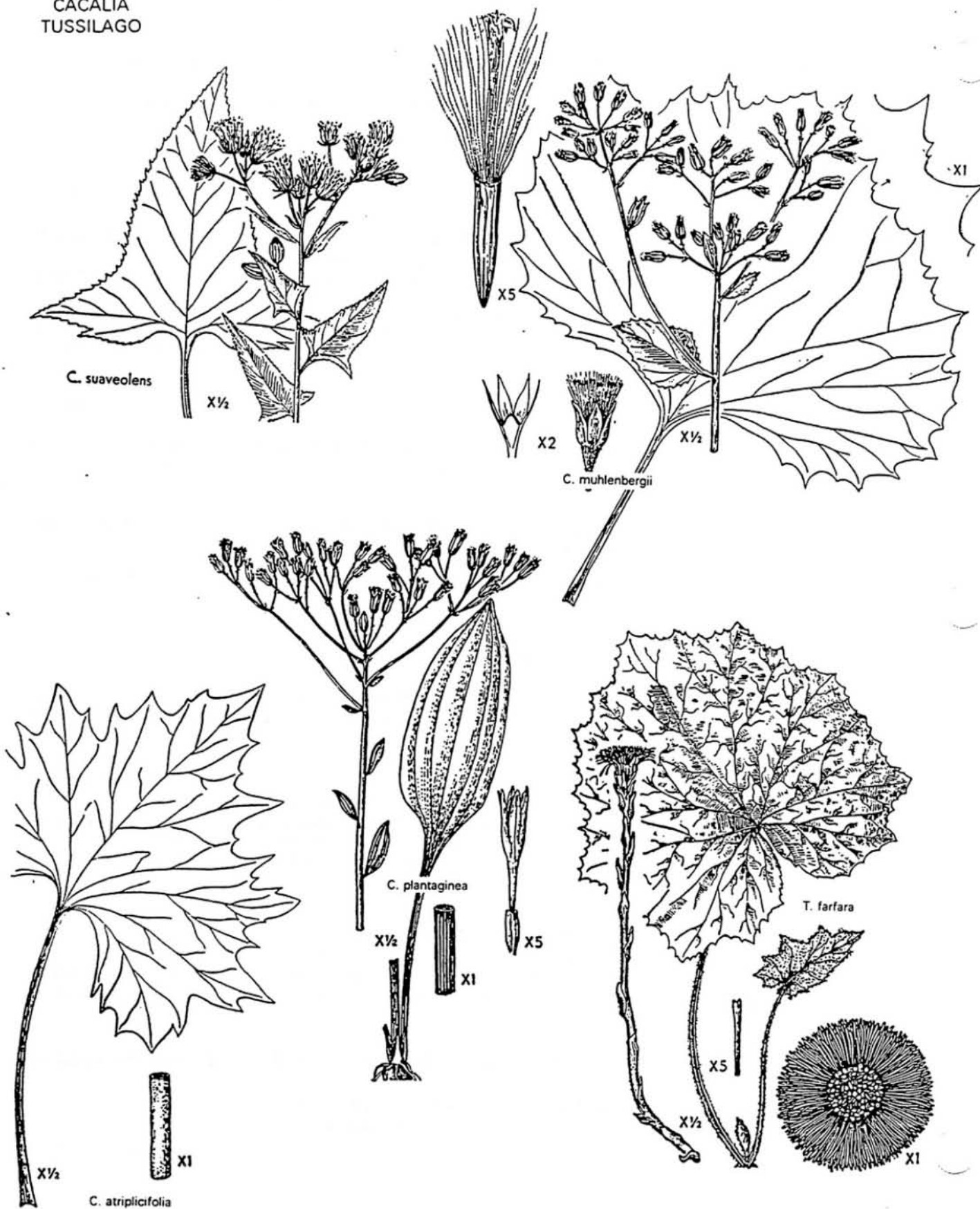
Tall, sometimes with milky juice; leaves alternate; heads discoid; main phyllaries equal; receptacle naked, flat, with sometimes a central projection; flowers bisporangiate, corollas white or pink, deeply 5-lobed; pappus soft, white, capillary.

a Blades pinnately veined, broadly or narrowly triangular, the lower ones hastate; flowers and phyllaries many more than 5. 1. *C. suaveolens*

a' Blades palmately veined or longitudinally ribbed; flowers and main phyllaries 5.

b Blades entire or nearly so, longitudinally 5-7-ribbed. 4. *C. plantaginea*

CACALIA  
TUSSILAGO



- b' Blades shallowly lobed and/or toothed, palmately veined.
- c Stem glaucous; lower surface of blades glaucous. 3. *C. atriplicifolia*
- c' Stem not glaucous, conspicuously grooved; blades green on both sides. 2. *C. muhlenbergii*

1. †*Cacalia suaveolens* L. Sweet or Sweet-smelling Indian-plantain, Hastate Indian-plantain  
Lower leaves hastate, upper less hastate; blades pinnately veined, margins serrate-dentate; phyllaries linear, attenuate. Sep.

REFERENCES: Sullivant 1840:30; Selby & Craig 1890:11; Fisher 1988:196 (illus. p. 199).  
HERBARIUM RECORD: 15 Sep 1928—Canal Winchester, E. Thomas.

2. †*Cacalia muhlenbergii* (Sch.-Bip.) Fernald Great Indian-plantain  
Similar to *Cacalia atriplicifolia* except stems are conspicuously grooved and not glaucous. Nov. Syn.: *C. reniformis* Muhl., not Lam.

REFERENCES: Riddell 1834:155 (dry prairies); Fisher 1988:198 (illus. p. 199).  
HERBARIUM RECORD: Nov 1890—Big Darby R., Selby.

3. *Cacalia atriplicifolia* L. Pale Indian-plantain  
Stems glaucous; leaf blades lobed and toothed, lower surface glaucous; flowers and phyllaries 5. Aug-Nov.

REFERENCES: Riddell 1834:155 (bottomland); Sullivant 1840:30; Craig 1890:87 (a clump of about a dozen plants growing on the dike W of the island, 11 Aug 1882, 31 Jul 1889); Selby & Craig 1890:11; Fisher 1988:198 (illus. p. 200).  
HERBARIUM RECORDS: 12 Aug 1882—Olentangy R., W. Green; 27 Nov 1890—Big Darby R., Selby; Aug 1892—near Cols., E. M. Wilcox; 14 Sep 1892—Bogue.

4. †*Cacalia plantaginea* (Raf.) Shinnery Fen Indian-plantain  
Heads with 5 flowers and phyllaries; blades nearly entire, 5-7 ribbed. Syn.: *C. tuberosa* Nutt.

REFERENCES: Riddell 1834:155 (*Cacalia lanceolata*; wet prairies); Riddell 1836:12 (*Cacalia tuberosa* Nutt.?, wet prairie 2 mi. S of Cols.); Sullivant 1840:30, 57 (*Cacalia ovata* Elliott & *C. tuberosa* Nutt., wet prairie, 2 mi. S of Cols.); Selby & Craig 1890:11; King 1981:119 (*Cacalia tuberosa*, Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie; 8-Graessle Rd. Bluff Site); McCance 1984:A-345; Fisher 1988:198 (illus. p. 200).  
HERBARIUM RECORDS: 1834—Cols., L[apham] (CINC, ILL); 1837—Cols., I. G. Jones (ILL).

## 27. TUSSILAGO L. Coltsfoot

Low, with rhizomes; leaves basal, long-petioled; blades round-ovate, cordate at base, shallowly lobed and dentate, white-woolly beneath; heads radiate, 2-3 cm wide, solitary on a scaly white-woolly scape, appearing before leaves; principal phyllaries equal; receptacle naked, flat; corollas yellow; ray-flowers many, carpellate, seeds forming; seeds not forming in disk-flowers; pappus soft, capillary, copious.

1. \**Tussilago farfara* L. Coltsfoot  
Adventive (native of Eurasia)

Apr.

REFERENCE: Fisher 1988:194 (illus. p. 195).

HERBARIUM RECORDS: 3 Apr 1890—[perhaps Franklin Co.], Craig; 15 Apr 1891—Hanover N St., Weed.

## ASTEREAE, Aster Tribe

## 28. SOLIDAGO L. Goldenrod

Leaves alternate, blades toothed or entire; heads radiate, small, often many, variously clustered; phyllaries in several series; pappus capillary; receptacle naked; corollas yellow (white in *S. bicolor*); disk flowers bisporangiate, ray flowers carpellate, seeds forming in both.

a Heads in a flat-topped, corymblike inflorescence.

b Blades ovate-oblong or oval, usually rough; involucre 5-9 mm high; achene 10-15-nerved; drier habitats.

16. *S. rigida*

b' Blades lanceolate or linear; involucre 4-6 mm high; achene 3-7-nerved or -angled; wet habitats.

c Blades oblong-lanceolate, toothed or entire, much shorter upward, flat, not 3-nerved. 17. *S. ohioensis*

- c' Blades linear, not much smaller upward, folded, somewhat 3-nerved. 18. *S. riddellii*
- a' Heads not in a flat-topped, corymblike inflorescence.
- d Inflorescence long and narrow, of several to many short axillary clusters, or a more or less cylindrical panicle, branches not secund, not curved downward.
- e Stem pubescent; rays white or cream-color. 2. *S. bicolor*
- e' Stem glabrous, except sometimes in the inflorescence or a short distance below; rays yellow.
- f Phyllaries with prominent spreading or recurved tips; involucre 7-9 mm high; rays 12-16; basal rosettes conspicuous. 1. *S. squarrosa*
- f' Phyllaries appressed.
- g Inflorescence of short axillary clusters, all but uppermost shorter than subtending leaves; achene pubescent; blades acuminate.
- h Blades ovate, sharply and coarsely serrate. 5. *S. flexicaulis*
- h' Blades lanceolate, serrate; stem glaucous. 6. *S. caesia*
- g' Inflorescence a narrow terminal panicle; lateral clusters, except sometimes lowest, longer than subtending leaves; leaf-margins ciliate, basal blades, when present, tapering to winged petioles.
- i Lower blades elliptic to oblanceolate, petioles clasping 1/2-3/4 circumference of stem; disk flowers 4-8; rays 1-8; lower part of stem often red; bog plants. 4. *S. uliginosa*
- i' Petioles of lower blades not clasping as described; plants of other habitats; cauline blades ovate-lanceolate, entire, many, finely reticulate, lateral veins obscure; inflorescence not leafy. 3. *S. speciosa*
- d' Inflorescence an ovoid or pyramidal terminal panicle, branches secund, some usually curved downward.
- j Stem and leaves with short gray pubescence; panicle often 1-sided; blades oblanceolate, crenate-serrate to entire, sometimes faintly triple-nerved, apex acute to obtuse, basal ones persistent; short axillary tufts usually present. 7. *S. nemoralis*
- j' Without the above set of characters.
- k One set of lateral nerves of blade obviously stronger than the others; blades lanceolate, acuminate, many, crowded; basal and lower cauline leaves deciduous before anthesis.
- l Stem, at least below the inflorescence, glabrous, often glaucous; blades hairy on veins beneath (or glabrous in var. *leiophylla*). 14. *S. gigantea*
- l' Stem puberulent or scabrous (or base glabrous), not glaucous; blades hairy to nearly or quite glabrous beneath. 15. *S. canadensis*
- k' Lateral nerves of blade equally conspicuous or one pair only a little stronger.
- m Blades pellucid-punctate, anise-scented when crushed, sessile, entire, lanceolate; stem below inflorescence glabrous or hairy in lines. 12. *S. odora*
- m' Blades not as above.
- n Blades pubescent beneath, or blades rugose-veiny, or both; basal leaves usually deciduous before anthesis.
- o Blades not rugose-veiny, thin, tapering at base, sharply serrate, hairy beneath, at least on veins; stem below inflorescence glabrous. 11. *S. ulmifolia*
- o' Blades strongly to weakly rugose-veiny, tapering or rounded at base, usually hairy beneath; stem hairy, scabrous, or glabrous; if stem and leaves glabrous, then blades strongly rugose-veiny. 13. *S. rugosa*
- n' Blades glabrous beneath, not rugose-veiny; stem below inflorescence glabrous; basal and lower cauline leaves present at anthesis, basal narrowed to margined petioles.
- p Upper surface of blades very rough, hairs minute, broad-based; stem angled; basal leaves very large. 8. *S. patula*
- p' Upper surface of blades not as above; stem terete or nearly so, or striate.
- q Lower petioles clasping stem 1/2-3/4 of its circumference; rays 1-8; disk flowers 4-8; bog plants. 4. *S. uliginosa*
- q' Lower petioles not clasping; blades acuminate; plants of other habitats.
- r Basal blades oblanceolate to narrowly elliptic, somewhat serrate, gradually narrowed to petiole; upper cauline blades entire, often with tufts in axils; achenes short-hairy; general. 9. *S. juncea*
- r' Basal blades ovate to elliptic, rather abruptly narrowed to petiole; only uppermost cauline blades entire; achenes glabrous; rare. 10. *S. arguta*

SOLIDAGO





1. †*Solidago squarrosa* Muhl.

Leafy or Squarrose Goldenrod

REFERENCES: Sullivant 1840:33 ("?"); Selby & Craig 1890:12 ("?").

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:53 (illus. p. 56).

2. *Solidago bicolor* L.

White Goldenrod, Silver-rod

Stems very hairy; rays white.

HERBARIUM RECORD: 1834—Worthington, *J. Paddock Collection* (ILL).

NOTE: Not mapped for Franklin Co. by Fisher 1988:54 (illus. p. 54).

3. *Solidago speciosa* Nutt. var. *speciosa*

Showy Goldenrod

Lower leaves persistent and large, ovate-lanceolate, glabrous, mostly entire or sometimes crenate. Sep-Oct.

REFERENCES: Selby 1891a:111a; Fisher 1988:59 (illus. p. 58).

HERBARIUM RECORDS: 3 Oct 1891—Georgesville, *Selby*; 3 Oct 1891—Georgesville, *Werner* (CLM); 24 Sep 1892—Georgesville, *Selby*; 24 Sep 1892—Georgesville, *Werner* (CLM).

4. *Solidago uliginosa* Nutt.

Northern Bog Goldenrod

Stems glabrous; leaves oblanceolate, subentire to serrate, usually pinnately veined; lower petioles clasping stem 1/2-3/4 of its circumference. Oct.

REFERENCES: Selby & Craig 1890:12; Fisher 1988:64-65 (illus. p. 63).

HERBARIUM RECORDS: Oct 1890—Cols., *Werner* (CLM); Oct 1890—Cols. & Woodward Ave. in swamp, *Selby*; Oct 1890—Franklin Co., *Selby*; 9 Oct 1891—near Cols., *Selby*; 10 Oct 1891—Cols., *Werner* (CLM); 11 Oct 1891—Cols., *Selby* (CLM, OS); 12 Oct 1891—Cols., Woodward Ave. in swamp, *Selby*.

5. *Solidago flexicaulis* L.

Zigzag Goldenrod, Broad-leaved Goldenrod

Stems usually angled and zigzag, glabrous to slightly pubescent below inflorescence; leaves ovate, sharply serrate.

Aug-Oct. Syn.: *S. flexicaulis* var. *latifolia* L., *S. latifolia* L., *S. latifolia* Muhl.

REFERENCES: Riddell 1834:155 (slaty ravines); Sullivant 1840:33; Craig 1890:53, 83 (#180; a small clump on the island, 9 Sep 1882, 30 Aug 1887; University Farm Sep & Oct 1887; rare); Selby & Craig 1890:12; Fisher 1988:54 (illus. p. 57).

HERBARIUM RECORDS: Sep 1888—Cols., *Weed & Craig*; 1890—Cols., *Selby*; Aug 1890—near Cols., *E. V. Wilcox*; 28 Aug 1890—Cols., *E. V. Wilcox*; 14 Aug 1890—N Cols., *E. V. Wilcox*; 3 Sep 1892—Cols., *Bogue*; 21 Sep 1895—S Cols., *Osburn*; 10 Oct 1896—Cols., *W. Kellerman*; 4 Sep 1899—Big Walnut, *Selby*; 10 Oct 1901—Neil's Run, *Eckman*; 13 Oct 1928—Clintonville, *Hicks*; 14 Oct 1938—Worthington, *Stover*; 15 Sep 1985—Highbanks Metro Park (Delaware Co.), forest, *Witsberger 853* (OWU); 22 Sep 1986—Highbanks Metro Park (Delaware Co.), woods, *Watts 349* (OS, OWU); 22 Aug 1990—Hayden Falls off Hayden Run Rd., W side of Scioto R., Norwich Twp., *Lowden 4558*; 25 Sep 1991—W side of Scioto R., off Dublin Rd., deep ravine leading to river, bridge 1 mi. N of Tuttle Rd., Washington Twp., *Lowden 4859*.

6. *Solidago caesia* L.

Blue-stem Goldenrod, Axillary Goldenrod

Stems glaucous, glabrous or only slightly hairy below inflorescence; blades lanceolate, serrate. Aug-Oct.

REFERENCES: Sullivant 1840:33; Selby & Craig 1890:12; Fisher 1988:57 (illus. p. 58).

HERBARIUM RECORDS: [ca. 1834]—Worthington, *Lapham* (CINC); 21 Oct 1838—Worthington, *J. Paddock Collection* (ILL); 22 Sep 1882—Cols., *W. Green*; Sep 1888—Cols., *Craig*; 1890—Cols., *Selby*; Aug 1890—Big Walnut Creek, *Selby*; 10 Oct 1902—N Cols., *Sanders*; 13 Sep 1979—Iuka Ravine, Iuka Ave. between Indianola & Summit, Cols., *W. Carr 2381*; 15 Sep 1982—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), forest, *Witsberger 860* (OWU); 22 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts 354* (OS, OWU); 12 Sep 1991—Hoover Dam Park, woods N of entrance off Cabbage Rd., Blendon Twp., *Lowden 4833*; 12 Sep 1991—Hoover Dam Park, Walnut St. W of Cabbage Rd., cemetery woodland, Blendon Twp., *Lowden 4838*.

7. *Solidago nemoralis* Aiton var. *nemoralis*

Gray Goldenrod

Stems and leaves covered with short gray pubescence. Aug-Oct.

REFERENCES: Sullivant 1840:33; Selby & Craig 1890:12; Fisher 1988:61 (illus. p. 60).

HERBARIUM RECORDS: Aug 1890—Big Walnut Creek, *Selby*; 4 Sep 1890—Central College, Cols., *Selby*; 3 Oct 1891—Georgesville, *Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM); 7 Oct 1905—High Banks, *Fischer*; Sep 1930—Red Hills, *Chapman*; 20 Aug 1982—Blendon Woods, *Owens*; 22 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts 352* (OS, OWU).

8. *Solidago patula* Muhl.

Rough-leaved Goldenrod

Leaves glabrous below, very rough above; basal leaves large, narrowed to margined petioles. Aug-Oct.

REFERENCES: Sullivant 1840:33; Selby & Craig 1890:12; Fisher 1988:59, 61 (illus. p. 60).

HERBARIUM RECORDS: 1837—Cols., *J. Paddock Collection* (ILL); 15 Sep 1882—Cols., *Selby*; Aug 1890—near Cols., *E. V. Wilcox*; 14 Sep 1890—N Cols., *E. V. Wilcox*; 24 Sep 1890—Cols., *E. V. Wilcox*; Oct 1890—Cols., *Selby*; 18 Sep 1901—along the Ohio Canal, Cols., *Bridwell, Tyler & Jennings*.

9. *Solidago juncea* Aiton

Plume Goldenrod, Early Goldenrod

Leaves glabrous to slightly pubescent; upper leaves often with tufts in axils; basal leaves present at anthesis, long-acuminate, gradually narrowed to petiole. Jul-Aug.

SOLIDAGO



REFERENCE: Fisher 1988:64-65 (illus. p. 62).

HERBARIUM RECORDS: 14 Aug 1839—Duncan Plains, *J. Paddock Collection* (ILL); Aug 1890—Big Walnut Creek, *Selby*; 8 Jul 1891—Big Walnut, *Selby*; 17 Aug 1905—N Cols., *Fischer*; 29 Jul 1982—Blendon Woods, *Owens*.

10. †*Solidago arguta* Aiton

Cut-leaf Goldenrod, Forest Goldenrod

REFERENCE: Selby 1892a:110 (Rocky Fork, *Selby*).

NOTE: No specimens seen from Franklin Co. Not mentioned for Franklin Co. by Fisher 1988:49 ("There are reports of *Solidago arguta* Aiton ... from Ohio, but I have seen no specimens").

11. *Solidago ulmifolia* Muhl.

Goldenrod, Elm-leaved Goldenrod

Leaves reduced upward, basal leaves absent at anthesis. Aug-Oct.

REFERENCES: Selby 1891a:111a; Fisher 1988:64-65 (illus. p. 62).

HERBARIUM RECORDS: 19 Aug 1882—Olentangy R., *W. Green*; 3 Oct 1891—Georgesville, *Selby*; 29 Aug 1892—Georgesville, *Werner*; 22 Aug 1986—Highbanks Metro Park (Delaware Co.), dry blufftop at Overlook Deck, *Watts 343*.

12. †*Solidago odora* Aiton

Fragrant or Sweet Goldenrod, Licorice Goldenrod

REFERENCE: Riddell 1834:155 (Meadows).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:64 (illus. p. 63).

13. *Solidago rugosa* Mill. var. *aspera* (Aiton) Cronquist

Wrinkled-leaf Goldenrod

Blades rugose-veiny beneath; inflorescence paniculate, branches recurved and secund. Sep. Syn.: *S. rugosa* Aiton

REFERENCES: Selby & Craig 1890:12; Fisher 1988:64 (illus. p. 63).

HERBARIUM RECORD: 11 Sep 1891—Cols., *Werner*.

14. *Solidago gigantea* Aiton

Large or Smooth Goldenrod

Stems terete, glabrous except in the inflorescence. Aug-Oct. Syn.: *S. serotina* Aiton

REFERENCES: Sullivant 1840:33; Craig 1890:53, 83 (#181; common on the island, 11 Aug 1882; University Farm Sep & Oct 1887); Selby & Craig 1890:12; Fisher 1988:59, 61 (illus. of var. *leiophylla*, p. 62).

Two varieties are recognized:

var. *gigantea*

Lower leaf blade with midrib and lateral veins pubescent.

HERBARIUM RECORD: 5 Sep 1890—Central College, *E. V. Wilcox*.

var. *leiophylla* Fernald

Lower leaf surface glabrous or slightly pubescent on midrib.

HERBARIUM RECORDS: 12 Aug 1882—Olentangy R., OSU, *W. Green*; 19 Aug 1882—Olentangy R., *W. Green*; Aug 1890—Cols., *Werner* (CLM); 30 Aug 1890—OSU Farm, Cols.; 26 Aug 1891—Sellsville, *Selby*; 15 Sep 1985—Highbanks Metro Park (Delaware Co.), woods near Olentangy R., *Witsberger 851* (OWU); 24 Aug 1989—jct. of Starret Rd. & Henderson Rd., near Olentangy Rd., N Cols., *Lowden 4290*; 18 Sep 1989—Highbanks Metro Park (Delaware Co.), field, *Watts 489* (OS, OWU).

15. *Solidago canadensis* L.

Canada or Common Goldenrod

Stems gray pubescent in and below the inflorescence; leaves 3-nerved, lanceolate, serrate to entire, acuminate.

Aug-Sep. Syn.: Incl. *S. altissima* L.

REFERENCES: Sullivant 1840:33 (*Solidago altissima* L. var. *rugosa*); Craig 1890:83 (grows on the island but more sparingly than *Solidago gigantea*, 23 Sep 1882); Selby & Craig 1890:12; Fisher 1988:61 (illus. p. 58).

HERBARIUM RECORDS: 23 Sep 1882—Cols., *Devo*; Sep 1888—Cols., *Craig*; 1890—Cols., *Selby*; 30 Aug 1890—OSU Farm, Cols., *Selby*; 9 Sep 1890—N Cols., *E. V. Wilcox*; Aug 1891—near Cols., *E. V. Wilcox*; 27 Sep 1894—Cols., *W. Kellerman*; 28 Aug & 7 Sep 1982—Blendon Woods, *Owens*; 22 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts*; [date?]-Highbanks Metro Park (Delaware Co.), *Morawetz*.

16. †*Solidago rigida* L.

Stiff Goldenrod

Stems stout, stiff, hairy, gray appearing; leaves ovate-oblong, rough, basal ones with longer petioles. Aug-Oct.

Syn.: Incl. var. *glabrata* E.L. Braun

REFERENCES: Riddell 1834:155 (dry prairies); Riddell 1835:56 (Duncan's Plains, dry prairies); Sullivant 1840:33; Selby & Craig 1890:12; Selby 1891a:111a (#461 Re-collected); King 1981:121 (Pleasant Twp.: 7-Georgesville RR Site); Fisher 1988:53 (illus. p. 55).

HERBARIUM RECORDS: 1833—Scott's Plains, *J. Paddock Collection* (ILL); 14 Aug 1839—Duncan's Plains, *J. Paddock Collection* (ILL); 1840—Cols., *Sullivant*; 3 Oct 1891—Big Darby, near Cols., *Selby*; 29 Aug 1892—Franklin Co., *Bogue*; 29 Aug 1892—Georgesville, *Bogue*; 24 Sep 1892—Georgesville, *Selby*; 24 Sep 1892—Franklin Co., *Werner* (CLM); 1895—Georgesville, *E. M. Wilcox* (KE); 21 Oct 1992—OSU West Campus, Prairie Plant Reserve, corner of Kinnear Rd. & North Star Ave., Clinton Twp., *Lowden 5042*.

17. †*Solidago ohioensis* Riddell

Ohio Goldenrod

Stems glabrous; leaves with ciliate margins; blades oblong-lanceolate, progressively reduced upward on the stem; lower and well developed basal leaves with longer petioles. Sep.

SOLIDAGO



SOLIDAGO  
EUTHAMIA  
AMPHIACHYRIS



REFERENCES: Riddell 1835:497 (Type locality, 2 mi. S from Cols.); Sullivant 1840:33; Selby & Craig 1890:12; Selby 1892a:111 (by canal, S of city, *Wilcox*); Fisher 1988:53 (illus. p. 55).  
HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 17 Sep 1892—Canal S of city, Cols., *Werner*; Sep 1893—near Cols., *E. M. Wilcox*; 1899—S of Cols., *W. Kellerman* (KE, OS); 8 Sep 1901—along the Ohio Canal, Cols., *Bridwell, Tyler & Jennings*.

18. †*Solidago riddellii* Frank

Riddell's Goldenrod

Stems glabrous; leaves linear-lanceolate, folded, 3-nerved; blades not conspicuously reduced upward on the stem.

Aug-Oct.

REFERENCES: Riddell 1835:497 (Type locality, Scott's Plains, 12 mi. E from Worthington); Sullivant 1840:33; Selby & Craig 1890:12; Selby 1892a:111 (by canal, S of city, *Werner*); Fisher 1988:53 (illus. p. 55).  
HERBARIUM RECORDS: 14 Sep 1833—Scott's Plains, *J. Paddock Collection* (ILL); 1840—Cols., *Sullivant*; 30 Aug 1892—on the canal S of city, Cols., *E. M. Wilcox*; 17 Sep 1892—on the canal S of city, Cols., *E. M. Wilcox*; 4 Oct 1892—Cols., *Bogue*; 7 Oct 1893—Cols., *Werner* (CLM); 21 Sep 1895—S Cols., *Osburn*; 1899—Cols., *W. Kellerman* (KE, OS); 20 Sep 1901—along the Ohio Canal, Cols., *Bridwell & Tyler*; 8 Oct 1902—S Cols., *Sanders*; 24 Sep 1904—Scioto R., boggy prairie, Cols., *Gleason*.

29. EUTHAMIA Nutt. Flat-topped Goldenrod

Heads in a flat-topped, corymblike inflorescence; blades dotted, entire, linear; achenes pubescent; basal and lower cauline leaves deciduous; receptacle fimbriate. (often incl. in *Solidago*)

†*Euthamia gymnospermoides* Greene (*E. remota* Greene), the Great Plains Goldenrod, was reported by Roberts & Cooperrider 1982:70 (*Solidago remota* (Greene) Friesner; *S. gymnospermoides* (Greene) Fernald) as a probable introduction in Franklin Co. I have seen no specimens of this species. Not mapped for Franklin Co. by Fisher 1988:51.

1. *Euthamia graminifolia* (L.) Nutt.

Common Flat-topped Goldenrod, Bushy Goldenrod

Blades with 3 evident nerves and usually 2-4 weaker one; heads mostly sessile. Open moist places. Aug-Oct.

Syn.: *Solidago graminifolia* Elliott

Two varieties are recognized:

var. *graminifolia*

Stems glabrous to slightly pubescent. Syn.: *S. graminifolia* (L.) Salisb. var. *graminifolia*

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:33 (*Solidago tenuifolia* Pursh?); Selby & Craig 1890:12 (*Solidago tenuifolia* Pursh?); Selby 1892a:110 (*Solidago tenuifolia* Pursh, Cols., *E. M. Wilcox*); Fisher 1988:51 (illus. p. 52).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; Aug 1890—Westerville, *E. M. Wilcox*; 11 Sep 1891—Cols., *Werner* (CLM); 24 Sep 1892—Georgesville, *Selby*; 24 Sep 1892—Franklin Co., *Werner*; 24 Sep 1892—Georgesville, *Werner* (CLM, OS); 24 Oct 1892—Big Darby, near Cols., *Selby*.

NOTE: Based on misidentified specimens, the references made to *Euthamia tenuifolia* (Pursh) Nutt. in Franklin Co. have been misapplied and should be treated here as *E. graminifolia* var. *graminifolia*.

var. *nuttallii* (Greene) W. Stone

Stems with dense pubescence. Syn.: *Solidago graminifolia* (L.) Salisb. var. *nuttallii* Greene

REFERENCES: Selby & Craig 1890:12 (*Solidago lanceolata* L.); Fisher 1988:51 (illus. p. 52).

HERBARIUM RECORDS: Sep 1890—Westerville, *Selby*; Sep 1890—Big Walnut, *Selby*; 9 Sep 1890—N Cols., *E. V. Wilcox*; 5 Oct 1970—E. 5th St., Cols., *Stuessy*; 28 Aug 1982—Blendon Woods, *Owens*; [date?]-Highbanks Metro Park, *Morawetz*; 5 Sep 1991—N side of Morse Rd. just W of Stelzer Rd. jct., Blendon Twp., *Lowden 4790*; 12 Sep 1991—Hoover Dam Park, W of Cubbage Rd. at jct. with Walnut St., Blendon Twp., *Lowden 4842*.

30. GUTIERREZIA Lag.

Subshrubby perennial; heads radiate; disk-flowers perfect and fertile; pappus of disk-flowers of erose scales, shorter than the corolla. Otherwise, quite similar to *Amphiachyris*.

1. \**Gutierrezia texana* Torr. & A. Gray

Broom-snakeroot

Adventive (introduced from W U.S.)

Oct.

REFERENCES: Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers' Circus); Selby 1891c:148 (Western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio, near Cols.).

HERBARIUM RECORDS: Oct 1890—Sellsville near Cols., *Selby*; 26 Oct 1890—Sells Brothers' Circus, near Cols., *Selby*; 27 Oct 1890—Sellsville, Cols., *Selby*; Nov 1890—Sellsville, near Cols., *Craig*.

NOTE: Not treated by Fisher 1988:44.

### 31. AMPHIACHYRIS (A.DC.) Nutt.

Annual; leaves punctate, alternate, narrow, entire; heads radiate, numerous, small, in flat-topped inflorescence; phyllaries strongly imbricate, glutinous; rays yellow; disk flowers functionally staminate, without an ovary, the style-branches short, slender, short-hairy, not stigmatic; pappus in rays a minute toothed crown or several short scales, in disk flowers of 5-8 long spatulate scales more than half the length of the corolla tube; receptacle naked.

#### 1. \**Amphiachyris dracunculoides* (DC.) Nutt.

Broom-snakeroot

Adventive (introduced from W U.S.)

Oct. Syn.: *Gutierrezia dracunculoides* (DC.) S.F.Blake

REFERENCES: Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers' Circus); Selby 1891c:148 (Western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio, near Cols.).

HERBARIUM RECORDS: [date?]-Sellsville, near Cols., *Craig*; 23 Oct 1890—Sellsville, *Selby & E. V. Wilcox*; 28 Oct 1890—Sellsville near Cols., *E. V. Wilcox*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:44, where he treats this species under the genus *Gutierrezia*, and not under *Amphiachyris*.

### 32. ASTER L. Aster

Leaves alternate; heads radiate; phyllaries usually in several series of different lengths; receptacle flat or convex, naked; disk flowers perfect, corollas usually yellow, sometimes becoming purple or brown, ray flowers carpellate, corollas white, pink, purple, or blue, seeds forming in both; pappus of capillary bristles, equal, or with a shorter outer series.

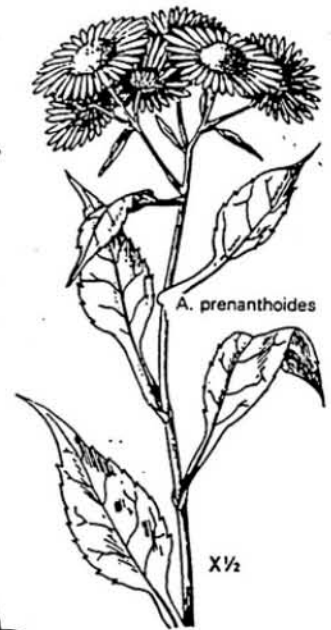
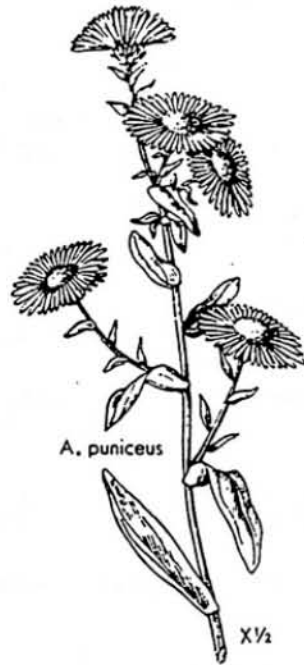
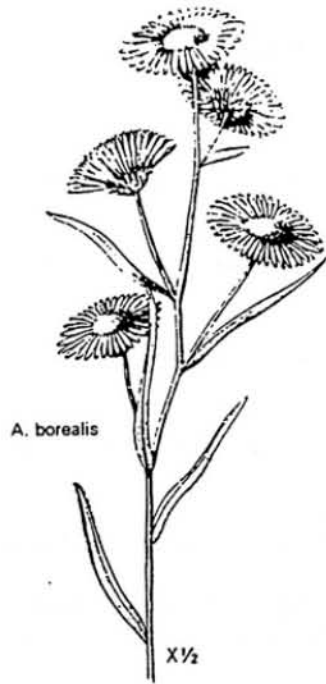
*Aster pauciflorus* Nutt. (Few-flowered Aster, introduced from W U.S.) is not included in the key below; no specimens have been seen from Franklin Co. (not treated by Fisher 1988:67). This species was reported by Selby & Craig 1890:11 (recently introduced from western states); Lazenby 1891:302 (Sellsville, near Cols.); Selby 1891b:75 (Sells Brothers Circus); Selby 1891c:148 (western plants ... collected the last of October [1890] about the winter-quarters of Sells Brothers' Circus, at Sellsville, Ohio, near Cols.).

- a At least some of the leaves (basal and lower cauline, usually) having blades with cordate bases and petioles.
- b Heads in a flat-topped corymb; basal blades cordate-ovate.
- c Phyllaries and peduncles glandular; rays blue or violet, rarely white; tufts of large toothed cordate basal leaves abundant. 19. *A. macrophyllus*
- c' Phyllaries and peduncles not glandular; rays usually white, or violet in age.
- d Lower stem-leaves and the large ones of the abundant basal tufts serrate-dentate, sinus rectangular. 20. *A. schreberi*
- d' Lower stem-leaves coarsely toothed, acuminate, often smaller than those higher on stem, sinus cordate or rounded; stem zigzag in inflorescence; basal tufts usually absent. 21. *A. divaricatus*
- b' Heads in an elongate panicle; rays usually blue or violet.
- e Blade or widened base of petiole cordate-clasping; stem and leaves usually pubescent; bracts many on branches of rather stiff panicle; phyllaries minutely pubescent, tips rhombic. 16. *A. undulatus*
- e' Neither blade nor petiole-base cordate-clasping.
- f Subulate or filiform tips of phyllaries spreading, green areas narrow and inconspicuous; petioles of lower stem-leaves winged; panicle often elongate, branches ascending.
- g Stem glabrous or pubescent in lines. 14. *A. sagittifolius*
- g' Stem and under surface of blades closely gray-pubescent. 15. *A. drummondii*
- f' Tips of phyllaries appressed, rhombic green areas conspicuous.
- h Cauline blades entire or nearly so, firm.
- i Petiole-length and blade-size abruptly smaller upward; only lowermost blades cordate at base; inflorescence many-bracted. 11. *A. oolentangiensis*

- i' Petiole-length and blade-size gradually smaller upward; most of the blades cordate at base.  
12. *A. shortii*
- h' Cauline blades sharply serrate, thin, pubescent beneath. 13. *A. cordifolius*
- a' None of the leaves having blades with cordate bases and petioles.
- j Cauline blades sessile, clasping stem with auricled or cordate bases.
- k Phyllaries glandular; blades entire or nearly so.
  - l Rays 40 or more, purple; branches of inflorescence glandular-pubescent; heads large; leaves crowded.  
18. *A. novae-angliae*
  - l' Rays fewer than 40, blue or pink; branches of inflorescence glandular or not; blades strongly cordate-clasping at base. 17. *A. patens*, blades thin, the larger slightly narrowed just above base, var. *phlogifolius*
- k' Phyllaries not glandular; blades entire to serrate.
  - m Blades sharply serrate, acuminate, usually with a narrow portion just above base; stem zigzag; rays pale blue or lavender. 3. *A. prenanthoides*
  - m' Blades entire or somewhat serrate, not narrowed just above base.
    - n Blades linear or linear-lanceolate, long-tapering at tip; phyllaries with slender green midvein; ligules pale blue or lavender; rare. 1. *A. borealis*
    - n' Blades wider; phyllaries not as above; achenes glabrous or nearly so.
      - o Stem and leaves glabrous, glaucous; phyllaries with rhomboid green tips; rays pale blue or lavender. 4. *A. laevis*
      - o' Stem and leaves not glaucous; stem usually stout and purple, hairy, the hairs ordinary or broad-based, to glabrous; phyllaries loose, slender and elongate, the outer ones green; rays purple to lavender. 2. *A. puniceus*
- j' Blades sessile or petioled, not clasping or, if slightly clasping, then without cordate or auricled bases.
- p Phyllaries rigid, margins of the subulate green tips inrolled; branches stiff, ascending to spreading; rays usually white. 10. *A. pilosus*,
  - q Stem and sometimes the leaves pubescent, var. *pilosus*
  - q' Stem and leaves glabrous or nearly so, var. *pringlei*
- p' Phyllaries flat, not as above.
  - r Pappus in 2 series, the outer shorter. 23. *A. linariifolius*
  - r' Pappus in 1 series.
    - s Phyllaries blunt, squarrose, tips mucronate; heads many, small; bracts in inflorescence many, small; rare. 9. *A. ericoides*
    - s' Phyllaries usually acute, not squarrose.
      - t Heads small, 1 cm wide or less, along one side of elongate branches of inflorescence; rays white, lavender, or pink, or becoming pink. 7. *A. lateriflorus*
      - t' Heads mostly larger than above; inflorescence-branches not or little one-sided; limb of disk-corolla lobed less than halfway.
        - u Stem tall, erect, furrowed and angled; involucre 7-10 mm high; basal leaves large, rough, coarsely toothed, petioles winged; rays blue or purple, 1-2 cm long. 22. *A. tataricus*
        - u' Plants not as above.
          - v' Blades mostly entire, with revolute edge, firm, strongly reticulate beneath, areoles isodiametric; rays usually blue or lavender. 6. *A. praealtus*
          - v' Blades not as above; if strongly reticulate beneath, then the areoles not isodiametric.
        - w Heads long-peduncled, peduncles and inflorescence-branches with many small bracts; phyllaries mostly with rhombic green tips; rays usually blue or lavender; rare. 8. *A. dumosus*
        - w' Peduncles usually short; inflorescence not conspicuously bracted; green tips of phyllaries not or seldom rhombic.
          - x Slender bog plants; blades entire, linear or nearly so; involucre 5-8 mm high; rays lavender, blue, or white; rare. 1. *A. borealis*
          - x' Not bog plants; blades mostly serrate, glabrous on lower surface; involucre 3-6 mm high; common and abundant. 5. *A. lanceolatus*, involucre 4 mm high or more; blades of main stem elongate, 3-12 mm wide, var. *lanceolatus*



ASTER



1. †*Aster borealis* Prov.

Rush Aster, Northern Bog Aster

Stems pubescent in lines from petiole base; blades linear-lanceolate, long-tapering at tip; inner phyllaries with a thin green midrib. Bogs & wet places. Aug. Syn.: *A. junciformis* Rydb.

REFERENCE: Torrey & Gray 1841:138 (*Aster laeiflorus* Nees var. ? *laeiflorus* Torr. & A.Gray; Type locality, Cols., Sullivant).

HERBARIUM RECORD: 11 Aug 1893—near Cols., *E. M. Wilcox*.

NOTE: Specimen was annotated by Fisher as *Aster junciformis*. Not mapped for Franklin Co. by Fisher 1988:83 (illus p. 82).

2. *Aster puniceus* L.

Bristly Aster

Stems usually stout and purple and hairy; leaves entire or somewhat serrate, not narrowed just above base. Moist places. Sep-Oct. Syn.: *A. novi-belgi* L.

REFERENCES: Riddell 1834:155 (dry prairies); Riddell 1836:12 (Cols., *Lapham*); Sullivant 1840:30; Craig 1890:53, 84 (#188; rather common near the lake, 9 Sep 1882, 15 Sep 1885; University Farm Sep & Oct 1887; grows sparingly along the brook S of the lake); Selby & Craig 1890:11; Selby 1891a:111a; Kellerman & Werner 1893:225 (specimens for verification of this, in the Experimental Station Herbarium, collected by Mr. Craig, and labelled *A. novi-belgi*, are *A. puniceus* L.); Fisher 1988:84 (illus. p. 85).

HERBARIUM RECORDS: [ca. 1834]—Cols., *Lapham* (CINC); 1837—Cols., *J. Paddock Collection*, *I. G. Jones* (ILL); 9 Sep 1890—N. Cols., *E. V. Wilcox*; 24 Sep 1890—Cols., *E. V. Wilcox*; 1891—near Cols., *Selby*; Sep 1892—Cols., *Werner*; 4 Oct 1892—Cols., *Bogue*; 30 Sep 1991—N side of Rodebaugh Rd., 3/4 mi. E of Reynoldsburg, New Albany Rd., Truro Twp., Reynoldsburg Quad., *McCormac 4407*.

NOTE: Almut Jones (p. 176) treats *Aster novi-belgi* in synonymy.

3. *Aster prenanthoides* Muhl.

Crooked-stem Aster, Zigzag Aster

Stem often zigzag; leaves prominently serrate, acuminate, narrowed just above the base, blades with strongly auriculate-clasping bases. Moist woods & riverbanks. Aug-Nov.

REFERENCES: Riddell 1834:155 (slaty ravines); Sullivant 1840:30; Craig 1890:53, 56, 84 (#189; common along the brook, 14 Sep 1882; University Farm Sep & Oct 1887, 10 Nov 1888); Selby & Craig 1890:11; Fisher 1988:83 (illus p. 81).

HERBARIUM RECORDS: 1839—Worthington, *J. Paddock Collection* (ILL); 9 Oct 1890—Cols., *Bogue*; Aug 1892—near Cols., *E. M. Wilcox*; 20 Sep 1895—N Cols., *Olentangy, Osburn*; 13 Oct 1929—Red Hills opposite Central College, *Chapman*; 22 Sep 1982—Blendon Woods, *Owens*.

4. *Aster laevis* L.

Smooth Aster

Stem and leaves glabrous, glaucous; blades sessile, clasping stem with auricled bases; larger leaves more than 1 cm wide. Dry open areas. Aug-Oct.

REFERENCES: Riddell 1834:155 (*Aster cyaneus*, dry prairies); Riddell 1835:54 (*Aster cyaneus* Pursh, Duncan's Plains, meadows & dry prairies); Sullivant 1840:30; Selby & Craig 1890:11; Fisher 1988:83 (illus. p. 82).

HERBARIUM RECORDS: 4 Oct 1890—Central College, *E. V. Wilcox*; 3 Oct 1891—Georgesville, *Selby*; 29 Aug 1892—Georgesville, *Bogue* (CLM, OS); 4 Oct 1899—*Duvel*; 14 Oct 1905—N Cols., *Fischer*; 18 Aug 1929—Darby, S of National Rd., *Gordon & Chapman*; 1 Sep 1929—Highlands (close to Delaware Co. Line), *Gordon & Chapman*; 22 Aug 1986—Highbanks Metro Park (Delaware Co.), overlooking bluffs-prairies, *Watts 342* (OS, OWU).

5. *Aster lanceolatus* Willd. var. *lanceolatus*

Eastern-lined Aster

Specimens best fit var. *lanceolatus*, having heads more than 4 mm high; largest leaves less than 1.5 cm wide. Moist lowlands. Sep-Oct. Syn.: *A. paniculatus* of authors, a preoccupied name, *A. simplex* Willd., misapplied, *A. simplex* Willd. var. *ramosissimus* (Torr. & A.Gray) Cronquist

REFERENCES: Sullivant 1840:30; Torrey & Gray 1841:133-134 (*Aster carneus* var. *ambiguus* Torr. & A.Gray; Type locality, [Worthington], *Dr. Paddock*); Selby & Craig 1890:11; Fisher 1988:96 (illus. p. 97).

HERBARIUM RECORDS: 4 Oct 1890—Central College, *E. V. Wilcox*; 9 Oct 1890—Cols., *Bogue*; Sep 1891—Central College, Cols., *Selby*; 3 Oct 1891—Georgesville, *Selby*; 24 Sep 1892—Big Darby, *Selby*; Sep 1893—Cols., *Werner* (CLM); 27 & 28 Sep 1894—Cols., *W. Kellerman*; 10 Oct 1896—Cols., *W. Kellerman*; 23 Sep 1923—Cols., *Werner* (CLM); 1 Oct 1942—Olentangy flood plain, *Jacobs*; 22 Sep 1982—Blendon Woods, *Owens*.

NOTE: Perhaps *Aster tradescanti* L. and *Aster longifolius* Lam. of Craig 1890:84 (Occurs occasionally in the low marshy ground E of the island, but is not found without careful search), Selby & Craig 1890:11, and Kellerman & Werner 1893:225 (Mr. Craig had a specimen in his herbarium for authentication of this species; it was a small form) belong here under *Aster lanceolatus*.

6. *Aster praealtus* Poir.

Veiny-lined Aster

Leaves entire, margins revolute; blades strongly reticulate beneath with isodiametric areoles. Oct. Syn.: *A. salicifolius* Aiton

REFERENCES: Sullivant 1840:30; Selby & Craig 1890:11; Fisher 1988:94 (illus. p. 95).

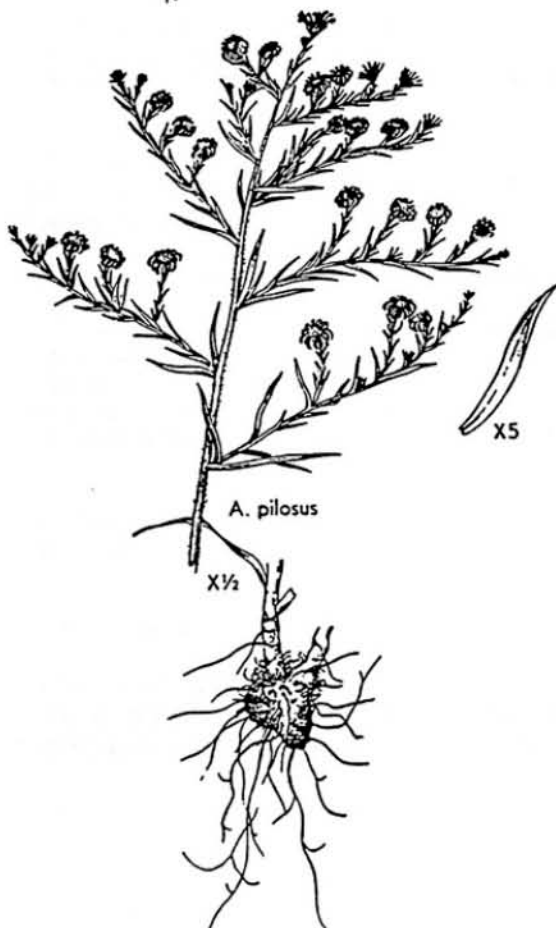
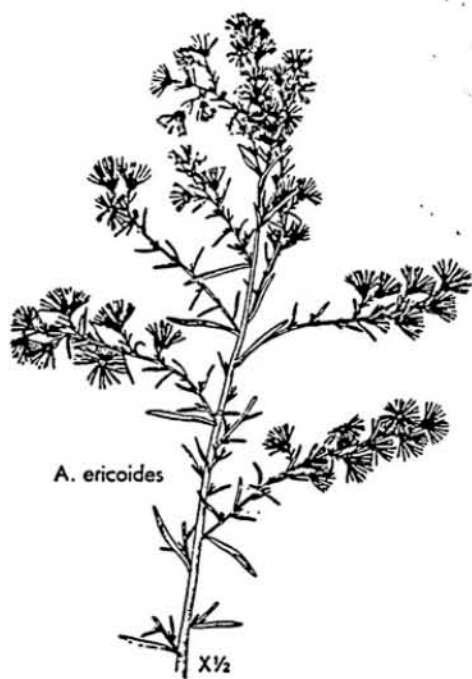
HERBARIUM RECORDS: 1833—Worthington, *J. Paddock Collection* (ILL); 9 Oct 1890—Cols., *Bogue*; 7 Oct 1893—Cols., *Werner* (CLM, OS).

7. *Aster lateriflorus* (L.) Britton

Goblet Aster, Starved Aster

Leaves sessile above or nearly so; blades linear to more often lanceolate, tapering at both ends, entire or serrate; disk corollas goblet-shaped, the recurved lobes 1/2-3/4 the length of the limb. Various habitats. Sep-Oct. Syn.: *A. diffusus* Aiton, *A. miser* L., *A. vimineus* Lam.

ASTER



REFERENCES: Riddell 1834:155 (dry prairies); Craig 1890:53, 84 (#186; common in waste places and on the island, 14 Sep 1882; University Farm Sep 1887); Selby & Craig 1890:11; Fisher 1988:94 (illus. p. 93).

HERBARIUM RECORDS: 1834—Worthington, *J. Paddock Collection* (ILL); Sep 1888—Cols., *Craig*; 1890—Central College & Big Walnut Creek, *Selby*; 4 Oct 1891—Central College, *Selby*; 18 Sep 1890—Cols., Morse Rd opposite Rinks Dept. Store, *Doskotch*; 15 Sep 1982—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), edge of forest, *Witsberger 861* (OWU); 22 Sep 1986—Highbanks Metro Park (Delaware Co.), open field, *Watts 350* (OS, OWU); 18 Sep 1989—Highbanks Metro Park (Delaware Co.), woods, *Watts 504*; 30 Sep 1991—3/4 mi. E of Reynoldsburg, N side of Rodebaugh Rd., New Albany Rd., Truro Twp., Reynoldsburg Quad., *McCormac 4410*.

8. †*Aster dumosus* L.

Bushy Aster, Long-stalked Aster

Syn.: *A. dumosus* L. var. *coridifolius* (Michx.) Torr. & A.Gray

REFERENCE: Selby & Craig 1890:11.

NOTE: No specimens seen from Franklin Co.; see Fisher 1988:96 (illus. p. 97).

9. †*Aster ericoides* L.

Wreath Aster, White Heath Aster, Squarrose White Aster

Phyllaries mucronate; heads many, small; bracts in inflorescence many, small. Sep-Oct. Syn.: *A. ericoides* L. var. *prostratus* (Kuntze) S.F.Blake, *A. ericoides* forma *prostratus* (Kuntze) Fernald, *A. ericoides* L. var. *villosus* Torr. & A.Gray, *A. multiflorus* Aiton

REFERENCES: Craig 1890:84 (sparingly on the island); Selby & Craig 1890:11; Werner 1893:93 (S of Cols., *Werner*); Fisher 1988:91 (illus. p. 93).  
HERBARIUM RECORDS: 1889—Neil's Run, Cols., *Craig*; 1890—Big Darby, *Selby*; Oct & 3 Oct 1891—Georgesville, *Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM); 24 Sep 1892—Georgesville, *Selby*.

10. *Aster pilosus* Willd.

Awl-Aster

Lower leaves soon deciduous, uppermost reduced to bracts in the inflorescence; phyllaries imbricate, margins of subulate green tips inrolled. Fields & waste place. Jul-Oct.

Two varieties are recognized:

var. *pilosus*

Stem and leaves sparsely to more often densely hirsute.

REFERENCE: Fisher 1988:84 (illus. p. 85).

HERBARIUM RECORDS: 1890—Central College, *Selby*; Sep 1890—*Selby*; 4 Sep 1890—Central College, *Selby*; 10 Oct 1891—Cols., *Werner* (ILL); 27 & 28 Sep 1894—Cols., *W. Kellerman*; 21 Sep 1897—Cols., *W. Kellerman*; 1 Oct 1942—Olentangy flood-plain, *Jacob*; 7 Sep 1982—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), open field, *Witsberger 857* (OWU); [date?—Highbanks Metro Park (Delaware Co.), *Morawetz*; 31 Jul 1990, Northmoor Park along Olentangy R. (E bank), Clinton Twp., *Lowden 4462*; 5 Sep 1991—N side of Morse Rd. just W of Stelzer Rd. jct., Blendon Twp., *Lowden 4789*.

var. *pringlei* (A.Gray) S.F.Blake

Stem and leaves nearly glabrous. Syn.: var. *demotus* S.F.Blake

HERBARIUM RECORD: 7 Oct 1893—Cols., *Werner* (CLM, OS).

NOTE: Not mapped for Franklin Co. by Fisher 1988:84. Perhaps *Aster tenuifolius* L. of Riddell 1834:155 (dry prairies) and Sullivant 1840:30 belongs here.

11. †*Aster oolentangiensis* Riddell

Prairie Heart-leaved Aster

Inflorescence open paniculate, branches many-bracted; only the lowermost leaf-blades cordate-based, upper ones tapering to petiole and becoming sessile. Sep-Nov. Syn.: *A. azureus* Lindl., *A. capillaceus* Burgess

REFERENCES: Riddell 1835:495 (Type locality, forests on the Olentangy R., near Worthington); Selby 1891a:111a; Selby 1891b:74 (prairie plants of the west here ... near Cols. ... on the E limits of their range); Fisher 1988:74 (illus. p. 75).

HERBARIUM RECORDS: 3 Oct 1890—Big Darby, *Selby*; 22 Nov 1890—*Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM, OS); 24 Sep 1892—*W. Kellerman*; 24 Sep 1892—Georgesville, *Werner* (CLM, OS); 24 Sep 1892—Georgesville, *Selby*.

12. *Aster shortii* Lindl.

Short's Aster, Midwestern Blue Heart-leaved Aster

Leaves somewhat reduced further up the stem; blades mostly cordate at base, nearly entire. Woods. Sep-Oct.

Syn.: *A. shortii* Hook.

REFERENCES: Riddell 1835:495 (Type locality, on hillsides and in ravines, Worthington); Sullivant 1840:30; Selby & Craig 1890:11; Selby 1891b:74 (prairie plants of the west here ... near Cols. ... on the E limits of their range); Fisher 1988:74 (illus. p. 75).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 24 Sep 1892—Georgesville, *Selby* & *Werner*; 7 Oct 1905—High Banks, *Fischer*; 10 Sep 1982—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), edge of forest, *Witsberger 858* (OWU); 22 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts 347* (OS, OWU).

13. *Aster cordifolius* L.

Blue Wood Aster, Common Blue Heart-leaved Aster

Cauline blades sharply serrate, petioles at most obscurely winged; blades hairy beneath; involucre bracts obtuse or acute, tips obscured by anthocyanin. Woods & clearings. Sep-Nov.

REFERENCES: Riddell 1834:155 (slaty ravines); Sullivant 1840:30; Craig 1890:53, 56, 84 (#184; sparingly in the woods and on the island, 13 Sep 1882; University Farm Sep & Oct 1887, 7 Nov 1888); Selby & Craig 1890:11; Fisher 1988:77 (illus. p. 78).

ASTER



HERBARIUM RECORDS: 1833, 1837 & 1838—Worthington, *J. Paddock Collection* (ILL); Sep, 9 & 25 Oct 1838—Worthington, *J. Paddock Collection* (ILL); Sep 1888—Cols., *Craig*; 4 Oct 1891—Westerville & Big Walnut, *Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM, OS); 26 Sep 1894—Cols., *W. Kellerman*; 4 Oct 1901—N Cols., *Eckman*; 7 Oct 1905—High Banks, *Fischer*; 10 Oct 1926—Blendon Twp. & near Alton, *Gordon*; 5 Nov 1942—Camp Wildwood, *Jacob*; 24 Feb 1948—N of Morse Rd. & Indianola Ave., *Beatley*; 20 Sep 1982—Blendon Woods, *Owens*; 29 Sep 1985—Highbanks Metro Park (Delaware Co.), edge of forest, *Witsberger 859* (OWU); 23 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts 356* (OS, OWU); 20 Oct 1990—Piedmont Rd. between N. High St. & Indianola Ave., NW Cols. Quad., *Cusick 29305*.

14. †*Aster sagittifolius* Willd.

Arrowleaf Aster

Stems and leaves mostly glabrous; involucre bracts acuminate or very acute, tips green, very narrow and elongate. Streambeds & woodlands. Sep-Oct. Syn.: *A. urophyllus* Lindl. in DC.

REFERENCES: Selby & Craig 1890:11; Kellerman & Werner 1893:229 (abundant all along the river; it must have been confounded with *Aster cordifolius* L., 5 Aug 1890); Jones 1943:87 (*Aster lindleyanus* Torr. & A.Gray); Fisher 1988:74 (illus. p. 76).

HERBARIUM RECORDS: [ca. 1834]—Cols., *Lapham* (CINC); 9 Oct 1890—Cols., *Bogue*; 22 Sep 1892—OSU Campus, Cols., *Werner* (BGSU, OS); 24 Sep 1892—Georgesville, *Werner* (BGSU); 24 Sep 1892—Georgesville, *Werner & Selby*; 24 Sep 1892—Big Darby, *Selby*; 20 Sep 1982—Blendon Woods, *Owens*; 10 Oct 1987—Highbanks Metro Park (Delaware Co.), field edge, *Morawetz* (OS, OWU); 7 Sep 1991—Antrim Lake, woodland, Sharon Twp., *Lowden 4798*; 17 Sep 1991—E bank of Big Darby Creek, just N of Rt. 40, Prairie Twp., *Lowden 4850*.

NOTE: Perhaps *Aster ciliolatus* Lindl. (*Aster lindleyanus* Torr. & A.Gray) of Selby & Craig 1890:11 and Selby 1891a:111a (#353 Re-collected) belongs here.

15. †*Aster drummondii* Lindl.

Drummond's Aster, Hairy Heart-leaved Aster

Leaves broadly toothed, petioles obviously winged; phyllaries attenuate, often recurved. Sep. Syn.: *A. sagittifolius* Wedem. var. *drummondii* (Lindl.) Shinnery

REFERENCES: Werner 1893:93 (Georgesville, *Werner*); Jones 1943:87; McCance 1984:A-339; Fisher 1988:77 (illus. p. 78).

HERBARIUM RECORDS: 24 Sep 1892—Georgesville, *Werner*; 26 Sep 1931—S of O'Shaughnessy Dam, *E. Thomas*.

16. *Aster undalatus* L.

Clasping Heart-leaved Aster

Basal and lower cauline leaves long-petiolate, auriculate-clasping; mid-cauline leaves with winged petioles.

REFERENCE: Riddell 1834:155 (*Aster diversifolius*; slaty ravines).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:72 (illus. p. 73).

17. *Aster patens* Aiton var. *phlogifolius* (Muhl.) Nees

Clasping Aster

Leaves sessile, broadly ovate to oblong, entire; leaf blades strongly cordate-clasping at base; bracts glandular. Oct.

REFERENCES: Selby & Craig 1890:11; Fisher 1988:79 (illus. p. 80).

HERBARIUM RECORDS: 4 Oct 1890—Central College, *E. V. Wilcox*; 10 Oct 1891—Georgesville, *Werner* (BGSU).

18. *Aster novae-angliae* L.

New England Aster

Stems strongly hirsute-glandular above; leaves lanceolate, entire, sessile, bases auriculate-clasping; bracts glandular-pubescent; rays usually more than 45, bright reddish-purple or rosy. Moist open or wooded areas. Sep-Oct.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:30; Craig 1890:53, 84 (#183; common along the brook S of the lake, 9 Sep 1882, 12 Sep 1888; University Farm Sep & Oct 1887); Selby & Craig 1890:11; King 1981:119 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie); Fisher 1988:79 (illus. p. 80).

HERBARIUM RECORDS: 22 Sep 1882—Olentangy R., OSU, *Devol*; Sep 1888—Cols., *Craig*; 13 Sep 1889—Cols., *Weed*; 1890—Cols., *Selby*; 24 Sep 1890—Cols., *E. V. Wilcox*; 23 Sep 1934—Indian Springs, Cols., *J. H. Schaffner*; 10 Oct 1942—*Jacob*; 7 Sep 1982—Blendon Woods, *Owens*; [date?]-Highbanks Metro Park, *Morawetz*; 12 Sep 1991—Hoover Dam Park, W of Cubbage Rd. at jct. with Walnut St., Blendon Twp., *Lowden 4841*.

19. *Aster macrophyllus* L.

Large-leaved Aster

Inflorescence corymbiform; phyllaries and peduncles glandular; lower leaves with cordate bases and petioles. Woods. Aug. Syn.: *Biotia macrophylla* DC., *Eurybia macrophylla* Cass.

REFERENCES: Riddell 1834:155 (slaty ravines); Riddell 1835:55 (Worthington; roadsides, slaty ravines, dense & shady woods); Sullivant 1840:30, 57; Selby & Craig 1890:11; Fisher 1988:71 (illus. p. 70).

HERBARIUM RECORD: 16 Aug 1987—Highbanks Metro Park (Delaware Co.), *Higgins 25*.

20. *Aster schreberi* Nees

Aster

Leaf sinus rectangular; phyllaries aglandular. Woods. Aug.

REFERENCE: Fisher 1988:72 (illus. p. 70).

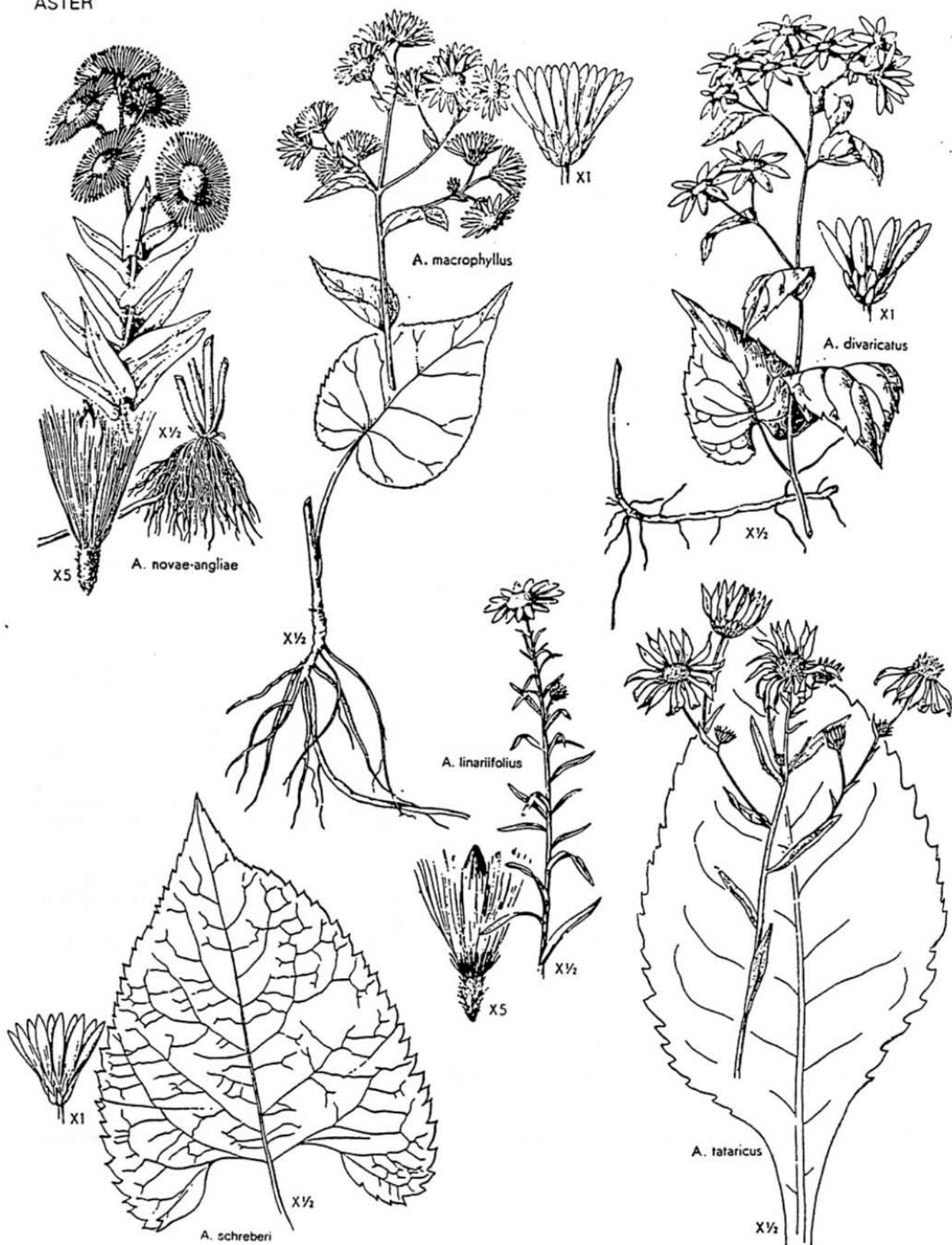
HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 16 Aug 1987—Highbanks Metro Park (Delaware Co.), *Higgins 25* (OS, OWU).

21. *Aster divaricatus* L.

Common White Heart-leaved Aster

Plants without glands; leaves glabrous or sparsely hairy; lower leaves cordate-ovate, coarsely toothed, acuminate, sinus cordate or rounded. Aug.

ASTER



REFERENCES: Selby & Craig 1890:11 (*Aster corymbosus* Aiton); Fisher 1988:72 (illus. p. 73).  
HERBARIUM RECORD: Aug 1890—Cols., *Werner* (CLM).

22. \**Aster tataricus* L.f.

Tatarian Aster

Cultivated Escape (native of S Siberia)

Lower leaves long-petiolate, blades large, elliptic, coarsely toothed; middle and upper leaves smaller, somewhat sessile and mostly entire; inflorescence corymbiform. Oct.

HERBARIUM RECORD: 6 Oct 1900—Cols., *J. H. Schaffner*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:67.

23. †*Aster linariifolius* L.

Stiff-leaf Aster

Blades linear, 1-nerved; stem and disk-flowers red; rays violet, rarely white; achene with long white hairs.

REFERENCES: Riddell 1834:155 (dry prairies); Riddell 1835:53 (Duncan's Plains, dry prairies & rocky situations).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:89 (illus. p. 88).

33. ERIGERON L. Fleabane, Daisy

Heads 1 cm wide or more, radiate, disk-flowers numerous; phyllaries narrow, almost equal, or in several unequal series; receptacle flat or convex, naked; pappus capillary, sometimes lacking in ray-flowers, sometimes an additional row of shorter bristles or scales; disk-corollas yellow, ray-corollas much longer than disk-corollas, white, pink, or blue.

a Cauline blades sessile or clasping; stem soft; pappus of ray-flowers elongate, capillary.

b Ray-flowers fewer than 100, ligules 1 mm wide or more, usually blue or white; heads few or solitary, 2.5 cm wide or more. 1. *E. pulchellus*

b' Ray-flowers 100 or more, ligules 0.5 mm wide or less, pink to white; heads 1 to many, usually less than 2.5 cm wide. 2. *E. philadelphicus*

a' Cauline blades narrowed to base; stem firm; pappus of ray-flowers none or of short scales or bristles; rays usually white.

c Cauline blades linear to lanceolate, entire or slightly toothed, few; hairs of stem usually appressed; basal blades oblanceolate, not more than 2.5 cm wide, entire or toothed. 3. *E. strigosus*

c' Cauline blades lanceolate, many, all but the upper sharply toothed; hairs of stem, except near top, spreading; basal blades elliptic to subcircular, up to 6 cm wide. 4. *E. annuus*

1. *Erigeron pulchellus* Michx. var. *pulchellus*

Robin's Plantain

Stems and leaves hairy; ray flowers less than 100, blue. Woody streambanks. May.

REFERENCE: Fisher 1988:101 (illus. p. 102).

HERBARIUM RECORDS: 1840—Cols., *Sullivan*; 12 May 1894—Georgesville, *W. Kellerman*; 22 May 1899—Big Darby, *Selby*; 14 May 1992—Battelle-Darby Creek Metro Park, Cedar Ridge, Pleasant Twp., *Lowden 4935*.

2. *Erigeron philadelphicus* L.

Philadelphia Fleabane, Pink Fleabane

Cauline leaves clasping at base; heads few to many; ray flowers 100 or more, white to pink. Somewhat weedy of various habitats. Apr-Jun. Syn.: ? *E. bellidifolium* Muhl. (name misapplied)

REFERENCES: Riddell 1834:155 (& *Erigeron purpureum*); *Sullivan* 1840:31; *Craig* 1890:84 (*Erigeron philadelphicus*, rather common about the lake, 6 Jun 1882, 2 Jun 1884, 5 Jun 1887; *Erigeron bellidifolium*, common near the lake swamp, 14 May 1882, 4 Jun 1883, 8 May 1887, 6 Jun 1888); *Selby* & *Craig* 1890:11; *Kellerman* & *Werner* 1893:225 (*Erigeron bellidifolium*, this plant would hardly grow in such a place as the wet ground near the lake swamp ... it is undoubtedly the latter species [*Erigeron philadelphicus*] that was collected); Fisher 1988:101 (illus. p. 100).

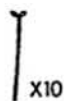
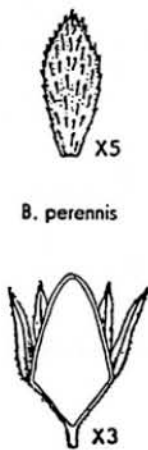
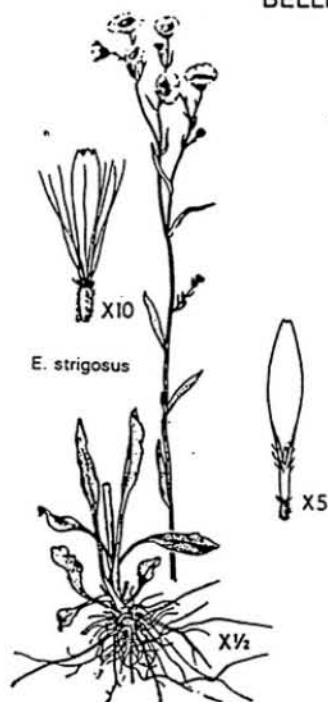
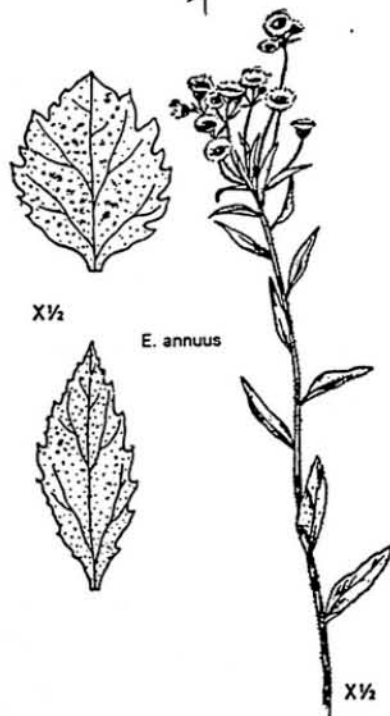
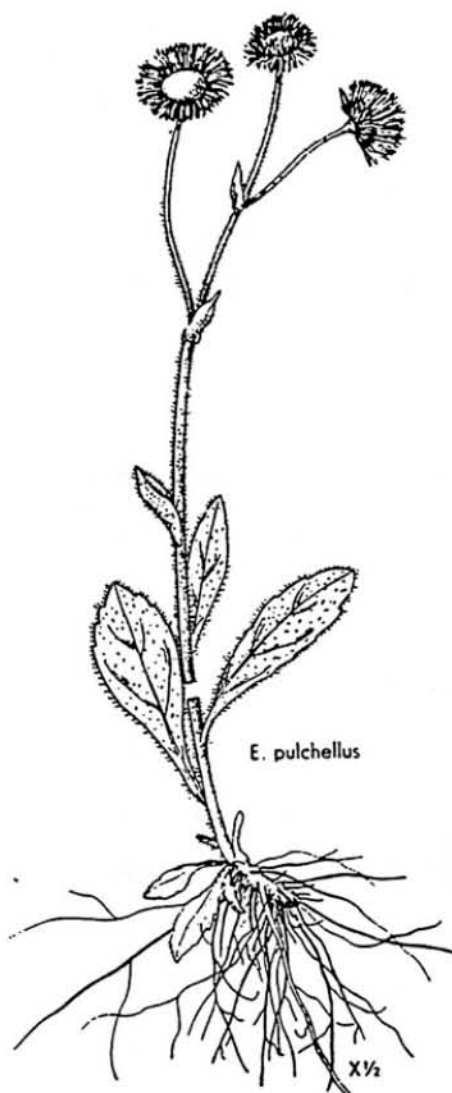
HERBARIUM RECORDS: Jun 1888—Cols., *Craig*; May or Jun 1890—Cols., *Selby*; 22 May 1895—Olentangy R., *Osburn*; [1896]—[*M. Wright*]; 25 May 1899—Olentangy Park, Cols., *Helfrich*; 28 Apr 1923—Westerville, wasteland, *Flick*; 15 May 1924—Westerville, hillside, *Rinehart*; Autumn 1947 & 1948—OSU Botanical Garden, *Beatley*; 19 May 1969—Park of Roses, Cols., *Wiley 21*; 7 May 1977—N side of 8th Ave., just E of Worthington Ave., [Cols.], *Swanson 28*; 15 May 1977—¼ mi. S of Trabue Rd. along the Scioto R., *Fazenbaker*; 10 May 1986—Highbanks Metro Park (Delaware Co.), edge of woods, *Witsberger 909* (OWU); 15 May 1986—OSU Oval, Cols., *Blanco*; 22 May 1986—OSU campus, E bank of Olentangy R., W of S end of Stadium, *Hollander 041*; 26 May 1986—Highbanks Metro Park (Delaware Co.), edge of woods, *Witsberger*; 25 May 1988—corner of Arcadia & N. High St., creek bed, Cols., *Kelly 29*; 26 May 1988—OSU campus, E bed of Main Library, *Gerberick 50*; 8 & 23 May 1989—Overbrook Dr. Ravine, just E of N. High St., Clinton Twp., Cols., *Lowden 4040* & *4090*; 19 May 1990—intersection of Blacklick Creek with Morse Rd., Jefferson Twp., just S of the Plain/Jefferson Twp. line, *Lowden 4314*.

3. *Erigeron strigosus* Muhl.

Daisy Fleabane, White-top, Rough Fleabane



ERIGERON  
CONYZA  
BELLIS



Cauline blades few, linear to lanceolate, entire to toothed; stem hairs short, mostly appressed. Weed of disturbed places. May-Jun & Aug-Nov. Syn.: *E. strigosum* L.

REFERENCES: Riddell 1834:155 (meadows); Sullivant 1840:31; Craig 1890:56, 84 (#194; sparingly near Woodward Ave. and elsewhere, 2 Jun 1883, 8 Jun 1884, 8 Jun 1887, 9 Jun 1888; University Farm 21 Nov 1888); Selby & Craig 1890:11; Fisher 1988:101 (illus. p. 100).  
HERBARIUM RECORDS: 7 Sep 1890—Lake Park, Selby; 27 May 1896—Clintonville, M. Wright; 4 Aug 1989 & 26 Jun 1990—along I-71 at Franklin/Pickaway Co. line, Pleasant Twp., W of Harrisburg, Lowden 4228 & 4417.

**4. *Erigeron annuus* (L.) Pers.**

Daisy Fleabane, White-top, White Weed, Tall Daisy

Cauline leaves many, broadly-lanceolate, sharp-toothed; stem hairs long, spreading. Weed of disturbed places.

May-Jul & Sep-Nov. Syn.: *E. annuus* Pers.

REFERENCES: Riddell 1834:155 (*Erigeron heterophyllum*, meadows); Craig 1890:53, 56, 84 (#193; grows near the lake and in fields, 5 Jun 1884, 8 Jun 1887, 9 Jun 1888; University Farm Sep & Oct 1887, 13, 21 & 23 Nov 1888); Selby & Craig 1890:11; Fisher 1988:99, 101 (illus. p. 100).  
HERBARIUM RECORDS: 2 Jul 1890—Fair Grounds, Cols., anonymous; 11 Jul 1892—Cols., Bogue; [1896]—[M. Wright]; Fall 1899—Cols., J. H. Schaffner; Summer 1938—OSU Botanical Garden, C. Jones; 27 May 1986—corner of Walhalla St. & High St., Cols., Di Sabato-Aust 51; 8 Jun 1986—Highbanks Metro Park (Delaware Co.), open field, Witsberger 917 (OS, OWU); 14 Jun 1989—behind B&Z Bldg., OSU campus, Lowden 4183; 19 Jul 1989—Antrim Park, Cols., Lowden 4211.

**34. CONYZA Less.**

Heads small, about 5 mm wide; ray-corollas equaling or slightly longer than disk-corollas; disk-flowers not more than about 20. (often incl. in *Erigeron*)

**1. *Conyza canadensis* (L.) Cronquist**

Common Horseweed, Fleabane, Butterweed, Mares-tails

Annual weed; stem tall, usually unbranched below inflorescence; rays white. Weed along roadsides, in waste places & fields. Aug-Nov. Syn.: *Erigeron canadensis* L.

REFERENCES: Riddell 1834:155; Sullivant 1840:31; Craig 1890:56, 84 (#195; this vile weed is entirely too common in our pastures and along road sides, 14 Aug 1882; University Farm 7 Nov 1888); Selby & Craig 1890:11.  
HERBARIUM RECORDS: 11 Aug 1890—OSU campus, near Cols., Hine; 12 Aug 1890—Cols., Hine; 16 Aug 1892—Cols., Bogue; 21 Sep 1895—S Cols., Osburn; 10 Sep 1901—Cols., Tyler & Jennings; 30 Aug 1982—Blendon Woods, Owens; [date?]-Highbanks Metro Park, Morawetz; 9 Aug 1990—E side of Rt. 104 just S of Hiner Rd. intersection, open field, Jackson Twp., Lowden 4530; 1991—OSU Campus at Neil Ave. & 11th Ave., Stuckey.

NOTE: Not mapped for Franklin Co. by Fisher 1988:99 (illus. p. 98).

**35. BELLIS L. European Daisy**

Small plant; leaves basal or nearly so; heads radiate; one per scape; phyllaries in 1 or 2 series, equal; receptacle naked, conic; disk flowers bisporangiate, corollas yellow; ray flowers carpellate, corollas white or pink; pappus none.

**1. \**Bellis perennis* L.**

European Daisy, English Daisy

Adventive (introduced from N Europe)

Lawns or waste places. Apr-Jun.

REFERENCE: Fisher 1988:65 (illus. p. 66).

HERBARIUM RECORDS: 26 May 1919—Cols., Waller; 3 Jun 1931—Cols., E. Thomas; Summer 1934—Cols., Wagner; 17 May 1964—Cols., 224 W. Tenth Ave., Cusick; Apr 1969—Cols., W. 10th Ave., Shives.

INULEAE, Elecampane Tribe

**36. INULA L. Elecampane**

Large, coarse; stem pubescent; blades large, alternate, elliptic or ovate, velvety beneath, cauline clasping, basal petioled; heads radiate, large; phyllaries in several series, outer herbaceous; receptacle flat or convex, naked; ray flowers many, carpellate, slender; disk flowers perfect; all corollas yellow; pappus capillary, scabrous.

**1. \**Inula helenium* L.**

Elecampane

Adventive (introduced from Europe)

Cultivated and escaped to disturbed places. Jul-Aug.

INULA  
GNAPHALIUM  
ANTENNARIA



*I. helenium*



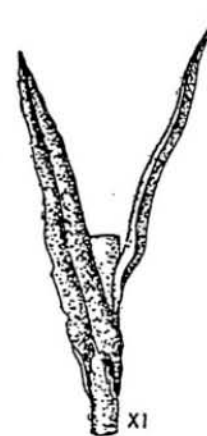
*G. uliginosum*



*G. obtusifolium*



*A. plantaginifolia*



*G. macounii*



*A. neglecta*



*G. macounii*

REFERENCES: Riddell 1834:155; Sullivant 1840:32 (naturalized plants); Selby & Craig 1890:11 (introduced); Fisher 1988:110 (illus. p. 111).  
HERBARIUM RECORDS: 10 Aug 1890—Westerville, *E. V. Wilcox*; 1891—Selby; 12 Jul 1894—Alton, *W. Kellerman*.

### 37. GNAPHALIUM L. Cudweed

Woolly; leaves alternate, entire; heads discoid; phyllaries dry and scarious, white or colored, in several series; receptacle flat or convex; pappus capillary, bristles sometimes thickened at tip; outer flowers of head carpellate, corollas filiform; inner flowers bisporangiate, few corollas coarser.

- a Low, branching; involucre brown, 3-4 mm high; heads in many glomerules subtended and over-topped by leaves; phyllaries little imbricated. 1. *G. uliginosum*
- a' Erect; involucre 5 mm high or more; heads in corymbiform or paniculate clusters; phyllaries white or yellow, imbricated.
  - b Blades narrowed to base, not clasping, not decurrent. 2. *G. obtusifolium*
  - b' Blades clasping, decurrent on stem. 3. *G. macounii*

#### 1. *Gnaphalium uliginosum* L. Cudweed, Marsh Cudweed, Low Cudweed

Stems low, branched, white-woolly; leaves linear to oblanceolate, overtopping heads in glomerules of small clusters. Sep-Oct.

REFERENCES: Riddell 1834:155 (roadsides); Riddell 1835:53 (Worthington, roadsides & marshes); Fisher 1988:110 (illus. p. 109).

HERBARIUM RECORDS: Sep 1892—Cols., *Lageman*; 17 Oct 1991—Hoover Dam Park, along W border of reservoir just N of entrance off Cabbage Rd., Blendon Twp., *Lowden 4886*.

#### 2. *Gnaphalium obtusifolium* L. Fragrant Cudweed, Catfoot

Plants not dioecious; heads with outer flowers filiform and numerous, the coarser inner ones few and perfect; bracts yellow or whitish, more or less imbricate; leaves white-woolly beneath, margins revolute. Open fields & woodland borders. Aug-Oct. Syn.: *G. obtusifolium* L. var. *praecox* Fernald, *G. polycephalum* Michx.

REFERENCES: Riddell 1834:155; Fisher 1988:110 (illus. p. 109).

HERBARIUM RECORDS: 5 Sep 1890—Central College, *E. V. Wilcox*; Sep 1891—Cent. Coll. [Central College], *Selby*; 3 Oct 1891—Georgesville, *Selby*; 3 Sep 1892—Cols., *Bogue*; Fall 1899—Cols., *J. H. Schaffner* (just a leafy basal rosette); 31 Aug 1982—Blendon Woods, *Owens*; 6 Sep 1986—Highbanks Metro Park (Delaware Co.), *Witsberger 934* (OS, OWU).

NOTE: Sullivant 1840:31 and Selby & Craig 1890:11 reported on plants collected in adjacent counties. Riddell, Sullivant, and Selby & Craig called it *Gnaphalium polycephalum*. Obviously, there has been some confusion of this species with *Anaphalis margaritacea* (L.) Benth. & Hook., which is not found in Franklin Co. The latter species being nearly dioecious; bracts pearly-white, very imbricate; staminate and carpellate flowers coarser and tubular; styles bifid in carpellate flowers.

#### 3. †*Gnaphalium macounii* Greene Clammy Cudweed, Winged Cudweed

Leaves decurrent on stem. Sep. Syn.: *G. decurrens* Ives, *G. viscosum* Humb., Bonpl. & Kunth, misapplied

REFERENCES: Craig 1890:54, 84 (#196; University Farm Sep 1887; grows sparingly on the campus, E of the botanical laboratory); Selby & Craig 1890:11.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:110 (illus. p. 109). Maybe this species has been misidentified and is the similar *Gnaphalium obtusifolium*.

### 38. ANTENNARIA Gaertn. Pussytoes, Everlasting

Woolly; dioecious; with basal rosettes and stolons; heads discoid, solitary or in close clusters; phyllaries scarious, in several series, those of staminate heads with broad white petaloid tips; pappus capillary, in staminate flowers scanty, bristles often club-shaped, in carpellate flowers copious; receptacle naked, flat or convex.

- a Rosette leaves with only a midnerve, lateral nerves absent or evident only at base. 1. *A. neglecta*, stolons elongate, procumbent, leaves few and small, eventually with terminal rosettes, var. *neglecta*
- a' Rosette leaves with 3-7 nerves, involucre of carpellate heads 8 mm high or more. 2. *A. plantaginifolia*,
  - b Basal leaves and those of stolons bright green above and glabrous or nearly so from the first, var. *parlinii*
  - b' Basal leaves and those of stolons dull green and pubescent above, glabrate when old, var. *ambigens*

#### 1. *Antennaria neglecta* Greene Field Everlasting

Rosette leaves prominently 1-nerved, upper cauline leaves with flat or curled awn-like tip. Woods & open places. Apr-Jun.

REFERENCE: Fisher 1988:106 (illus. p. 105).

HERBARIUM RECORDS: Jun 1888—Cols., *Craig*; 28 Apr 1890—Neil's Run, near Cols., *H. Richardson*; 27 Apr 1895—Scioto R., *Osburn*; 23 Apr 1983—Blendon Woods, *Owens*; 13 Apr 1986—Highbanks Metro Park, *Morawetz*.

**2. *Antennaria plantaginifolia* (L.) Richardson** Plantain-leaved Everlasting, Parlin's Everlasting

Rosette leaves with 3-8 nerves. (Two vars. are considered in Franklin Co.: var. *parlinii* (Fernald) Cronquist, with basal leaves glabrous above & young stems glandular at summit, and var. *ambigens* (Greene) Cronquist, with basal leaves tomentose above and young stems usually glandless.) Open woods & other dry places. Apr-May. Syn.:

*A. parlinii* Fernald

REFERENCES: Riddell 1834:155 (*Gnaphalium plantagineum*); Sullivant 1840:31 (*Gnaphalium dioicum* L. var. *plantaginifolium* Michx.); Selby & Craig 1890:11; King 1981:119 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie; 8-Graessle Rd. Bluff Site).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; May 1889 or 1890—*Selby*; 22 May 1899—Big Darby, *Selby*; 21 Apr 190?—bank of Scioto R., *W. Kellerman*; 29 Apr 1961—Flint Ravine, *Cusick*; 21 Apr 1979—Graessle Rd. at intersection of Rt. 665 about 1 mi. W of Darbydale, *Bayer & Stebbins*; 12 May 1979—Avis Rd., ½ mi. N of Morse Rd., along bank above Black Lick Creek, *Bayer & Stebbins*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:106 (illus. p. 107).

EUPATORIEAE, Boneset Tribe

39. EUPATORIUM L. Boneset, Thoroughwort

Leaves opposite or whorled; heads discoid, in a corymbiform cluster; phyllaries in 2-several series; receptacle flat, convex, or conic, naked; pappus capillary, usually scabrous; corollas white or whitish, blue, purple, or pink.

a Phyllaries in 2 or more series of different lengths.

b Leaves whorled, ovate to lanceolate; corollas pink-purple or rarely white.

c Inflorescence or its divisions flat-topped; heads of 8 or more flowers; corolla pink-purple. 1. *E. maculatum*

c' Inflorescence with rounded top; heads of 8 or fewer flowers.

d Stem usually solid, somewhat glaucous, nodes usually purple; corolla pale purple to white.

2. *E. purpureum*

d' Stem usually hollow, glaucous, purplish; corolla pink-purple. 3. *E. fistulosum*

b' Leaves opposite or alternate, rarely whorled; corollas white.

e At least the lower leaves with elongate slender petioles. 7. *E. serotinum*

e' Leaves connate-perfoliate, sessile, or short-petioled.

f Leaves connate-perfoliate, rugose-veiny beneath, lanceolate, long acuminate at tip; rarely, the truncate or rounded leaf-bases not joined. 8. *E. perfoliatum*

f' Leaves not connate-perfoliate.

g Blades tapering to base.

h Leaves often whorled, linear to lanceolate, entire to lacinate-toothed; conspicuous axillary fascicles present. 11. *E. hyssopifolium*

h' Leaves opposite, lance-elliptic, entire to serrate; without axillary fascicles; strongly 3-nerved. 10. *E. altissimum*

g' Blades with rounded or truncate bases, lanceolate, long-acuminate. 9. *E. sessilifolium*

a' Main phyllaries in 1 series of about the same length (there may be some shorter ones at base); leaves opposite.

i Receptacle conic; corollas blue or violet; phyllaries linear, pointed, well separated above base. 4. *E. coelestinum*

i' Receptacle flat; corollas white; bracts not so slender.

j Leaves small, blades 3-8 cm long, firm, base rounded to truncate, tip acute or obtuse, crenate or crenate-serrate, petioles mostly less than 1.5 cm long; rare. 5. *E. aromaticum*

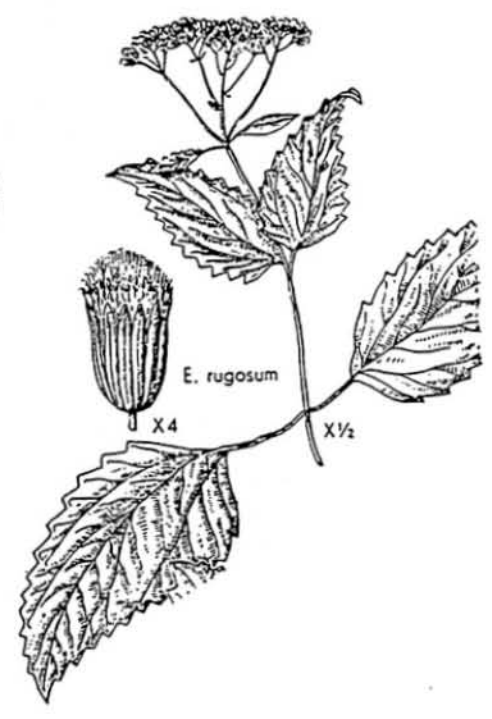
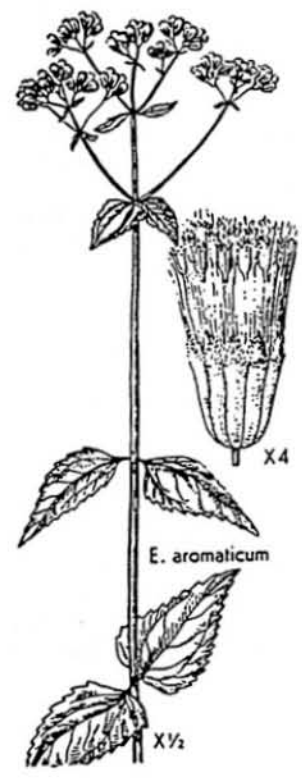
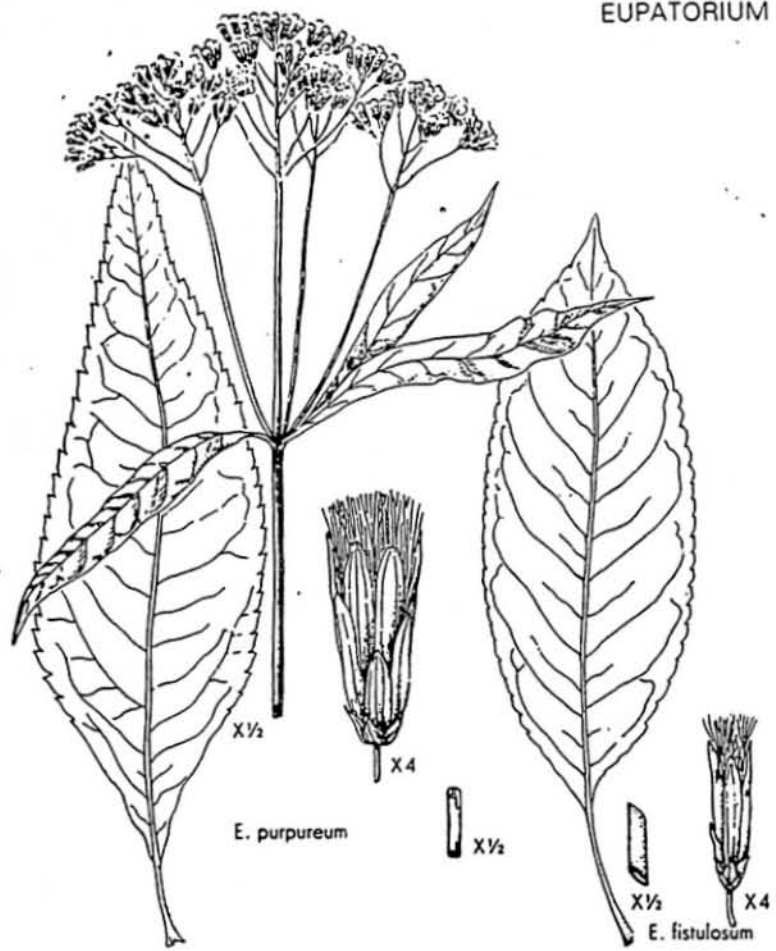
j' Leaves larger, membranous, base rounded to acute, tip usually acuminate, serrate, petioles usually more than 1.5 cm long; common and abundant. 6. *E. rugosum*

1. *Eupatorium maculatum* L.

Spotted Joe-Pye Weed

Stems glaucous, often dotted with purple; leaves whorled, 4 or 5 at a node; inflorescence a flat-topped corymb; heads with more than 8 flowers. Moist places. Aug.

EUPATORIUM



REFERENCE: Riddell 1834:155 (bottomland).

HERBARIUM RECORDS: 13 Aug 1898—Cols., *W. Kellerman*; 1 Aug 1982—Blendon Woods, *Owens*; Summer 1988—OSU campus, along Olentangy R., Cols., *Delong* & along Big Darby Creek between I-70 and Little Darby Creek, Galloway Quad., *Delong*; 22 Aug 1990—Quarry Place, E side of Scioto R. off Rt. 33 just S of Rt. 161, Perry Twp., *Lowden 4560*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:23 (illus. p. 24).

**2. *Eupatorium purpureum* L.**

Trumpet-weed, Purple-node Joe-Pye Weed

Stems purplish at nodes, pith solid; inflorescence convex or rounded; heads with fewer than 8 flowers. Jul-Aug.

Syn.: *E. falcatum* Michx., *E. trifoliatum* L.

REFERENCES: Riddell 1834:155 (bottomland; & *Eupatorium verticillatum*, open woods); Sullivant 1840:31; Craig 1890:83 (rare; one is occasionally seen in the jungle of weeds around the island, 10 Aug 1882, 24 Jul 1887); Selby & Craig 1890:11; Fisher 1988:23 (illus. p. 25).

HERBARIUM RECORDS: Aug 1888—Cols., *Craig*; 1892—Cols., *Bogue*; 23 Jul 1982—Blendon Woods, *Owens*.

**3. *Eupatorium fistulosum* Barratt**

Hollow-stemmed Joe-Pye Weed

Stems usually glaucous, hollow, purple throughout; inflorescence convex or rounded; heads with fewer than 8 flowers. Bottomlands. Aug.

HERBARIUM RECORD: 1 Aug 1990—N side of Central College Rd., jct. of Big Walnut Creek, roadside, *Lowden 4499*.

NOTE: *Eupatorium maculatum-fistulosum-purpureum* complex, OS specimens on loan to Cronquist (NY). Stems hollow, purple, inflorescence more commonly with 7 flowers.

NOTE: Not mapped for Franklin Co. by Fisher 1988:23 (illus. p. 25).

**4. *Eupatorium coelestinum* L.**

Mistflower

Leaves opposite, petiolate, usually crenate, deltoid or ovate; phyllaries linear, long-pointed, well separated above; flowers blue or violet, turning purple. Woodlands and streambanks. Sep. Syn.: *Conoclinium coelestinum* DC.

REFERENCES: Sullivant 1840:31, 58 (very rare here; collected by L. Starling, Jr., borders of prairie, 3 mi. S of Cols.); Selby & Craig 1890:11.

HERBARIUM RECORDS: 11 Sep 1971—W of OSU campus along Olentangy R. near tower dorms and Battelle, just S of Dodridge St. Bridge, Cols., *Roberts 2044* (KE, OS); 22 Sep 1982—Blendon Woods, along refuge fence, *Owens*; 23 Sep 1991—Scioto R., weedy bank, just N of I-270, Hamilton Twp., SW Cols. Quad., *McCormac 4342*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:31 (illus. p. 32).

**5. †*Eupatorium aromaticum* L.**

Small-leaved White Snakeroot

Leaves short-petiolate; petioles less than 1.5 cm long. Syn.: *Ageratina aromatica* (L.) Spach

REFERENCE: Selby 1891a:111a.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:33 (illus. p. 34).

**6. *Eupatorium rugosum* Houtt.**

White Snakeroot

Poisonous; leaves long-petiolate; petioles usually longer than 1.5 cm long. Woodlands. Jul-Oct. Syn.:

*E. ageratoides* L., *E. urticaefolium* Reichard

REFERENCES: Riddell 1834:155 (open woods); Sullivant 1840:31, 58; Craig 1890:53, 83 (#179; abundant in shady places, in the woods, near the lake, and on the island, 11 Aug 1882, 27 Aug 1887, 28 Aug 1888; University Farm Sep & Oct 1887); Selby & Craig 1890:11; Fisher 1988:33 (illus. p. 34).

HERBARIUM RECORDS: 12 Aug 1882—OSU, Olentangy R., Cols., *W. Green*; 1888—Neil's Run, Cols., *Selby*; Aug 1890—OSU campus, near Cols., *E. V. Wilcox*; 15 Aug 1890—University Woods, Cols., *Hine*; 14 Sep 1895—Blendon, *Osborn*; 29 Sep 1973—RR yards along Scioto R., at Grandview Ave. exit, Cols., *Roberts 4286*; 19 Sep 1980—"Trobus" [Trabue] Rd. & the Scioto R., Upper Arlington, *Doskotch*; 6 Sep 1986—Highbanks Metro Park (Delaware Co.), *Higgins*; 22 Sep 1986—Highbanks Metro Park (Delaware Co.), *Watts 348* (OS, OWU); 28 Aug 1989—Battelle Darby Creek Metro Park, along Little Darby Creek, Pleasant Twp., *Lowden 4309*; 16 Jul 1990—Whetstone Park of Roses off N. High St. at Blenheim Bus Turn around, Cinton Twp., *Lowden 4453*; 10 Sep 1991—Big Darby Creek off Rt. 40, Prairie Twp., *Lowden 4823*.

**7. †*Eupatorium serotinum* Michx.**

Late-flowering Thoroughwort

Leaves lanceolate, coarsely serrate; inflorescence much-branched, wide; flowers white. Oct.

REFERENCE: Fisher 1988:31, 33 (illus. p. 32).

HERBARIUM RECORD: Oct 1890—Sells Bros. Circus Grounds, *E. M. Wilcox*.

**8. *Eupatorium perfoliatum* L.**

Common Boneset

Leaves opposite, conspicuously connate-perfoliate; flowers white. Open wet ground along streams & rivers. Jul-Oct.

REFERENCES: Riddell 1834:155; Sullivant 1840:31; Craig 1890:53, 83 (#178; common in moist places, along the brook E of the lake, and near the island, 9 Aug 1882, 22 Jul 1887); Selby & Craig 1890:11; Fisher 1988:27 (illus. p. 26).

HERBARIUM RECORDS: 10 Aug 1882—Olentangy R. near OSU, Cols., *Devol*; Aug 1890—Big Walnut, Cols., *Selby*; 15 Aug 1890—O.A.E.S., Cols., *Hine*; 5 Aug 1982—Blendon Woods, *Owens*; Summer 1988—OSU campus, along the Olentangy R., Cols., *Delong* & along Big Darby Creek between I-70 and Little Darby Creek, Galloway Quad., *Delong*; 28 Aug 1989—Battelle Darby Creek Metro Park, along Little Darby Creek, Pleasant

EUPATORIUM





Twp., *Lowden 4299*; 8 Aug 1990—Rt. 71, 91-92 signs coming NE on Rt. 71, near Harrisburg, Pleasant Twp., *Lowden 4524*; 13 Oct 1991—Olentangy R., mudflat N of Lane Ave. bridge, S of Fawcett Center, Clinton Twp., *Lowden 4880*.

9. *Eupatorium sessilifolium* L.

Upland Boneset

Leaves opposite; blades sessile, bases rounded, tips long-acuminate; phyllaries blunt. Open woodlands and dry fields. Aug-Oct.

REFERENCES: Sullivant 1840:31; Craig 1890:83 (very rare, 19 Aug 1882, Mr Green found a specimen in 1885); Selby & Craig 1890:11; Fisher 1988:27 (illus. p. 29).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 19 Aug 1882—Olentangy R., N of Cols., *W. Green*; Aug 1888—Cols., *Craig*; Aug 1890—OSU campus, near Cols., *E. V. Wilcox*; 3 Oct 1891—Georgesville, Cols., *Selby*; 20 Aug 1893—Clintonville, near Cols., *E. M. Wilcox*; 1 Aug 1990—E side of Hoover Dam Park, hilly open woody area, W of Cabbage Rd. & S of Walnut St., *Lowden 4487*; 3 Sep 1992—W side of Cabbage Rd., rare in dry openings in brushy field, ½ mi. S of Walnut St., Blendon Twp., New Albany Quad., *McCormac 4903*.

10. *Eupatorium altissimum* L.

Boneset, Tall Thoroughwort

Leaves opposite, strongly 3-nerved, glandular-punctate; phyllaries rounded; flowers white. Woods, thickets & clearings. Aug-Oct. Syn.: *Ageratina altissimum* (L.) King & Rob.

REFERENCES: Selby 1891a:111a; King 1981:119 (Pleasant Twp: 7-Georgesville RR Site; 8-Graessle Rd. Bluff Site); Fisher 1988:27 (illus. p. 28).

HERBARIUM RECORDS: 3 Oct 1891—Georgesville, *Selby*; 3 & 10 Oct 1891—Georgesville, *Werner* (CLM); 29 Aug 1892—Franklin Co., *Bogue*; Sep 1892—Georgesville, *Werner* (CLM); 24 Sep 1892—Georgesville, *Werner*; Sep 1895—Franklin Ave., near Cols., *E. M. Wilcox*; 11 Sep 1898—Cols., *W. Kellerman*; 20 Aug 1899—Arlington, *Selby*; 18 Aug 1929—by "Derby" [Darby Creek], *Gordon*; 19 Sep 1980—Trabue Rd. & Scioto R. [Upper Arlington], *Doskotch*; 8 Sep 1991—Rt. 315 going S, Goodale St. Exit, Franklin Twp., Cols., *Lowden 4804*.

11. †*Eupatorium hyssopifolium* L. var. *laciniatum* A.Gray

Hyssop Thoroughwort

Leaves whorled or opposite; blades linear or linear-lanceolate, entire to lacinate-toothed; axillary fascicles conspicuous; flowers white. Open places. Aug. Syn.: *E. torreyanum* Short

REFERENCES: McCance 1984:A-351; Fisher 1988:22-23 (illus. p. 24).

HERBARIUM RECORDS: 17 Aug 1979—RR bed behind COTA bus lot, Cleveland Ave. at 1st Ave., Cols., *W. Carr 2033*; 18 Aug 1979—weedy slope behind COTA bus lot, SE corner of 1st Ave. & Cleveland Ave., Cols., *W. Carr 2040* (KE).

40. KUHNIA L. False Boneset

1. *Kuhnia eupatorioides* L.

False Boneset

Leaves alternate to opposite, linear to ovate, gland-dotted beneath; heads discoid; phyllaries in several series; receptacle naked, flat or nearly so; flowers bisporangiate; corollas cream-color; pappus bristles plumose, brown. Aug-Oct. Syn.: *Brickellia eupatorioides* (L.) Shinnars

REFERENCES: Selby & Craig 1890:11; Fisher 1988:36 (illus. p. 35).

Two varieties are recognized:

†var. *eupatorioides*

Plants slightly hairy; leaves hardly toothed.

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; 21 Aug 1891—Georgesville, *Werner*; 16 Sep 1891—Big Darby, *Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM, OS); 31 Oct 1891—Georgesville, *Selby*; Sep 1895—Georgesville, *E. M. Wilcox*.

†var. *corymbulosa* Torr. & A.Gray

Stem and leaves very hairy; leaf blades definitely toothed.

HERBARIUM RECORDS: 29 Aug 1891—Georgesville, *Werner* (CLM); 29 Aug 1892—Georgesville, *Werner & Bogue*.

41. LIATRIS Schreb. Blazing-star

Leaves alternate, often dotted, entire, narrow; heads discoid, in spikes or racemes; phyllaries in several series; receptacle naked, flat; flowers perfect; pappus of barbellate or plumose bristles; corollas pink-purple, sometimes white.

a Pappus barbellate, branches 0.1-0.4 mm long.

b Heads cylindrical to campanulate, mostly with fewer than 18 flowers; spike crowded; corolla-tube glabrous or nearly so within.

c Phyllaries obtuse at tip, appressed; stem in inflorescence glabrous or nearly so. 4. *L. spicata*

c' Phyllaries acute, tips spreading; stem in inflorescence pubescent with long hairs. 5. *L. pycnostachya*

b' Heads subglobose, usually more than 18-flowered, not crowded; corolla-tube hairy within; phyllaries wide or with roundish tips.

KUHNIA  
LIATRIS



- d Phyllaries with wide scarious lacinate margins, often purple, glabrous. 3. *L. aspera*
- d' Phyllaries without, or with only a narrow, scarious margin, finely pubescent or ciliate.
- e Flowers mostly 25-80 per head. 1. *L. scariosa*
- e' Flowers mostly 14-24 per head. 2. *L. squarrolosa*
- a' Pappus plumose, branches 0.5-1 mm long.
- f Corolla-lobes glabrous; flowers 4-6 per head. 8. *L. punctata*
- f' Corolla-lobes coarsely hairy within; flowers more than 10 per head, rarely less than 6.
- g Phyllaries acute, the median ones with spreading or recurved tips; heads 5-12-flowered. 7. *L. squarrosa*
- g' Phyllaries rounded, mucronate, appressed; heads 10-35-flowered. 6. *L. cylindracea*

1. *Liatris scariosa* (L.) Willd.

Northern Blazing-star

Phyllaries broadly rounded, margins of inner ones more scarious and erose; heads with more than 25 flowers; pappus barbellate. Prairies & other dry places. Sep-Oct.

REFERENCES: Riddell 1834:155 (dry prairies); Selby 1891a:111a; Fisher 1988:37 (illus. p. 39).

HERBARIUM RECORDS: 16 Sep 1891—Big Darby, Selby; 3 Oct 1891—Big Darby R., Selby; 24 Sep 1892—Georgesville, Werner (CLM, OS); 13 Oct 1929—"Red Hills" region on Bedford Shale, Central College, Gordon & Chapman.

2. †*Liatris squarrolosa* Michx.

Southern Blazing-star

Syn.: *L. scabra* (Greene) K.Schum.

REFERENCE: Roberts & Cooperrider 1982:69 (*L. scabra*).

NOTE: No specimens seen from Franklin Co.; see Fisher 1988:36 ("The few specimens I have examined that approach *L. scabra* may be hybrids, either with *L. aspera* or with another species"). See note under *Liatris scariosa*. Specimens cited under *Liatris scariosa* were considered by Roberts & Cooperrider to be *L. scabra*.

3. †*Liatris aspera* Michx.

Lacerate Blazing-star

Middle phyllaries with wide, uneven, erose to lacerate scarious margins; pappus barbellate.

REFERENCE: King 1981:120 (Rough Blazing-star, Pleasant Twp.: 8-Graessle Rd. Bluff Site).

HERBARIUM RECORD: 1840—Cols., Sullivant.

NOTE: Not mapped for Franklin Co. by Fisher 1988:37 (illus. p. 39).

4. *Liatris spicata* (L.) Willd.

Sessile Blazing-star

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:32; Selby & Craig 1890:11; Selby 1892a:110 (under *Liatris cylindracea* Michx., no specimens of *Liatris spicata* have come to hand).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:37.

5. †*Liatris pycnostachya* Michx.

Thick-spike Blazing-star

Inflorescence densely spicate; heads with less than 18 flowers; phyllaries acuminate, tips spreading to recurved; pappus barbellate. Dry open sites. Aug-Oct.

HERBARIUM RECORDS: Aug 1982—opening in brushy field, E side of Hoover Reservoir, 0.15 mi. W of Cabbage Rd. & ½ mi. N of Central College Rd., Blendon Twp., New Albany Quad., Cusick 21,923; 6 Oct 1991—Hoover Dam Park, N of entrance off Cabbage Rd., open dry prairie area, Blendon Twp., Lowden 4870; 3 Sep 1992—W side of Cabbage Rd., rare in dry openings in brushy field, approx. ½ mi. S of Walnut St., Blendon Twp., New Albany Quad., McCormac 4906.

NOTE: Not mapped for Franklin Co. by Fisher 1988:37 (illus. p. 38).

6. †*Liatris cylindracea* Michx.

Slender Blazing-star, Few-headed Blazing-star

Phyllaries rounded, mucronate, appressed; corolla lobes hairy within; pappus plumose. Dry open sites. Jul-Oct.

REFERENCES: Selby 1892a:110 (Georgesville, Selby. No specimens of *Liatris spicata* have come to hand); Jones 1943:98; Roberts & Cooperrider 1982:69; McCance 1984:A-359; Fisher 1988:41 (illus. p. 40).

HERBARIUM RECORDS: 3 Oct 1891—Georgesville, Selby; 15 Jul 1892—Georgesville, Werner; Aug 1892—Georgesville, Werner (CLM); 18 Aug 1892—Werner; 29 Aug 1892—Bogue; 29 Aug 1892—Georgesville, Werner.

7. †*Liatris squarrosa* (L.) Michx. var. *squarrosa*

Scaly Blazing-star, Plains Blazing-star

Phyllaries acute, middle ones spreading; corolla lobes hairy within; pappus plumose. Syn.: *L. squarrosa* Willd.

REFERENCES: Riddell 1834:155 (dry prairies); Sullivant 1840:32; Selby & Craig 1890:11; King 1981:120 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie, 8-Graessle Rd. Bluff Site); Roberts & Cooperrider 1982:69 (occurring in openings and prairies); ODNR-DNAP 1996.

HERBARIUM RECORD: 1840—Cols., Sullivant.

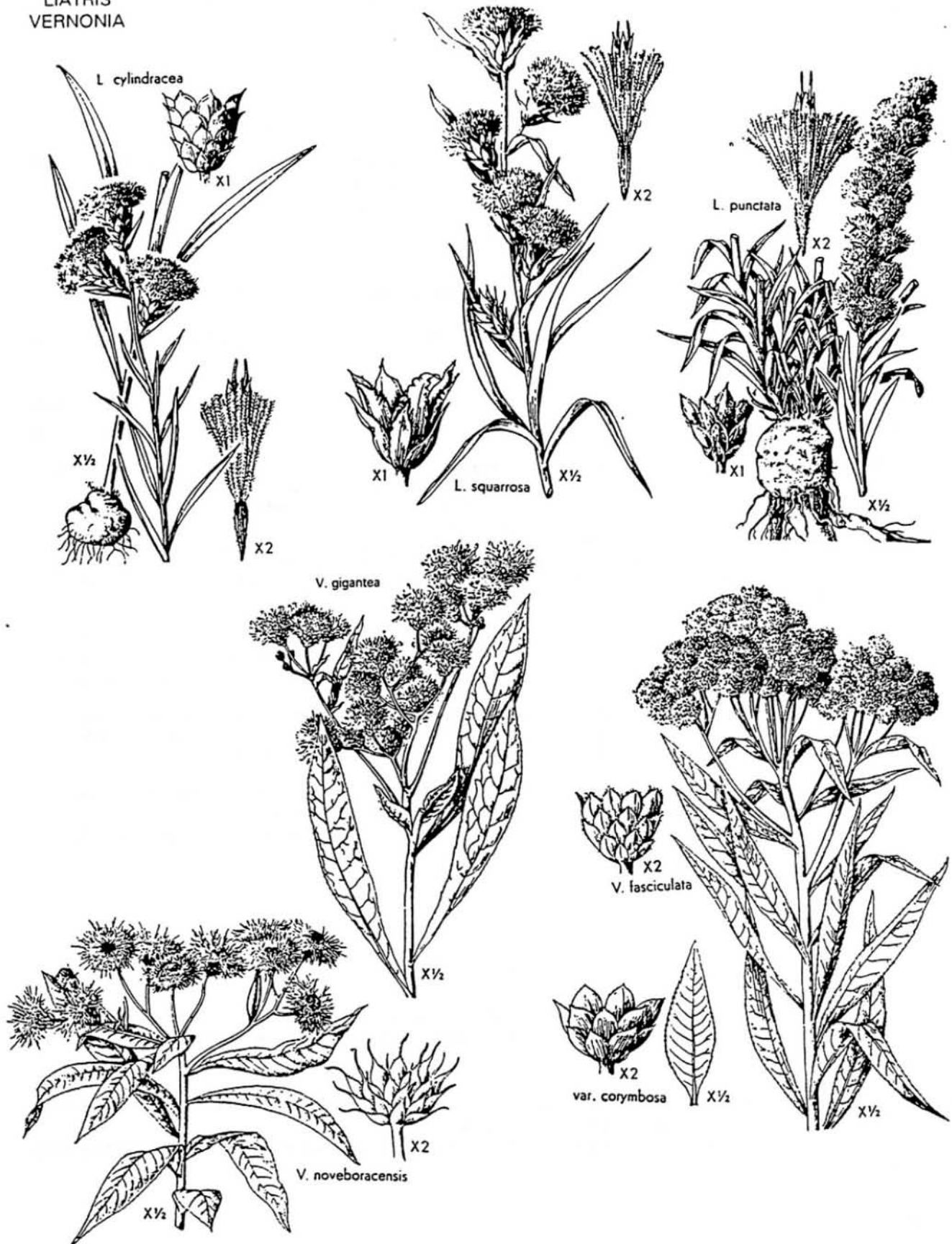
NOTE: Not mapped for Franklin Co. by Fisher 1988:41 (illus. p. 39).

8. \**Liatris punctata* Hook.

Dotted Blazing-star

Adventive (native to W U.S.)

LIATRIS  
VERNONIA



Leaves punctate, corolla lobes glabrous within; heads 4-6 flowered; pappus plumose. Oct.  
REFERENCE: Fisher 1988:41 (merely a transient based on Long's report (1959) of "a single 1903 collection from Franklin Co.").  
HERBARIUM RECORD: 3 Oct 1903—Clintonville, a waif by the roadside, *J. H. Schaffner*.

VERNONIEAE, Ironweed Tribe

42. *VERNONIA* Schreb. Ironweed

Leaves alternate, lanceolate, serrate; phyllaries in several series; receptacle flat or convex, naked; heads discoid, in corymbiform clusters; flowers perfect; pappus of 2 series, the inner long, capillary, the outer of short scales or bristles; corolla dark purple, rarely white.

- a Phyllaries with long threadlike tips. 1. *V. noveboracensis*  
a' Phyllaries without long threadlike tips, obtuse to acuminate.  
b Heads not crowded in the inflorescence, branches spreading; stem and leaves puberulent; blades little dotted beneath. 2. *V. gigantea*  
b' Heads crowded in the inflorescence, branches erect; stem and leaves glabrous; blades dotted beneath.  
3. *V. fasciculata*

1. †*Vernonia noveboracensis* (L.) Michx. New York Ironweed  
Tips of phyllaries threadlike. Syn.: *V. noveboracensis* Willd., *V. noveboracensis* Willd. var. *latifolia* A.Gray, *V. praealta* Willd.

REFERENCES: Riddell 1834:155 (*Vernonia praealta*, bottomland); Sullivant 1840:33 (*Vernonia praealta* Willd.); Craig 1890:53, 83 (#175; common in low moist grounds and along fence rows; in pastures preferring a clay soil; abundant on the hillside S of the lake, 9 Aug 1882, 24 Jul 1887; University Farm Sep & Oct 1887); Selby & Craig 1890:12; Kellerman & Werner 1893:225 (*Vernonia noveboracensis* Willd. should read *Vernonia altissima* Nutt.; the former ... has not been observed on the grounds nor in Franklin Co.).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:17 (illus. p. 17). Roberts & Cooperrider 1982:81 treated as an "exclusion" stating the following: "Weishaupt (1972) and Cronquist (1952) listed the species for Ohio. It occurs in adjacent Kentucky and Pennsylvania, but not Ohio. Material from SE Ohio previously called by this name is actually the variable *Vernonia gigantea* (Jones, 1972). We know of no specimens."

2. *Vernonia gigantea* (Walter) Trel. Tall Ironweed

Stems and leaves puberulent; branches of inflorescence spreading. Moist fields. Aug-Oct. Syn.: *V. altissima* Nutt.  
REFERENCES: Selby & Craig 1890:12; Kellerman & Werner 1893:225 (*Vernonia noveboracensis* Willd. should read *Vernonia altissima* Nutt.; the former ... has not been observed on the grounds nor in Franklin Co.); Fisher 1988:19 (illus. p. 20).

HERBARIUM RECORDS: 4 Sep 1882—University Farm, Cols., *W. Green*; Aug 1888—Cols., *Craig*; 1891 & Oct 1891—Georgesville, *Selby*; 16 Aug 1892—Cols., *Bogue*; 21 Sep 1895—S Cols., *Osburn*; 20 Aug 1899—Scioto R., *Selby*; 15 Oct 1900—OSU Farm, *Miskiui*; [date?]-Highbanks Metro Park, *Morawetz*; 5 Aug 1989—Godown Rd. between Commerce Pl. & Le Anne Marie Circle, Perry Twp., *Lowden 4252*.

3. †*Vernonia fasciculata* Michx. var. *corymbosa* (Schwein.) B.G.Schub. Prairie, Western or Smooth Ironweed  
Stems and leaves glabrous; blades punctate beneath. Syn.: *V. corymbosa* Schwein.

REFERENCES: Riddell 1834:155 (dry prairies); Jones 1943:107; Roberts & Cooperrider 1982:70; McCance 1984:A-367; Fisher 1988:19 (illus. p. 18).

NOTE: No specimens seen from Franklin Co.

CYNAREAE, Thistle Tribe

43. *ARCTIUM* L. Burdock

Large, coarse; leaves alternate, petioled, blades ovate, large, tomentose beneath; heads discoid, large, globose; phyllaries in many series, rigid, tipped with hooked spines; receptacle bristly; flowers bisporangiate, corollas purple to white; pappus of many short scabrous bristles.

- a Heads mostly sessile or short-peduncled, each branch of inflorescence racemelike; phyllaries glabrous or somewhat tomentose; petioles of lower leaves mostly hollow. 1. *A. minus*  
a' Peduncles mostly longer than heads; involucre glabrous or nearly so; petioles of lower leaves usually solid.  
2. *A. lappa*

1. \**Arctium minus* Schkuhr

Common Burdock

Naturalized (native of Eurasia)

Heads mostly sessile or short-peduncled, branches of inflorescence racemelike. Weed in waste places. Jul.

REFERENCE: Fisher 1988:208 (illus. p. 209).

HERBARIUM RECORD: 31 Jul 1901—Georgesville, *Coberly*.

2. \**Arctium lappa* L.

Great Burdock

Naturalized (native of Eurasia)

Peduncles mostly longer than heads; involucre glabrous. Waste places. Jul-Oct. Syn.: *Lappa major* Gaertn.

REFERENCES: Riddell 1834:155; Sullivant 1840:30 (naturalized plants); Craig 1890:54, 87 (#226; common in waste places, yards and in old fence rows; some very large specimens grow near the culvert and on the hillside S of the lake, 20 Jul 1882, 21 Jul 1887, 25 Jun 1888; University Farm Sep & Oct 1887); Selby & Craig 1890:11 (introduced).

HERBARIUM RECORDS: 29 Aug 1982—alley between Blenkner St. & Jackson St., Cols., *Cusick 22047* (MU, OS); 11 Aug 1989—Scioto R., S of Fishinger Rd. Bridge, Trabue-Murphy Landing, *Lowden 4277*; 16 Sep 1990—Highbanks Metro Park (Delaware Co.), floodplain, *Watts 528*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:207 (illus. p. 208).

44. *CARDUUS* L. Plumeless Thistle

Coarse spiny herbs; leaves alternate, decurrent on stem, pinnatifid; heads large, discoid; phyllaries in several series, spine-tipped; receptacle flat or convex, bristly; corollas purple, pink, or white, tube slender, lobes long and narrow; pappus of many capillary bristles.

1. \**Carduus nutans* L.

Nodding Thistle, Musk-thistle

Adventive (native of Europe)

Heads large and showy, 3-6 cm wide, solitary at ends of branches; peduncles naked above; middle and outer phyllaries 2-8 mm wide. Disturbed roadsides. Jun.

REFERENCE: Fisher 1988:210 (illus. p. 211).

HERBARIUM RECORDS: 22 Jun 1987—jct. of U.S. Rt. 23 & I-270, N of Worthington, NW Cols. Quad., *Cusick 26605*; 13 Jun 1990—jct. of Rt. 23 & I-270 (getting on I-270 from Rt. 23 to go E on I-270), Sharon Twp., *Lowden 4414*.

45. *CIRSIUM* Mill. Thistle

Coarse, spiny; leaves alternate and basal, blades dentate to pinnatifid; heads discoid, usually large; phyllaries in many series, usually but not always spine-tipped; receptacle flat to convex, bristly; flowers bisporangiate, or rarely monosporangiate; corollas pink, purple, yellow, or white, tube slender, lobes long and narrow; pappus of plumose capillary bristles.

a Leaf-blades decurrent on stem in long spiny wings; phyllaries spine-tipped. 5. *C. vulgare*

a' Leaf-blades not or very slightly decurrent on stem.

b Flowers monosporangiate or some perfect ones present; rhizome extensive; involucre 1-2 cm high; phyllaries not or scarcely spine-tipped. 6. *C. arvense*

b' Flowers bisporangiate; heads larger.

c Leaf-blades glabrous or pubescent, but not or only thinly tomentose, beneath, more or less green on both sides. 4. *C. muticum*

c' Leaf-blades densely white-tomentose beneath, glabrous or hispid above.

d Peduncles bearing only small bracts, without a circle of leaflike spiny bracts below involucre; heads small; involucre 1.5-2 cm high. 3. *C. carolinianum*

d' Peduncles leafy, with a circle of prickly leaflike bracts below the involucre.

e Cauline blades unlobed or shallowly lobed. 2. *C. altissimum*

e' Cauline blades deeply pinnatifid. 1. *C. discolor*

1. *Cirsium discolor* (Muhl.) Spreng.

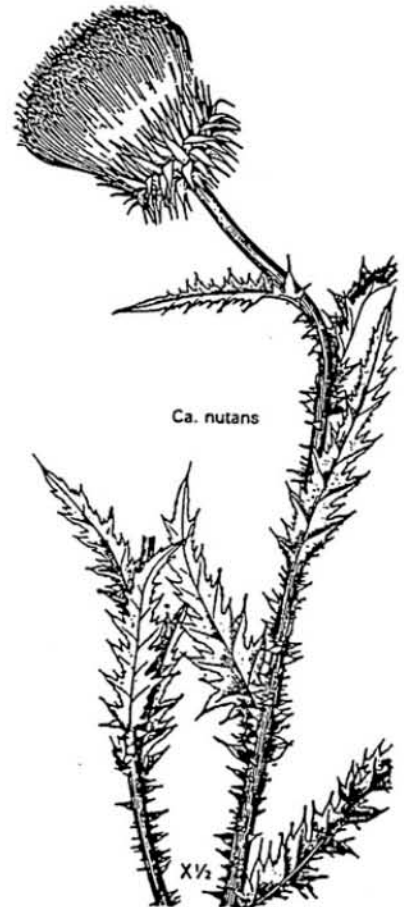
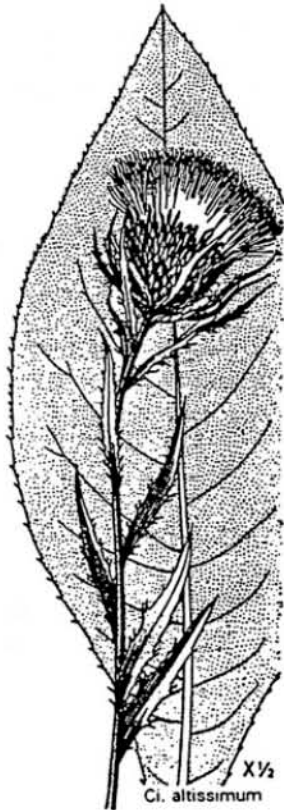
Field Thistle

Cauline leaves deeply pinnatifid; blades densely white-tomentose beneath. Fields & waste places. Jun-Sep. Syn.:

*Carduus discolor* (Muhl.) Nutt.

REFERENCES: Sullivant 1840:31; King 1981:119 (Pleasant Twp.: 7-Georgesville RR Site); Fisher 1988:215 (illus. p. 213).

ARCTIUM  
CARDUUS  
CIRSIUM



HERBARIUM RECORDS: 27 Aug 1952—S of King Ave. Bridge, Cols., *Laufersweider*; 30 Aug 1982—E side of Hoover Reservoir, 0.1 mi. W, Cabbage Rd. & ½ mi. N, jct. of Central College Rd., Blendon Twp., New Albany Quad., *Cusick 22052*; 21 Sep 1986—Highbanks Metro Park, *Higgins*; 24 Aug 1989—RR crossing on Highland Dr., S of Henderson Rd. & E of Kenny Rd., Clinton Twp., Cols., *Lowden 4291*.

2. *Cirsium altissimum* (L.) Spreng.

Tall Thistle

Cauline leaves entire to shallowly toothed or lobed; blades densely white-tomentose beneath. Fields, waste places & floodplains. Aug-Sep. Syn.: *Carduus altissimus* L., *Cnicus altissimus* Willd., *C. altissimus* Willd. var. *discolor* A.Gray  
REFERENCES: Riddell 1834:155 (open woods); Sullivant 1840:31; Craig 1890:87 (abundant on the S side of the dike, 17 Aug 1882); Selby & Craig 1890:11 (var. *discolor*).

HERBARIUM RECORDS: 18 Aug 1882—Olentangy R., OSU, *W. Green*; Sep 1888—Cols., *Craig*; 3 Sep 1891—Big Walnut, *Selby*; Aug 1892—Cols., *Werner*; 24 Sep 1892—Georgesville, *Selby* & Big Darby R., *Selby*; 10 Aug 1898—Cols., *W. Kellerman*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:215 (illus. p. 214).

3. †*Cirsium carolinianum* (Walter) Fernald & B.G.Schub.

Carolina Thistle

Leaves densely white-tomentose beneath; heads naked at base or with only small bracts; peduncles long. Dry open places. Jun. Syn.: *Carduus carolinianus* Walter, *Cirsium virginianum* (L.) Michx.

REFERENCES: Riddell 1834:155 (*Cnicus virginianus*, bottomland); Jones 1943:91; Roberts & Cooperrider 1982:68 (dry woodlands); McCance 1984:A-346; Fisher 1988:215 (illus. p. 214).

HERBARIUM RECORD: 29 Jun 1929—Big Darby Creek, *E. Thomas*.

4. *Cirsium muticum* Michx.

Swamp Thistle

Phyllaries not spine-tipped or only mucronate, with glutinous band; heads rather small, involucre 2.0-3.5 cm high, more or less tomentose. Wet habitats. Aug-Oct. Syn.: *Carduus muticus* Nutt., *Cnicus muticus* Pursh

REFERENCES: Riddell 1834:155 (*Cnicus glutinosus*, dry prairies); Sullivant 1840:31; Selby & Craig 1890:11; Fisher 1988:216 (illus. p. 214).

HERBARIUM RECORDS: 18 Oct 1890—Woodward Ave., Cols., *Selby*; 21 Sep 1895—S Cols., *Osburn*; 22 Aug 1899—S Cols., *Selby*; 3 Oct 1907—S Cols., *Detmers*.

5. \**Cirsium vulgare* (Savi) Ten.

Common Thistle, Bull Thistle

Naturalized (native of Eurasia)

Leaves decurrent on stem as spiny wings. Roadsides, fields & waste places. Jul-Aug. Syn.: *Carduus lanceolatus* L., *Cirsium lanceolatum* Scop., not Hill, *Cnicus lanceolatus* Hoffm.

REFERENCES: Riddell 1834:155; Sullivant 1840:31; Craig 1890:54, 87 (#228; common in pasture fields, 11 Jul 1882, 10 Jul 1889; University Farm Sep & Oct 1887); Selby & Craig 1890:11 (introduced); Fisher 1988:212 (illus. p. 213).

HERBARIUM RECORDS: 9 Aug 1882—University's pasture, Cols., *Devol*; 3 Sep 1892—Cols., *Bogue*; 5 Aug 1989—along Godown Rd. between Commerce Pl. & LeAnne Marie Circle, *Lowden 4241*.

6. \**Cirsium arvense* (L.) Scop.

Canada Thistle

Naturalized (native of Eurasia)

Heads small, involucre 1-2 cm high; flowers imperfect. Noxious weed of fields & waste places. Jun-Aug. Syn.: *Carduus arvensis* (L.) Robson, *Cnicus arvensis* Hoffm.

REFERENCES: Craig 1890:87 (occurs in only one place on W. Woodruff Ave. along the roadside; ... seems probable that it was introduced in unclean clover seed ... dug up several times ... this spring the weed has probably disappeared from our limits); Selby & Craig 1890:11 (introduced); Fisher 1988:212 (illus. p. 213).

HERBARIUM RECORDS: Jul 1888—Cols., *Craig*; Aug 1890—Cols., *Werner* (CLM); 1 Aug 1892—near Cols., *E. V. Wilcox*; 22 Aug 1901—Georgesville, *Coberly*; Jun 1918—Cols., *Willard*; Summer 1938—OSU Botanical Garden, *C. Jones*; 4 Jul 1972—Alton-Darby Creek Rd. & Cole Rd., *D. Keil 9337*; 30 Jun 1980—ODNR complex, Fountain Sq., Morse Rd., 1.8 mi. E of I-71, NE Cols. Quad., *Shelly*; 29 Jun 1986—Highbanks Metro Park, *Morawetz 21* (OS, OWU); 11 Jun 1989—along RR tracks at Highland Dr., S of Henderson Rd., Clinton Twp., Cols., *Lowden 4138*; 13 Jun 1990—E. Broad St. (Cols.-Newark Rd., Rt. 16), ½ mi. W of the Franklin/Licking Co. line, Jefferson Twp., *Lowden 4404*.

46. ONOPORDUM L. Scotch Thistle

Large, coarse, white-tomentose, spiny; stem broadly winged by decurrent leaf-bases; leaves alternate, blades dentate to pinnatifid; heads discoid, large, solitary at ends of branches; phyllaries in many series, spine-tipped; receptacle honeycombed, sometimes bristly; flowers bisporangiate; corolla purple-pink to white, tube slender, lobes long and narrow; pappus of reddish barbellate capillary bristles.

1. \**Onopordum acanthium* L.

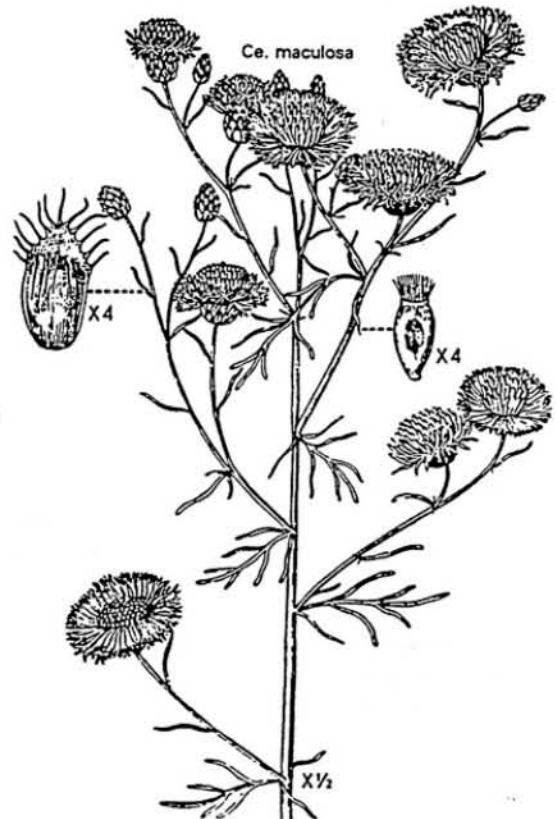
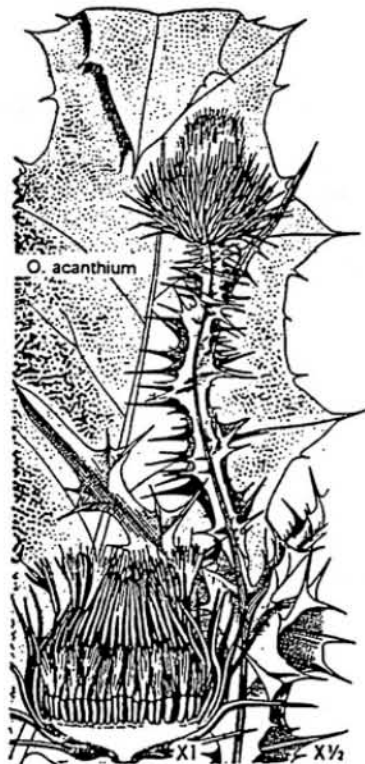
Scotch Thistle

Adventive (Eurasian)

Waste ground. Jun.



CIRSIUM  
ONOPORDUM  
CENTAUREA



REFERENCE: Fisher 1988:218 (illus. p. 218).  
HERBARIUM RECORD: 20 Jun 1937—Rock quarries, Marblecliff, *J. H. Schaffner*.

47. CENTAUREA L. Star-thistle

Leaves alternate, blades entire to pinnatifid; phyllaries in many series, appressed, usually with fimbriate, dentate, pectinate, or spiny, sometimes dark-colored, appendages; receptacle densely bristly, nearly flat; heads discoid, seeds forming in central flowers, marginal flowers sometimes with corollas enlarged and raylike, seeds not forming; pappus of bristles or scales or none.

- a Phyllaries tipped with long spines; stems winged; corollas yellow. 5. *C. solstitialis*
- a' Phyllaries not spine-tipped.
  - b Leaf-blades deeply pinnatifid, segments long and narrow; phyllaries pectinate. 1. *C. maculosa*
  - b' Leaf-blades unlobed or some of them lobed but not deeply pinnatifid.
    - c Phyllaries entire, erose, lacerate, or toothed, not pectinate; if teeth are long and regular, then they are ascending; appendages dark or light.
    - d Phyllaries with ascending narrowly-triangular teeth, the outer toothed to base, the inner only at tip; pappus present; plants evidently white-tomentose. 2. *C. cyanus*
    - d' Phyllaries with broad brown concave scarious tips, margins entire or lacerate, middle ones sometimes bifid; pappus none. 4. *C. jacea*
  - c' Phyllaries pectinate, the teeth at least as long as width of central portion; pectinate appendages of phyllaries dark, those of outer few rows constituting about 2/3 of whole phyllary. 3. *C. nigra*

1. \**Centaurea maculosa* Lam. Spotted Knapweed  
Naturalized (native of Europe)

Outer phyllaries pectinate only at tip, strongly ribbed; involucre less than 1.5 cm high. Waste places & open fields.  
Jul.

REFERENCE: Fisher 1988:222 (illus. p. 221).  
HERBARIUM RECORDS: 18 Jul 1974—RR yards along Scioto R. at end of Grandview Ave. Bridge SW side of river, *Roberts 4402*; 19 Jul 1989—Antrim Park in field at the N end of the lake, *Cols., Lowden 4225*.

2. \**Centaurea cyanus* L. Cornflower, Bluebottle, Bachelor's-button  
Adventive (native to the Mediterranean region)

Stem and leaves white-tomentose; leaves unlobed; outer phyllaries toothed to base, inner at tips only; pappus present. Jun-Jul.

REFERENCES: Craig 1890:87 (two years ago I found several specimens growing near the athletic track and this spring I found it there again, and also near the old drive to the botanical bldg.; it is also found E of the mechanical laboratory; 8 Jul 1889); Selby & Craig 1890:11 (introduced); Fisher 1988:222 (illus. p. 221).  
HERBARIUM RECORDS: Jun & Jul 1889—OSU Camp, *Cols., Craig*; Aug 1890—near *Cols., Craig*; 6 Jun 1927—Westerville, Lincoln St., *Bell*.

3. \**Centaurea nigra* L. Black Knapweed, Spanish-buttons  
Adventive (native of Europe)

Outer phyllaries with pectinate appendage more than half the phyllary length.

REFERENCE: Selby & Craig 1890:11 (introduced).  
NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:224 (illus. p. 223).

4. \**Centaurea jacea* L. Brown Knapweed  
Adventive (native of Europe)

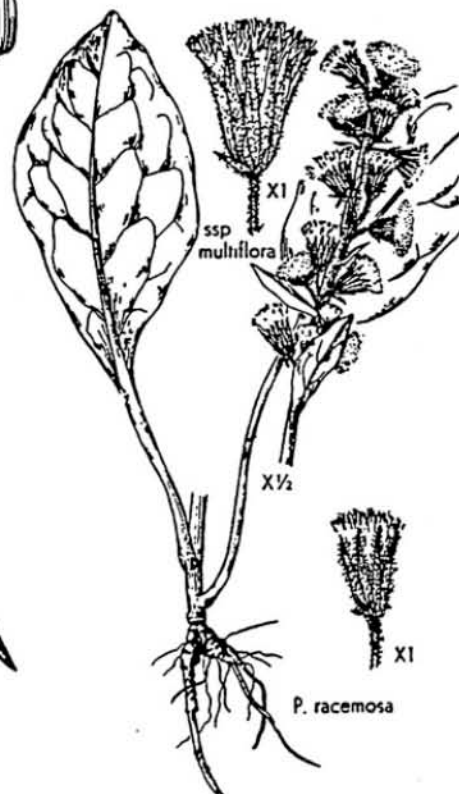
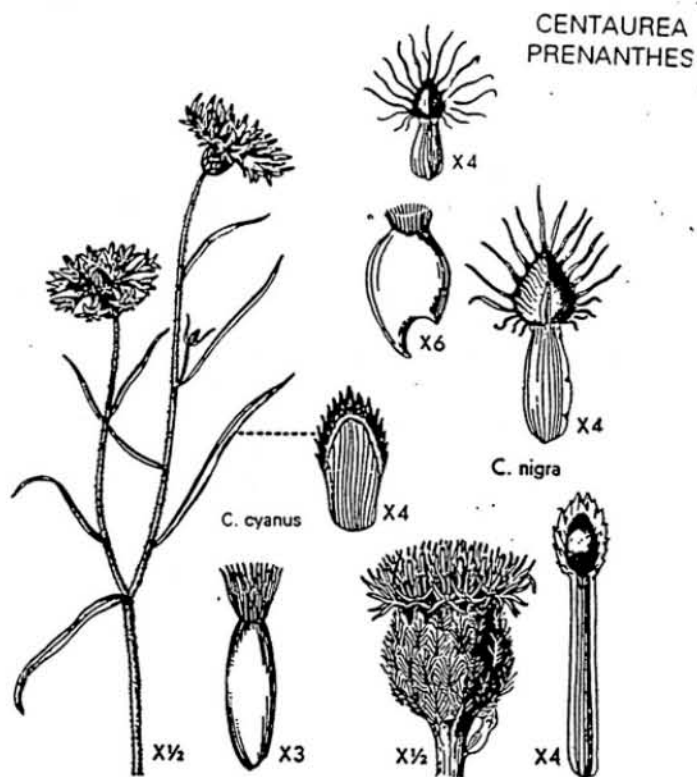
Leaves lanceolate, entire or sinuate-toothed; phyllaries broad, brown with scarious tips, outer ones lacerate, inner ones sometimes bifid. Aug.

REFERENCES: Kellerman & Werner 1893:229 (E of Mechanical Laboratory); Fisher 1988:222 (illus. p. 223).  
HERBARIUM RECORD: Aug 1890—*Cols., Werner*.

5. \**Centaurea solstitialis* L. Barnaby's Thistle, Yellow Star-thistle  
Adventive (native to the Mediterranean region)

Stems winged, sparsely tomentose; phyllaries long spine-tipped. Fields.

REFERENCE: Fisher 1988:220 (illus. p. 221).



HERBARIUM RECORD: Summer 1927—Cols., *Willard*.

LACTUCEAE (CICHORIEAE), Chicory Tribe

48. *PRENANTHES* L. Rattlesnake-root, White Lettuce

Leaves basal and cauline, variable in shape, alternate; heads slender, cylindrical, usually few-flowered; principal phyllaries in 1 row; corollas ligulate; pappus of capillary bristles, often yellow-orange, or reddish.

- a Clusters of heads short, little diverging from the main stem, the whole inflorescence long and slender; upper cauline leaves sessile or somewhat clasping; phyllaries pubescent; petioles of basal leaves winged.
- b Corollas pink; stem and lower leaf surface glabrous and glaucous. 1. *P. racemosa*
- b' Corollas cream-color; stem and leaves rough-hairy. 2. *P. aspera*
- a' Clusters of heads more or less divergent from the main stem; at least the lower cauline leaves petioled.
- c Flowers 12-35 per head; basal leaves with winged petioles; phyllaries 12-15; corollas cream-color. 3. *P. crepidinea*
- c' Flowers 5-16 per head; phyllaries 5-10.
- d Heads of 5-7 flowers; involucre of 5 light green bracts. 6. *P. altissima*
- d' Heads of 8-16 flowers; involucre of 6-10 bracts.
- e Involucre usually with a few hairs; pappus slightly exceeding phyllaries; short outer phyllaries lanceolate. 4. *P. serpentaria*
- e' Involucre glabrous, generally papillate, equaling the pappus; short outer phyllaries ovate. 5. *P. alba*

1. †*Prenanthes racemosa* Michx.

Prairie Rattlesnake-root, Glaucous White Lettuce

REFERENCES: Riddell 1835:49 (Duncan's Plains, wet & dry prairies); Selby & Craig 1890:12.

NOTE: Sullivant 1840:32 reported on plants collected in adjacent counties, and perhaps his reference to "*Prenanthes miamiensis*, Riddell. synop?" belongs here. Most likely, Selby & Craig were referring to Sullivant's report. No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:250.

2. †*Prenanthes aspera* Michx.

Rough White Lettuce

REFERENCE: Riddell 1834:155 (*Prenanthes illinoensis*).

NOTE: Sullivant 1840:32 reported on plants collected in adjacent counties, and perhaps his reference to "*Prenanthes miamiensis*, Riddell. synop?" belongs here. Most likely, Selby & Craig were referring to Sullivant's report. No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:252 (illus. p. 252).

3. †*Prenanthes crepidinea* Michx.

Nodding Rattlesnake-root, Corymbed Rattlesnake-root

Phyllaries 12-15, pubescent; flowers usually more than 20 per head. Aug-Sep.

REFERENCES: Riddell 1834:155; Riddell 1835:50 (Worthington, new fields & thickets); Sullivant 1840:32; Selby & Craig 1890:12; McCance 1984:A-361; Fisher 1988:254 (illus. p. 255).

HERBARIUM RECORDS: 1833—Worthington, *J. Paddock Collection* (ILL); 1840—Cols., *Sullivant*; 10 Sep 1887—OSU, Cols., *Craig*; 1890—Cols., *Selby*; Aug 1891—Cols., *Werner*.

4. †*Prenanthes serpentaria* Pursh

Rattlesnake-root, Lion's-foot (Fisher's name)

Syn.: *Nabalus albus* Hook. var. *serpentaria*

REFERENCES: Riddell 1834:155 (dense and shady woods); Craig 1890:88 (occasionally met with in the woods NE of the island, but is quite rare); Selby & Craig 1890:12.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:252 (illus. p. 253).

5. *Prenanthes alba* L.

White Lettuce, Rattlesnake-root

Heads with 8 or more flowers; phyllaries usually 7-10, glabrous, somewhat papillate; pappus cinnamon-brown.

Woods. Aug-Oct. Syn.: *Nabalus albus* Hook.

REFERENCES: Riddell 1834:155; Riddell 1835:490 (*Prenanthes proteophylla* Riddell; Type locality, calcareous ravine in the Scioto [R.], near Dublin); Sullivant 1840:32; Craig 1890:54, 88 (#234; found by Mr. Green, 19 Aug 1882; University Farm Sep 1887); Selby & Craig 1890:11; Fisher 1988:254 (illus. p. 255).

HERBARIUM RECORDS: 1833—Worthington, *J. Paddock Collection* (ILL); 3 Oct 1891—Georgesville, *Selby*; 10 Oct 1891—Georgesville, *Werner* (CLM); 7 Sep 1899—Worthington, *Selby*.

6. *Prenanthes altissima* L.

Rattlesnake-root, Tall Wild Lettuce

PRENANTHES



Heads 5-6 flowered, small; phyllaries usually 5; pappus whitish to tan. Woodlands. Oct-Nov. Syn.: *Nabalus altissimus* Hook.

REFERENCES: Riddell 1835:490 (*Prenanthes parviflora* Riddell; Type locality, slaty ravines, Worthington); Sullivant 1840:32 (*Prenanthes parviflora* Riddell); Craig 1890:88 (sparingly on the hillside near the nursery); Selby & Craig 1890:11; Fisher 1988:254 (illus. p. 255).  
HERBARIUM RECORDS: 6 Nov 1890—Scioto R. near Cols., E. V. Wilcox; 10 Oct 1902—Cols., Sanders.

#### 49. LACTUCA L. Lettuce

Leaves alternate, entire to pinnatifid; heads with few to many flowers, in a panicle; involucre narrow, conic or cylindrical, phyllaries in 2 or more series of unequal lengths; receptacle naked; corollas all ligulate; pappus soft, capillary; achenes flat, sometimes beaked.

*Lactuca sativa* L., the common Garden Lettuce, occasionally escapes from cultivation.

- a Achene-beak slender, slightly shorter than to about twice as long as the body; corolla yellow; pappus white.
- b Achene-body very flat, oval or oblong, with one prominent median rib on each face (sometimes 2 or more obscure ones).
- c Stem or midrib of blades beneath usually hairy; involucre 12-22 mm long; achene (incl. beak) 7-9 mm long; rare. 1. *L. hirsuta*
- c' Only rarely hairy, often glaucous; involucre 10-15 mm long; achene (incl. beak) less than 7 mm long; common. 2. *L. canadensis*,
  - d Leaves, except sometimes the lowermost, entire or toothed, unlobed.
    - e Leaves lanceolate or narrowly ovate, usually entire, var. *canadensis*
    - e' Leaves oblanceolate or obovate, usually toothed, var. *obovata* Wiegand
  - d' Leaves, except sometimes the upper ones, pinnatifid.
    - f Unlobed leaves or lobes of lobed leaves linear or linear-lanceolate, margins untoothed or nearly so, var. *longifolia* (Michx.) Farw.
    - f' Unlobed leaves or the lobes lanceolate to ovate, var. *latifolia* Kuntze
- b' Achene-body oblanceolate, with 5-7 ribs on each face; leaves sagittate-clasping, entire, toothed, or lobed.
  - g Leaves pinnatifid or unlobed; margins spinulose-toothed; under surface of midvein usually spinulose. 6. *L. serriola* var. *integrata*
  - g' Leaves linear and entire or with some linear entire lobes; both the margins and the conspicuous white midrib smooth or nearly so. 7. *L. saligna*
- a' Achene-beak absent or short and thick, achene-body with 3 or more ribs on each face; corolla blue (rarely white or yellow); pappus white, gray, or brown.
  - h Perennial; heads large, involucre 15-20 mm in fruit; corolla blue; leaves not sagittate. 3. *L. pulchella*
  - h' Annual or biennial; heads small, involucre 9-15 mm in fruit; corolla yellow, blue, or whitish.
    - i Pappus white; corolla bluish (or white). 4. *L. floridana*,
      - j Leaves lyrate or runcinate-pinnatifid, var. *floridana*
      - j' Leaves elliptic, unlobed, toothed, var. *villosa*
    - i' Pappus gray or brown; corolla blue, white, cream, or yellow. 5. *L. biennis*, typical *L. biennis* has bluish to white flowers and lobed leaves, forma *integrifolia* has unlobed leaves.

#### 1. †*Lactuca hirsuta* Muhl.

Hairy Tall Lettuce

REFERENCES: Riddell 1834:155; Craig 1890:88 (on the hillside; not common); Selby & Craig 1890:11; Kellerman & Werner 1893:226 (there is a specimen in the University Herbarium to authenticate this species; it is a top of *L. floridana* Gaertn.).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:244 (illus. p. 245).

#### 2. *Lactuca canadensis* L.

Trumpet-weed, Lettuce, Wild Lettuce, Tall Wild Lettuce

Leaves and stems usually glabrous, often glaucous; heads small, 10-15 mm high; flowers more than 12 per head; corolla yellow, achenes 4.5-6.5 mm long, 1-3 ribs on each face, beak shorter or no longer than the body. Fields, waste places & fence rows. Jun-Oct. Syn.: *L. canadensis* L. var. *integrifolia* A.Gray, *L. elongata* Muhl., *L. integrifolia* Bigelow  
REFERENCES: Riddell 1834:155; Sullivant 1840:32; Craig 1890:80, 88 (rare; on the bank of the brook W of the culvert, and also W of the barn to the river; on the hillside near the nursery and in the grass-plot field along the fence, 8 Jul 1887, 1 Jul 1888, 22 Jun 1889); Selby & Craig 1890:11; King 1981:120 (Tall Wild Lettuce, Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie); Fisher 1988:241 (illus. pp. 242-243).

HERBARIUM RECORDS: 18 Jul 1882—University Campus, *Devol*; 1890—Cols., *Selby*; 20 Jul 1890—Scioto R., *Selby*; 3 Oct 1891—Georgesville, *Selby*; 14 Jul 1892—Cols., *Bogue*.

NOTE: The specimens were inadequate to determine varieties. However, there are both leaf types, lobed to pinnatifid and unlobed.

3. *Lactuca pulchella* (Pursh) DC.

Blue Lettuce

Adventive (introduced from W U.S.)

Jul.

REFERENCE: Werner 1893:93 (Cols., *Werner*).

HERBARIUM RECORD: Jul 1892—Cols., *Werner*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:241 (cites a specimen from Trumbull Co. and decided "the species is not included here [Ohio] since its existence in the wild today is doubtful"). The *Werner* specimen from Franklin Co. is annotated by C.G.W. as "probably *pulchella*."

4. *Lactuca floridana* (L.) Gaertn.

Tall Blue Lettuce, Woodland Lettuce

Inflorescence open; corolla blue; achenes 5-7-nerved on each side, with a short stout beak, or beakless; pappus white. Moist woodland borders. Aug-Sep.

REFERENCES: Sullivant 1840:33 (*Sonchus floridanus* L.); Craig 1890:88 (near the river and in fields); Selby & Craig 1890:11.

Two varieties are recognized:

var. *floridana*

Leaves lyrate or pinnatifid.

HERBARIUM RECORDS: 22 Aug 1890—Cols., *Werner* (CLM); 7 Sep 1890—Lake Park, *Selby*; 22 Aug 1899—Franklin Co., *Selby*; 6 Sep 1986—Highbanks Metro Park (Delaware Co.), *Witsberger*; 16 Aug 1990—between Whetstone and Northmoor Parks, woody area, Clinton Twp., *Lowden 4555*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:246 (illus. p. 247).

var. *villosa* (Jacq.) Cronquist

Leaf blades elliptic, margins toothed.

REFERENCE: Fisher 1988:246 (illus. p. 247).

HERBARIUM RECORD: 22 Aug 1899—canal S of Cols., *Selby*.

5. †*Lactuca biennis* (Moench) Fernald

Tall Blue Lettuce

Inflorescence narrowly paniculiform; corollas bluish to cream or yellowish; achenes few-nerved on each side, with a short stout beak, or beakless; pappus light brown. Moist habitats. Sep. Syn.: *L. spicata* (Lam.) Hitchc., misapplied

REFERENCES: Riddell 1834:155 (*Agathyrsus floridanus* D. Don); Craig 1890:54, 88 (*Lactuca leucophaea* A. Gray & *Mulgedium leucophaeum* DC.); Selby & Craig 1890:11 (*Lactuca leucophaea* A. Gray); Jones 1943:97 (*Lactuca spicata* var. *aurea* Jenn.); Fisher 1988:248 (illus. p. 249).

HERBARIUM RECORDS: 7 Sep 1899—Worthington, *Selby*; 10 Sep 1901—Cols., *Mead*; 11 Sep 1901—Cols., *Tyler & Jennings*.

NOTE: Specimens reveal both forms, forma *biennis*, with lobed leaves (*Mead* specimen only), and forma *integrifolia* (Torr. & A. Gray) Fernald, with leaves toothed but unlobed.

6. *Lactuca serriola* L.

Prickly Lettuce, Wild Lettuce

Naturalized (native of Europe)

Leaves conspicuously prickly along midrib beneath; flowers often fewer than 12 per head; corolla yellow; achenes with 5-7 ribs on each face, beak nearly the same length as the body. Weed of fields, roadsides & waste places. Jun-Aug. Syn.: *L. scariola* L.

REFERENCES: Craig 1890:88 (sparingly about the culvert, but is spreading rapidly and is now found in several places along roadsides, 9 Jul 1882); Selby & Craig 1890:11 (introduced); Detmers 1890:53 (Plate IV); Fisher 1988:244 (illus. p. 245).

HERBARIUM RECORDS: 26 Jul 1890—Cols., *Hine*; 26 Jul 1891—Cols., *E. M. Wilcox*; 22 Aug 1892—Cols., *Bogue*; 27 Jun 1973—alley near OSU Campus, Cols., *D. Keil 9627*; [date?]-Highbanks Metro Park (Delaware Co.), *Morawetz*; 18 Jul 1990—parking lot of OSU Mapping Center, 1216 Kinnear Rd, Clinton Twp., Cols., *Lowden 4454*.

NOTE: The cited specimens are *Lactuca serriola* L. var. *integrata* Gren. & Godr., with leaves unlobed.

7. *Lactuca saligna* L.

Willowleaf Lettuce

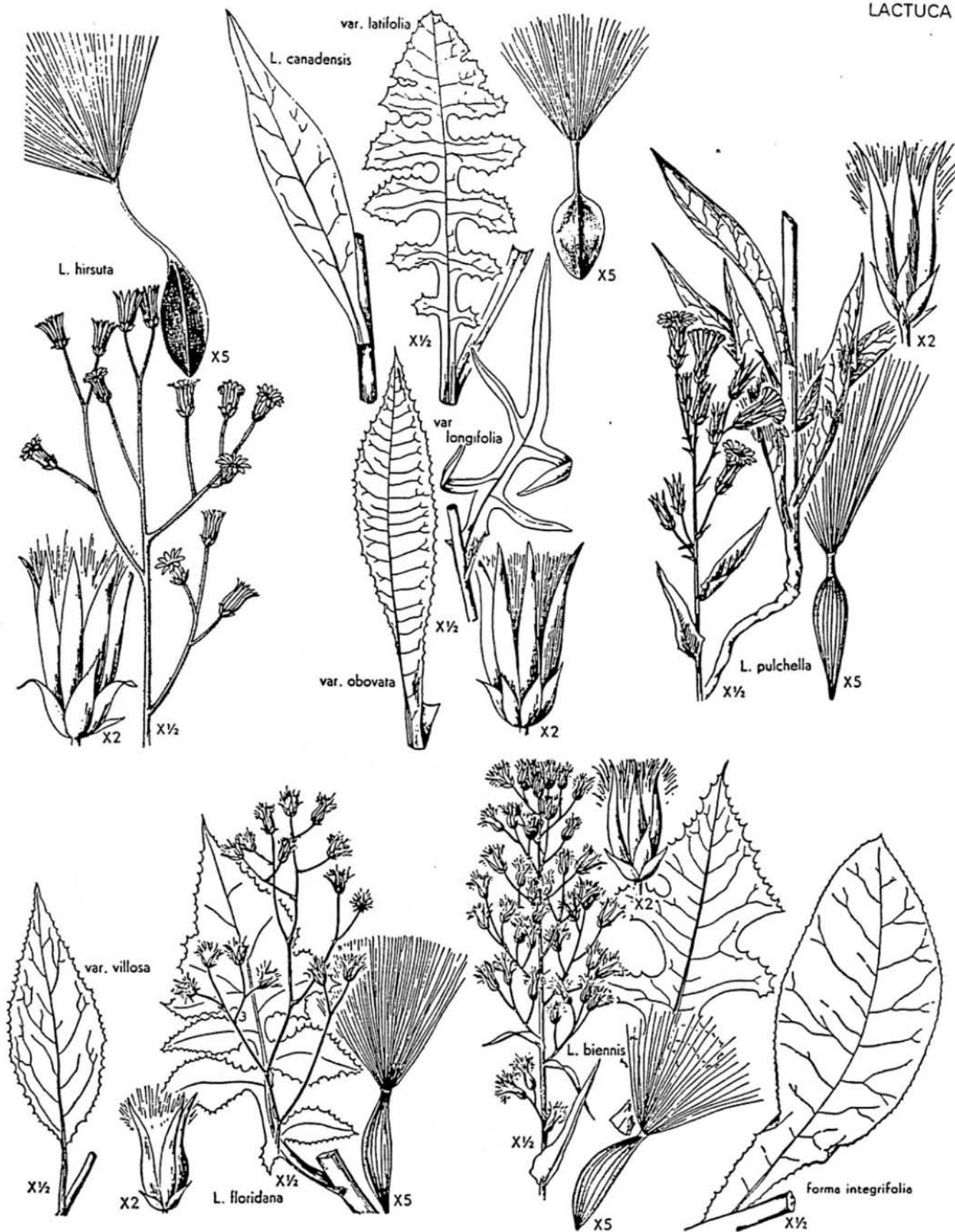
Leaves linear with conspicuous white midrib, margins not prickly; achenes with filiform beak nearly twice as long as the body.

HERBARIUM RECORD: 10 Jul 1995—Longview Ave., along sidewalk, just W of 3325 N. High St., Clintonville, Cols., *Lowden 5086*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:244 (illus. p. 246).

50. SONCHUS L. Sow-thistle

LACTUCA





Leaves alternate, toothed to pinnatifid; heads many-flowered, in a corymbose inflorescence; phyllaries in few to several series, involucre in fruit swollen at base; corollas all ligulate, yellow or orange; pappus white, capillary; achenes flattened, not beaked.

- a Heads 3-5 cm wide; corollas bright yellow or orange; perennial; achenes transversely wrinkled and longitudinally striate. 1. *S. arvensis*,
  - b Peduncles and phyllaries with gland-tipped hairs, var. *arvensis*
  - b' Peduncles and phyllaries without gland-tipped hairs, var. *glabrescens*
- a' Heads not more than 2.5 cm wide; corollas pale yellow; annual; achenes longitudinally striate.
  - c Auricles pointed; leaves with soft spiny teeth; achenes transversely wrinkled. 2. *S. oleraceus*
  - c' Auricles rounded; leaves spinulose-dentate; achenes not transversely wrinkled. 3. *S. asper*

1. \**Sonchus arvensis* L.

Field Sow-thistle

Naturalized (native of Europe)

Heads 3-5 cm wide in flower; achenes with 5 or more prominent ribs on each face, strongly rugose. Fields & waste places. Jul. Syn.: *S. uliginosus* M.Bieb.

REFERENCES: Riddell 1834:155 (cultivated fields); Fisher 1988:239 (illus. p. 238).

HERBARIUM RECORD: 19 Jul 1989—Antrim park, E of Rt. 315, N of Bethel Rd., Lowden 4215.

NOTE: The cited specimen best fits *Sonchus arvensis* L. var. *glabrescens* (Günther) Grab. & Wimm. (*S. uliginosus* M.Bieb.) which lacks coarse gland-tipped hairs on the phyllaries and peduncles.

2. \**Sonchus oleraceus* L.

Common Sow-thistle

Naturalized (native of Europe)

Leaf auricles pointed; achenes transversely rugose with several ribs. Weed of roadsides, fields & waste places. Jun-Sep.

REFERENCES: Riddell 1834:155 (cultivated fields); Selby & Craig 1890:12 (introduced); Fisher 1988:239 (illus. p. 238).

HERBARIUM RECORDS: 24 Jun & 18 Jul 1962—behind greenhouses W of B&Z Bldg., OSU, Cols., Primmer; 7 Jul 1986—Piedmont Rd. E of N. High St., NW Cols. Quad., Cusick 25476; 17 Jul 1986—16th Ave. off High St., Cols., E. King 24; 14 Jun 1989—behind B&Z Bldg. OSU campus, Cols., Lowden 4174 & 4179.

3. \**Sonchus asper* (L.) Hill

Prickly Sow-thistle, Spiny-leaved Sow-thistle

Naturalized (native of Europe)

Leaf auricles rounded; achenes smooth except for 3-ribs on each side. Weed of roadsides, fields & waste places. Jun-Nov. Syn.: *S. asper* Vill.

REFERENCES: Riddell 1834:155 (*Sonchus spinulosus*); Sullivant 1840:33 (*Sonchus spinulosus* Bigel., naturalized plants); Craig 1890:54, 56, 88 (#244; not common; grows on the hillside and near the culvert, 11 Jul 1882, 19 Jun 1887; University Farm Sep 1887, 4 & 13 Nov 1888); Selby & Craig 1890:12 (introduced); Fisher 1988:239 (illus. p. 240).

HERBARIUM RECORDS: Aug 1888—Cols., Craig; 1889—Cols., Selby; 13 Jul 1892—Cols., Bogue; 24 Jun 1962—Cols., behind greenhouses W of B&Z Bldg. at OSU, Primmer; 14 Jun 1989—B&Z Bldg., OSU campus, Lowden 4149, 4176-4177; 5 Aug 1989—Perry Twp., along Godown Rd., between Commerce Pl. & Le Anne Marie Circle, Lowden 4233.

51. **HIERACIUM** L. Hawkweed

Mostly hairy, often glandular, hairs sometimes stellate; leaves entire or toothed, simple, alternate, sometimes all basal; phyllaries in 2-3 series; corollas ligulate, yellow to red-orange; pappus gray or brownish, of capillary bristles.

- a Lower stem leafy; basal rosette usually not present at anthesis (except in *H. gronovii*).
  - b Inflorescence an elongate panicle, usually 3 or more times as long as wide, not leafy bracted; blades obtuse, pubescent, mostly below middle of stem. 6. *H. gronovii*
  - b' Inflorescence not elongate, leafy bracted.
    - c Inflorescence open, spreading, peduncles slender; stem glabrous above; blades glabrate and glaucous beneath, acute. 5. *H. paniculatum*
    - c' Inflorescence rather stiff; peduncles stout; stem pubescent, often glandular; blades pubescent beneath, obtuse. 7. *H. scabrum*
- a' Basal rosette present at anthesis; cauline leaves none or few.
  - d Corolla red-orange; stolons elongate. 2. *H. aurantiacum*
  - d' Corollas yellow; plants stoloniferous or not.

LACTUCA  
SONCHUS  
HIERACIUM



- e Blades obovate to elliptic, entire to undulate-dentate, lateral veins evident; often a few cauline leaves present; not stoloniferous; inflorescence open, corymbiform. **4. *H. venosum***
- e' Blades oblanceolate or narrowly lanceolate, lateral veins obscure; stem-leaves few or none; stem hairy; inflorescence of 5 or more heads, compact or somewhat open, corymbiform.
- f Leaves narrowly elliptic, somewhat glaucous; blades sparsely hairy on margins above, midrib below hairy; rhizomes short and thick, not stoloniferous. **3. *H. piloselloides***
- f' Leaves oblanceolate; blades abundantly pubescent on both sides, not glaucous; rhizome elongate or stolons short and stout. **1. *H. caespitosum***

**1. *Hieracium caespitosum* Dumort.**

Yellow King Devil

Naturalized (native of Europe)

Cauline leaves none or few, basal ones oblanceolate, long bristle-like hairs abundant on both sides; heads 5 or more; phyllaries and upper inflorescence branches blackish-glandular-hispid. Weed along roadsides, in fields & waste places. May-Jun. Syn.: *H. pratense* Tausch

REFERENCE: Fisher 1988:260 (illus. p. 259).

HERBARIUM RECORDS: 21 May 1970—Thurber Village, Texaco Station, *Boone 167*; 19 Jun 1973—Washington Twp., 1 mi. S. of Dublin, E Side Scioto R. along Rt. 33, *Cahall & Roberts 3600*; 23 May 1986—Highbanks Metro Park (Delaware Co.), *Watts 312* (OS, OWU); 19 May 1990—Plain Twp., E of New Albany, 1 mi. S of Rt. 161 along W roadside of Kitzmiller Rd., *Lowden 4312*; 30 May 1990—Jackson Twp., 0.5 mi. W of Hoover Rd., along N side of Orders Rd., *Lowden 4358*; 31 May 1992—Battelle Darby Creek Metro Park, along RR tracks E of Georgesville, between E bank of Big Darby Creek & Big Darby Dr., Pleasant Twp., *Lowden 4969*.

**2. *Hieracium aurantiacum* L.**

Orange-red King-devil

Naturalized (native of Europe)

Stolons elongate; basal rosette present at anthesis; cauline leaves none; corolla red-orange. Fields. May.

HERBARIUM RECORD: 31 May 1982—Blendon Woods, common, *Owens*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:256 (illus. p. 257).

**3. *Hieracium piloselloides* Vill.**

Glaucous King-devil

Naturalized (native of Europe)

Rhizomes short and thick; leaves narrowly elliptic; blades sparsely hairy above, somewhat glaucous; inflorescence somewhat open; phyllaries hispid with blackish gland-tipped hairs. Weedy tendencies, dry habitats. May. Syn.: *H. florentinum* All.

HERBARIUM RECORD: 31 May 1993—bluffs above Graessle Rd., Battelle Darby Metro Park, just S of Rt. 665, Pleasant Twp., *Lowden 5060*.

NOTE: Not mapped for Franklin Co. by Fisher 1988:258 (illus. p. 259).

**4. *Hieracium venosum* L.**

Veined Hawkweed

Basal blades often with purple veins; peduncles not stellate, sometimes glandular; stem glabrous except near the heads.

REFERENCES: Riddell 1834:155; Selby & Craig 1890:11; Fisher 1988:260 (illus. p. 259).

NOTE: No specimens seen from Franklin Co.

**5. *Hieracium paniculatum* L.**

Hawkweed, Panicked Hawkweed

REFERENCES: Sullivant 1840:32; Selby & Craig 1890:11; Fisher 1988:262 (illus. p. 263).

NOTE: No specimens seen from Franklin Co.

**6. *Hieracium gronovii* L.**

Beaked Hawkweed

REFERENCES: Sullivant 1840:32; Selby & Craig 1890:11.

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:264 (illus. p. 263).

**7. *Hieracium scabrum* Michx.**

Rough Hawkweed

Jul-Aug.

REFERENCES: Craig 1890:87 (Ernest Evans found a flower last August [ca. 1888] in the meadow near the river, 28 Aug 1882, 9 Jul 1888); Kellerman & Werner 1893:226 (*H. scabrum* Michx. A specimen of *Crepis biennis*, labeled *Hieracium scabrum*, was found in the Experiment Station Herbarium; it was collected on the University grounds, and may be the plant referred to *H. scabrum* was not inserted in Selby & Craig's list of Franklin Co. plants, published later); Werner 1893:93 (Cols., *Werner*).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:264 (illus. p. 263).

**52. CREPIS L. Hawk's-beard**



HIERACIUM  
CREPIS

Leaves entire to pinnatifid, the cauline alternate, usually much smaller upward; heads in panicles or corymbs; principal phyllaries in 1 or 2 series, often becoming thickened at base; corollas ligulate, yellow; pappus soft, white, capillary.

*Crepis nicaeensis* Balb. (native of S Europe, introduced in impure seed) is a waif in Franklin Co. (Spring 1889—Cols., *Craig*). Not mentioned for Franklin Co. by Fisher 1988:248.

- a Receptacle ciliate; longer (inner) phyllaries finely pubescent on the inner side; achenes dark. 1. *C. tectorum*  
a' Receptacle glabrous; phyllaries glabrous on the inner side. 2. *C. capillaris*

1. \**Crepis tectorum* L.

Hawk's-beard

Cauline leaves linear, or nearly so; achenes rough, dark purplish-brown, 3.8 mm long-attenuate, not beaked, 10-ribbed.

HERBARIUM RECORD: Summer 1993—Turkey Run, just NE of the Millhon Clinic at 3730 Olentangy River Rd., N of E. North Broadway, Cols., Clinton Twp., *Lane*.

NOTE: Not mentioned for Franklin Co. by Fisher 1988:248.

2. \**Crepis capillaris* (L.) Wallr.

Smooth Hawk's-beard

Adventive (native of Europe)

Phyllaries pubescent on the outer side, glabrous on the inner side, the outer ones slender; receptacle glabrous.

Lawns & waste places. Jun-Jul.

REFERENCE: Fisher 1988:250 (illus. P. 251).

HERBARIUM RECORDS: 27 Jul 1920—*J. H. Schaffner*, 9 Jun 1988—W part of Greenlawn Cemetery, at deadend of Greenlawn Ave., SW Cols. Quad., *Cusick* 27477.

53. KRIGIA Schreb. Dwarf Dandelion

Leaves all at base of stem or some cauline ones present also; blades entire to pinnatifid, obovate to linear; phyllaries few to many, in about 2 rows; receptacle naked; corollas all ligulate, yellow or orange; pappus double, the outer row of hyaline scales, the inner row of capillary bristles.

1. *Krigia biflora* (Walter) S.F.Blake

Dwarf Dandelion, False Dandelion

Flowering stem branched, bearing more than 1 head and 1-3 clasping leaves; heads ligulate; corolla orange or yellow; pappus of 15 or more bristles and a few inconspicuous scales. Open woods & roadsides. May-Jun. Syn.:

*K. amplexicaulis* Nutt., *Troximon virginicum* Pursh

REFERENCES: Sullivant 1840:33, 59; Selby & Craig 1890:11; King 1981 (Pleasant Twp.: 1-Battelle-Darby Creek, Metro Park, Bluff Prairie).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; May 1890—Central College, *Selby*; 6 Jun 1891—Harrisburg & Harrisburg Pike, *Selby*; 28 May 1892—Central College, *W. Kellerman*; 23 May 1990—Central College Rd., 0.5 mi. E of Big Walnut Creek, hilly woody area in front of Hoover Dam Park, Blendon Twp., *Lowden* 4338; 11 May 1991—Hoover Dam Park, open woods, W of Cabbage Rd., Blendon Twp., *Lowden* 4615; 14 May 1992—jct. of Graessle Rd. & Rt. 665, bluff area, Battelle Darby Creek Metro Park, Pleasant Twp., *Lowden* 4947; 31 May 1993—jct. of Graessle Rd. & Rt. 665, bluff area, Battelle Draby Creek Metro Park, Pleasant Twp., *Lowden* 5061.

NOTE: Not mapped for Franklin Co. by Fisher 1988:228 (illus. p. 230).

54. TARAXACUM Wigg. Dandelion

Leaves basal, lanceolate, pinnatifid; heads solitary on hollow naked scapes, several scapes on one plant; inner phyllaries erect, those of outer row shorter; receptacle naked, honeycombed; corollas all ligulate, yellow; pappus capillary; achenes obovoid, muricate, slenderly beaked when mature.

- a Achenes reddish or reddish-purple at maturity; leaves deeply pinnatifid. 1. *T. laevigatum*

- a' Achenes pale gray-brown or olivaceous at maturity; leaves pinnatifid or lobed. 2. *T. officinale*

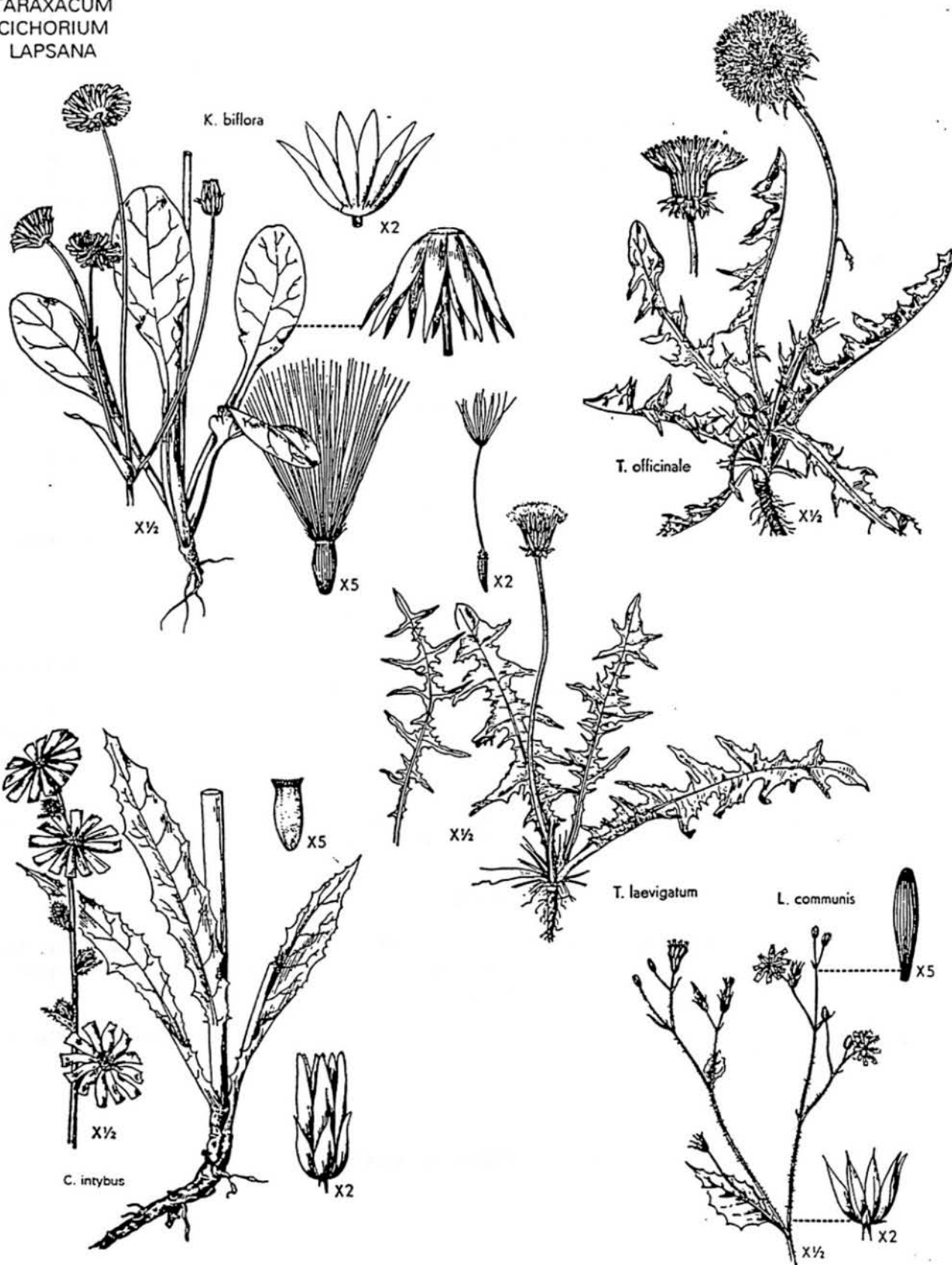
1. \**Taraxacum laevigatum* (Willd.) DC.

Red-fruited Dandelion

Adventive (native of Eurasia)

Achenes reddish or reddish-purple at maturity. Lawns & disturbed places. May-Nov. Syn.: *T. erythrospermum* Andr.

KRIGIA  
TARAXACUM  
CICHORIUM  
LAPSANA



REFERENCE: Fisher 1988:236.

HERBARIUM RECORDS: 7 May 1896—Worthington, *M. Wright*; 19 Nov 1899—Cols., *W. Kellerman*.

2. \**Taraxacum officinale* Weber

Common Dandelion

Naturalized (native of Eurasia)

Achenes tan to brown or olivaceous at maturity. Common weed in lawns & disturbed places. Apr-Nov. Syn.:

*T. dens-leonis* Desf., *Leontodon taraxacum* L.

REFERENCES: Riddell 1834:155; Sullivan 1840:32 (naturalized plants); Craig 1890:54-56, 88 (#237; abundant everywhere in meadows and pastures, 12 Apr 1882, 30 Apr 1883, 14 May 1884, 30 Apr 1885, 14 Apr 1886, 11 Apr 1887, 5 Apr 1888, 9 Apr 1889; University Farm 11 Apr, Sep & 16 Nov 1887, 11 & 16 Nov 1888); Selby & Craig 1890:12 (introduced); Fisher 1988:236 (illus. p. 237).

HERBARIUM RECORDS: May 1888—Cols., *Craig*; 24 May 1892—Cols., *W. Kellerman*; 14 Jul 1892—Cols., *Bogue*; 14 May 1931—Cols., *J. H. Schaffner*; 16 May 1934—Cols., *Blaydes*; 19 May 1974—OSU Botanical Garden, Cols., *D. Johnson*; 30 Apr 1977—E. 13th Ave. & Indianola, Cols., *C. Liu* 47; 1 May 1977—W side of Rt. 161, S bank of Alum Creek, *Hoops* 30; 7 Apr 1985—lawn of Biol. Sci. Bldg., OSU, *Chansa-Ngavej* 5; 23 Apr 1986—OSU West Campus, Cols., *Taylor-Lehman*; 21 May 1986—Park of Roses, Cols., *Blanco*; 10 Oct 1987—Highbanks Metro Park (Delaware Co.), *Morawetz* (OS, OWU); 30 Apr 1988—Worthington, 226 Sanbridge, S of Rt. 161 & W of Rt. 23, *M. Hoffman* 44; 8 May 1989—Overbrook Dr. Ravine, between N. High St. & Cooke Rd., *Lowden* 4036.

55. CICHORIUM L. Chicory

Basal and cauline leaves lanceolate, blades entire to pinnatifid, sometimes runcinate, cauline alternate, somewhat clasping; heads 2-4 cm wide, single or 2-3 together in upper axils; inner phyllaries erect, the outer shorter; receptacle naked or fimbriate; corollas all ligulate, blue or rarely pink or white; pappus a crown of small scales.

1. \**Cichorium intybus* L.

Chicory, Blue Sailor

Naturalized (native of Europe)

Common weed along roadsides & in waste places. Jul-Aug.

REFERENCE: Fisher 1988:227 (illus. p. 227).

HERBARIUM RECORDS: 4 Jul 1891—near Cols., *E. V. Wilcox*; 1 Aug 1891—Cols., *E. V. Wilcox*; 10 Jul 1990—along E bank of Scioto R., intersection of McCoy Rd. & Rt. 33, Perry Twp., *Lowden* 4434.

56. LAPSANA L. Nipplewort

Leaves alternate, blades ovate, entire to pinnatifid; heads several to many; outer phyllaries short, inner in 1 series, about equal, calyxlike; receptacle naked; corollas all ligulate, yellow; pappus none.

1. \**Lapsana communis* L.

Nipplewort

Naturalized (native of Eurasia)

Waste places & fields. May-Jun.

REFERENCES: Selby 1891a:111a (introduced); Fisher 1988:225 (illus. p. 226).

HERBARIUM RECORDS: 27 Jun 1973—Along alley near OSU campus, Cols., *D. Keil* 9626; 30 May 1977—parking lot, general vicinity of Neil Ave. & Third Ave., Cols., *W. Carr* 274; 6 Jul 1992—SW corner of Cooke Rd. & Maize Rd., shaded fencerow, NE Cols. Quad., *Cusick* 30422.

57. HYPOCHOERIS L. Cat's-ear

Leaves all basal or some lower cauline ones present, pubescent, oblanceolate, toothed or pinnatifid; heads 3-4 cm wide, at ends of stout scapes; phyllaries in several series; receptacle chaffy; corollas all ligulate, yellow; pappus of bristles, plumose or the outer ones barbellate; achene beaked.

1. \**Hypochoeris radicata* L.

Long-rooted Cat's-ear

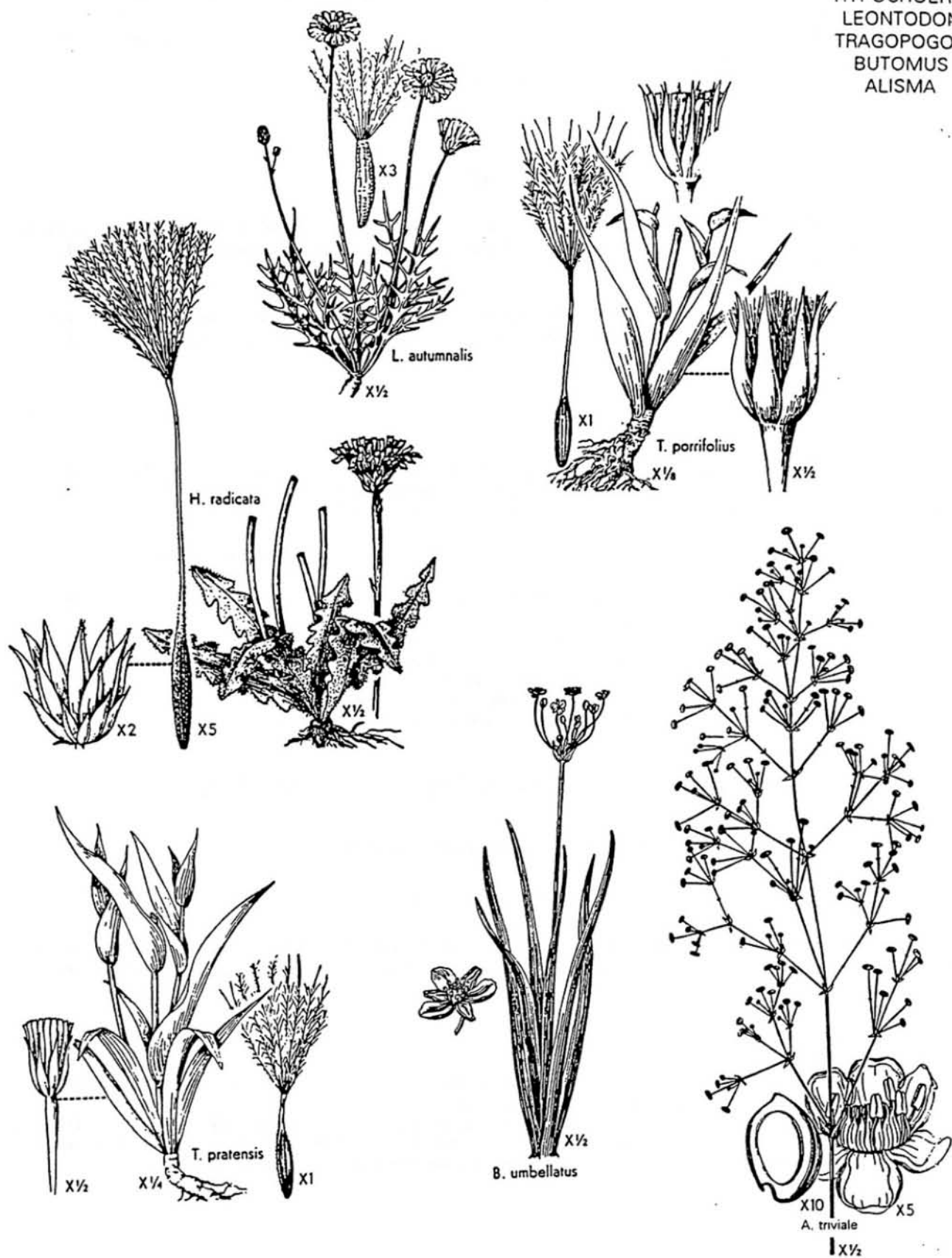
Adventive (native of Eurasia)

REFERENCE: Fisher 1988:230 (illus. p. 230).

NOTE: No specimens seen from Franklin Co.

58. LEONTODON L. Hawkbit

HYPOCHOERIS  
LEONTODON,  
TRAGOPOGON  
BUTOMUS  
ALISMA





Leaves basal, lanceolate or oblanceolate, entire to pinnatifid; heads terminal on branched or unbranched scapes; phyllaries of different lengths; receptacle fimbriate, villous, or honeycombed; corollas all ligulate, yellow.

1. *\*Leontodon autumnalis* L.

Fall Dandelion, Hawkbit

Adventive (native of Eurasia)

Scape sometimes branched, bracted; pappus of equal plumose bristles.

REFERENCE: Fisher 1988:232 (illus. p. 231).

HERBARIUM RECORD: 1942—Cols., C. Jones.

59. TRAGOPOGON L. Goat's-beard

Glabrous, succulent; leaves alternate, entire, linear or lanceolate, parallel-veined, clasping; heads large, solitary at ends of branches; phyllaries in 1 series, nearly equal; corollas all ligulate; pappus of plumose interwebbed bristles; achenes beaked.

a Corollas purple, shorter than the phyllaries; peduncles hollow and enlarged below the heads. 1. *T. porrifolius*

a' Corollas yellow, equaling or longer than phyllaries; peduncles not enlarged below the heads or enlarged a little in fruit. 2. *T. pratensis*

1. *\*Tragopogon porrifolius* L.

Salsify

Cultivated Escape (European cultigen)

May-Jun.

REFERENCES: Craig 1890:87 (escaped from cultivation in the grass-plot field and N of the garden near the culvert, 29 May 1882, 3 Jun 1884, 27 May 1887; a var. with yellow flowers was found in the former locality which perhaps runs into ...).

NOTE: No specimens seen from Franklin Co. Not mapped for Franklin Co. by Fisher 1988:234 (illus. p. 235).

2. *\*Tragopogon pratensis* L.

Yellow Goat's-beard, Showy Goat's-beard

Naturalized (native of Europe)

Leaves acuminate-tipped, curled downward at maturity; corollas yellow, equal or longer than phyllaries.

Roadsides, fields & waste places. May-Jun.

REFERENCES: Craig 1890:87 (a single specimen of which was found 27 May 1889); Fisher 1988:234 (illus. p. 235).

HERBARIUM RECORDS: Spring 1889—near Cols., Craig; 11 Jun 1900—Cols., W. Kellerman; 7 Jun 1987—Highbanks Metro Park (Delaware Co.), Morawetz; 26 May 1988—0.1 mi. N of Sharon Hill on Linworth Rd., Gerberick 46; 11 Jun 1989—SE corner of Henderson & Kenny Rd., Perry Twp., Lowden 4135; 11 Jun 1989—RR tracks on Highland Dr., W of Olentangy River Rd., Clinton Twp., Lowden 4141; 19 May 1990—just S of the Plain/Jefferson Twp. Line, intersection of Blacklick Creek with Morse Rd., Jefferson Twp., Lowden 4320.

CLASS LILIOPSIDA, MONOCOTYLEDONS

BUTOMACEAE, Flowering-rush Family

1. BUTOMUS L. Flowering-rush

Tall herb growing in mud or shallow water; leaves linear, basal; flowers hypogynous, regular, bisporangiate, about 2 cm wide, on slender pedicels in a 3-bracted umbel; sepals 3; petals 3, pink; stamens 9; carpels 6, slightly united at base; fruit an aggregate of follicles.

1. *\*Butomus umbellatus* L.

Flowering Rush

Naturalized (native of Eurasia)

Tall herb growing in mud or shallow water; leaves linear, basal; flowers hypogynous, regular, bisporangiate; sepals 3; petals 3; stamens 9; carpels 6; fruit an aggregate of follicles.

REFERENCE: Roberts 1972:83-85 [Cols.: 11 Sep 1971—five colonies in the Olentangy R. between Fifth and Lane Avenues at the OSU campus, in 6 inches of water along marshy shore on E bank, Roberts 2047; 3 Oct 1971—one clump 1½ feet in diameter in the Scioto R. at Whittier St. Extension, ¼ mi. above Greenlawn Dam, in one foot of water in sandy substrate, approx. 15 yards from shore, Roberts 2241].