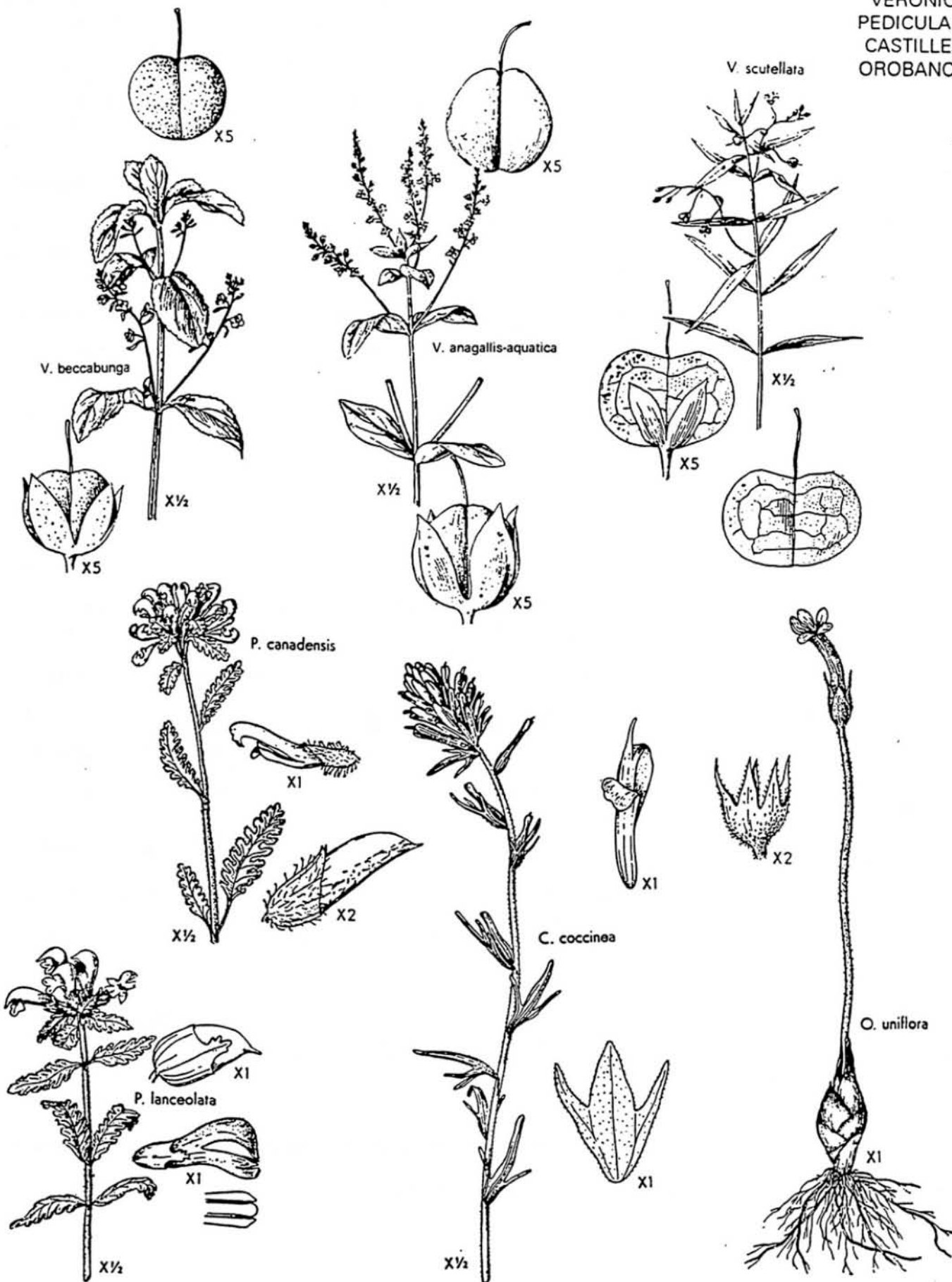


VERONICA  
PEDICULARIS  
CASTILLEJA  
OROBANCHE



HERBARIUM RECORDS: 29 Oct 1982—small island in Olentangy R. just SE of Fawcett Center, mud-flat, *Les 331*; 3 Nov 1982—muddy banks of Olentangy R., due E of Antrim Park lake, *Stuckey & Les 333*; 5 Jul 1991—E bank of Olentangy R., OSU campus, just S of Lane Ave. bridge, Clinton Twp., *Lowden 4757* (only specimen seen in flower).

12. †*Veronica anagallis-aquatica* L.

Brook-pimpernel, Water Speedwell

Stems glabrous; leaves oblong-lanceolate to ovate, opposite, sessile along flowering stems; corolla light blue-purple; capsules not or scarcely notched, about as long as wide; pedicels ascending. Syn.: *V. anagallis* L.

REFERENCES: Riddell 1834:157 (the bed of small rivulets); Sullivant 1840:39; Craig 1890:93 (several large specimens were found last summer in the small swamp W of the lake); Selby & Craig 1890:13; Cooperrider 1995:477 (illus. p. 478).

HERBARIUM RECORDS: 29 Aug 1927—Cols., *Wherry & Pennell 13502* (CINC); 15 Jul 1988—Highbanks Metro Park (Delaware Co.), sandbars & rocky shallow areas along Olentangy R., *Watts 447* (OS, OWU).

13. *Veronica scutellata* L.

Marsh Speedwell

Stems glabrous, ascending to weakly erect; leaves opposite, linear to lanceolate, sessile, marginal teeth appearing glandular; flowers in axillary racemes, pedicels less than 1 cm long; somewhat deflexed; corolla pale red-purple to blue; capsules glabrous, exceeding calyx.

REFERENCES: Riddell 1834:157 (wet prairies); Sullivant 1840:39; Craig 1890:94 (occurs sparingly in a small bog in the W part of the island and N of the duck pond); Selby & Craig 1890:13; Cooperrider 1995:475 (illus. p. 476).

HERBARIUM RECORDS: 4 Jul 1891—Worthington, *Selby* (OS, WOOS); 28 Jun 1892—Cols. & Franklin Co., *Bogue*.

21. PEDICULARIS L. Wood Betony, Lousewort

Leaves toothed or pinnatifid, sometimes chiefly basal; calyx usually oblique; corolla yellow or tinged with purple or red, strongly 2-lipped, upper lip arched, laterally flattened, enclosing the 4 stamens; lower lip with 2 longitudinal folds or crests; capsule asymmetric, pointed; seeds several to many.

a Flowering in spring; calyx split in front, otherwise nearly entire; leaves alternate; capsule flattened, lance-oblong, in fruit twice as long as calyx. 1. *P. canadensis*

a' Flowering in autumn; each half of calyx with a leaflike appendage; leaves partly opposite; capsule ovoid, in fruit not twice as long as calyx. 2. *P. lanceolata*

1. *Pedicularis canadensis* L.

Common Lousewort, Wood-betony

Stems woolly pubescent below inflorescence; leaves mostly basal, cauline leaves alternate, depth of sinuses more than half the way to midrib; flowers in terminal spike-like racemes; calyx shallowly 2-lobed, without appendages; corolla bilabiate, upper lip hooded, yellow or red-purple.

REFERENCES: Riddell 1834:157 (open woods); Sullivant 1840:38; Selby & Craig 1890:13; Cooperrider 1995:494 (illus. p. 493).

HERBARIUM RECORDS: 1840—Cols., *Sullivant*; May 1890—Central College, Cols., *Selby*; May 1891—Central College, *Selby* (WOOS); 7 May 1892—Georgesville, *Werner*; 17 May 1892—Georgesville, *E. M. Wilcox*; 28 May 1892—Central College, *W. Kellerman*; 4 May 1895—Georgesville, *Osburn*; 28 Sep 1982—Highbanks Metro Park (Franklin & Delaware Cos.), blufftop, *G. Moore 301*; 31 May 1993—jct. of Graessle Rd. & Rt. 665, bluffs, Battelle Darby Metro Park, Pleasant Twp., *Lowden 5058*.

2. *Pedicularis lanceolata* Michx.

Swamp Lousewort

Stems glabrous below terminal spike-like racemes; leaves mostly opposite, blades shallowly pinnately lobed, depth of sinuses less than half way to midrib; calyx deeply 2-lobed, each with an apical leafy extension; corolla bilabiate, cream to yellow-green.

REFERENCES: Riddell 1834:157 (*Pedicularis pallida* Torr., wet prairies); Sullivant 1840:38 (*Pedicularis pallida* Pursh); Selby & Craig 1890:13; Cooperrider 1995:492 (illus. p. 493).

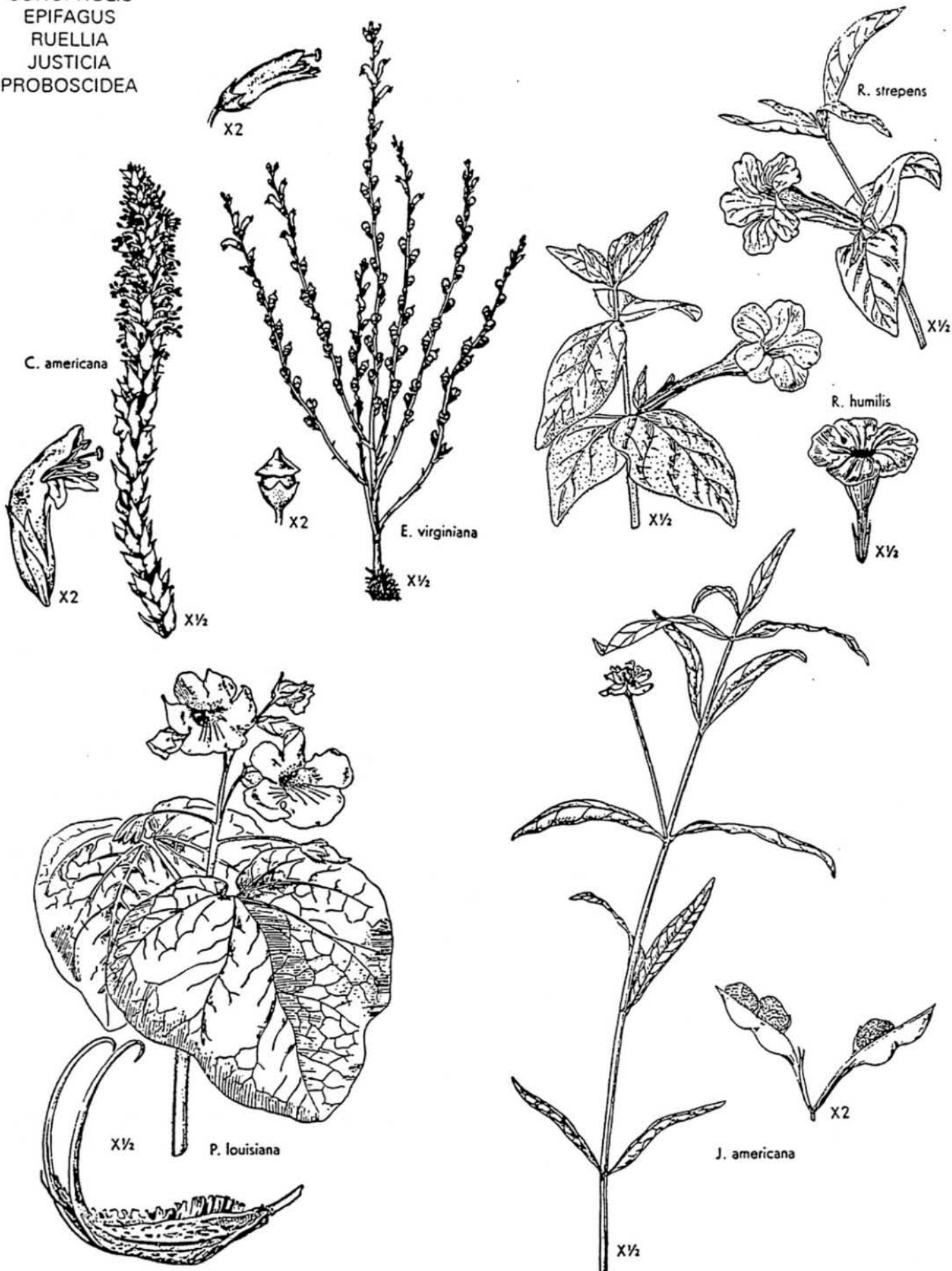
HERBARIUM RECORDS: 12 Oct 1890—Cols., *Selby*; 12 Sep 1891—Cols., *W. Kellerman*; 12 Sep 1892—Franklin Co., *Selby*; 17 Sep 1991—E bank of Big Darby Creek, just N of Rt. 40, Prairie Twp., *Lowden 4848*.

NOTE: Evidently Riddell's and Sullivant's *Pedicularis pallida* belongs here.

22. CASTILLEJA Mutis

Leaves of basal rosettes mostly entire; stem-leaves alternate, usually 3-5-cleft; flowers in terminal spike, floral bracts usually 3-5-lobed, scarlet, yellow, or white at tip; calyx tubular, 2-3 cm long, deeply 2-lobed; corolla pale yellow, little longer than calyx, 2-lipped; stamens 4, not exerted.

CONOPHOLIS  
EPIFAGUS  
RUELLIA  
JUSTICIA  
PROBOSCIDEA



1. *Castilleja coccinea* (L.) Spreng.

Painted-cup, Indian Paintbrush

Stems pubescent; leaves alternate or lobed into 3-5 linear segments, some leaves in a basal rosette; flowers in terminal spicate inflorescences, borne in axils of showy 3-5 lobed bracts, scarlet or orange at apex; corolla bilabiate, whitish or greenish-yellow.

REFERENCES: Sullivant 1840:38 (*Euchroma coccinea* Nutt.); Selby & Craig 1890:13; Cooperrider 1995:491 (illus. p. 493).

HERBARIUM RECORDS: 1840—Cols., Sullivant; 9 May 1891—Big Darby & Big Darby R., Selby (OS, WOOS); 6 Jun 1891—Harrisburg, Cols., Selby; 7 May 1892—Georgesville, Werner; 17 May 1892—Georgesville, near Cols., E. M. Wilcox; 15 Jul 1892—Georgesville, Bogue; 22 May 1899—Big Darby, Cols., Selby.

## OROBANCHACEAE, Broom-rape Family

Low, somewhat fleshy, nongreen herbs parasitic on roots; leaves alternate, scalelike; flowers hypogynous, perfect, in spikes or racemes or solitary; calyx with 2-5 lobes or teeth; corolla of 4 or 5 united petals, 2-lipped; stamens 4, on corolla tube; carpels 2, united; style 1, slender; ovary 1-loculed, with 2 or 4 parietal placentae; capsule many-seeded.

a Flowers solitary at ends of leafless stalks; corolla white or lavender. 1. OROBANCHE

a' Flowers in spikes or spikelike racemes; stems with scalelike leaves.

b Stems stout, usually unbranched; flowers crowded in inflorescence. 2. CONOPHOLIS

b' Stems slender, usually much branched; flowers not or scarcely crowded; scalelike leaves 2-4 mm long, not overlapping. 3. EPIFAGUS

### 1. OROBANCHE L. Broom-rape

White, brownish, or purple, glandular-pubescent, parasitic on many species of plants; calyx 5-lobed or 5-cleft; corolla 15-25 mm long, white, lavender, or purple, tube usually curved and longer than the 2-lipped limb.

#### 1. *Orobanche uniflora* L.

One-flowered Broom-rape, One-flowered Cancer-root

Plants glandular-pubescent, parasitic; stems underground; peduncles aerial, scape-like, each bearing a single flower; corolla whitish to lavender, lobes rounded.

REFERENCES: Selby 1891a:111a (*Aphyllon uniflorum* A.Gray); Cooperrider 1995:502 (illus. p. 501).

HERBARIUM RECORDS: 13 May 1891—Insane Asylum, Cols., Selby; 13 May 1891—near Cols., on roots of grasses, Selby; 26 May 1934—Indian Springs, Chapman; 28 May 1936—Sharon Twp., Wolf & S. Humphrey; 22 May 1937—Prairie Twp., Gordon.

### 2. CONOPHOLIS Wallr. Squawroot

Stout glabrous unbranched yellow or light-brown herb parasitic on roots of several woody species; scale leaves ovate, up to 2 cm long, many, overlapping; flowers sessile, bracted, in crowded spike; calyx irregularly toothed, split on lower side; corolla 10-15 mm long, 2-lipped; stamens exerted.

#### 1. *Conopholis americana* (L.) Wallr.

Squaw-root, Cancer Root

Plants glabrous; parasitic on roots of oak; stems aerial, brown, thick, many flowered; flowers and fruits crowded in a dense spicate inflorescence, brown scales overlapping; calyx toothed, deeply split on lower side; corolla pale yellow; stamens about as long as corolla.

REFERENCES: Sullivant 1840:38 (*Orobanche americana* L.); Selby & Craig 1890:13; Cooperrider 1995:500 (illus. p. 501).

HERBARIUM RECORDS: 13 Sep 1890—Cols., Werner (CLM, specimen mixed with *Epifagus virginiana*); 7 May 1892—Georgesville, Detmers; 7 May 1892—Franklin Co., W. Kellerman; 21 May 1970—Blendon Woods, on damp hillsides under oak trees, occasional in thick clumps, Boone 160; 25 May 1982—Highbanks Metro Park (Franklin & Delaware Cos.), infrequent in oak-hickory, G. Moore 213; 23 May 1986—Highbanks Metro Park (Delaware Co.), dry ridges, woods, Watts 313 (OS, OWU); 2 Jun 1991—Hoover Dam Park, in woods N of entrance off Cubbage Rd., Blendon Twp., Lowden 4651.

### 3. EPIFAGUS Nutt. Beech-drops



Slender glabrous branched yellow, brown, or purple herbs parasitic on roots of *Fagus*; leaves scalelike; flowers in paniced spikelike racemes, dimorphic, upper, with open corolla, mostly not seed-forming, lower cleistogamous and seed-forming; calyx 5-lobed; corolla of upper flowers about 1 cm long, cylindric, 4-lobed, of lower flowers caplike.

1. *Epifagus virginiana* (L.) Barton

Beech-drops

Plants glabrous, tan to brown-purple, parasitic on roots of beech; stems aerial, many-flowered, conspicuously branched; flowers and fruits openly spaced along branches, appearing racemose to paniculate; corolla tan with purple stripes.

REFERENCES: Riddell 1834:156 (dense and shady woods); Sullivant 1840:38; Craig 1890:54, 94 (rare, grows in moist shady places in the woods on or near the roots of beech trees, 9 Sep 1882, 2 Oct 1887, University Farm 4 Oct 1887); Selby & Craig 1890:13; Cooperrider 1995:500 (illus. p. 501).

HERBARIUM RECORDS: 188—Cols., Craig; Oct 1888—Cols., Weed & Craig; 4 Sep 1890—Big Walnut Creek, Selby; 13 Sep 1890—Cols., Werner (CLM); Aug 1890—near Cols., E. V. Wilcox; 7 Aug 1890—Worthington, Selby; 3 Sep 1892—Cols., Bogue; 19—Cols., J. H. Schaffner; 20 Oct 1934—beechwoods in Bexley, Gordon & J. H. Schaffner; 11 Apr 1970—along Flint Ravine near Camp Mary Orton, approx. 2 mi. N of Worthington along Rt. 23, common under beech, Sharon Twp., Haynes 3259; 10 May 1970—Camp Johnson, 8 mi. N of OSU on N. High, under beech trees, Boone 172; 25 Aug 1977—Highbanks Metro Park (Franklin Co.), under beech and maple trees, on N boundary of park, W. Carr 720; [ca. 1982]—Blendon Woods, Owens (OS, specimen mixed with *Fagus grandifolia*); 28 Sep 1982—Highbanks Metro Park (Franklin & Delaware Cos.), beech-maple, common, G. Moore 214.

## ACANTHACEAE, Acanthus Family

Herbs; leaves opposite, simple, entire, without stipules; flowers hypogynous, bisporangiate; sepals 5, narrow, almost separate; corolla almost regular to 2-lipped; hypogynous disk present; stamens 2 or 4, on corolla tube; 1 or 3 staminodes sometimes present; carpels 2, united; style 1; ovary 2-loculed; seeds on curved projections from the axile placentae; capsule splitting elastically.

a Corolla 3 cm long or more, funnellform; stamens 4. 1. **RUELLIA**

a' Corolla about 1.5 cm long, zygomorphic, 2-lipped; stamens 2. 2. **JUSTICIA**

### 1. RUELLIA L.

Leaves ovate or lance-ovate; flowers large, solitary or in few-flowered clusters, axillary or terminal on branches; corolla lavender-blue, funnellform, limb not quite regular, 5-lobed; stamens 4, lower pair the longer; a staminode usually present; capsule ovoid, somewhat flattened.

a Calyx-lobes lanceolate, 2 mm wide or more, villous-ciliate, with flat tips, about as long as capsule. 1. *R. strepens*

a' Calyx-lobes linear to setaceous, usually 1 mm wide or less, with slender tips, longer than glabrous capsule; flower clusters sessile or subsessile; bracts lanceolate. 2. *R. humilis*

#### 1. *Ruellia strepens* L.

Smooth Ruellia

Stems and leaves pubescent; leaves opposite, lance-ovate, more than 3 cm wide and 8 cm long; flowers 1-3 on axillary peduncles from 1-3 median nodes, subtended by 2 ovate leafy bracts; calyx lobes lanceolate, 2-3 mm wide; corolla lavender blue, slightly zygomorphic, funnellform; stamens 4.

REFERENCES: Riddell 1834:157 (bottomland); Sullivant 1840:37; Craig 1890:94 (rare, in the E part of the woods and on the island N of turn in the road, 15 Aug 1882, 19 Jun 1887); Selby & Craig 1890:13 (#610 & 611); Cooperrider 1995:507 (illus. p. 508).

HERBARIUM RECORDS: Aug 1888—Cols., Craig; 2 Sep 1890—Cols., Werner (CLM); 13 Sep 1890—Cols., Werner; Jul 1891—Cols., Werner (CLM); 3 Sep 1892—Cols., Bogue; 22 Aug 1899—Cols., Selby; 1 Jun 1982—Cooper Rd., Blendon Twp., Owens; 26 Jun 1990—2 mi. S of Darbydale, about 1.5 mi. N of Gay Rd., along the Harrisburg Georgesville Rd., woody area W of Big Darby Creek, Pleasant Twp., Lowden 4420.

#### 2. †*Ruellia humilis* Nutt. var. *calvescens* Fernald

Wild Petunia

Leaves sessile or subsessile, acute to obtuse; calyx lobes narrowly linear, less than 1 mm wide, longer than glabrous capsule.

REFERENCES: Riddell 1834:157 (*Ruellia oblongifolia*, bottomland); Cooperrider 1995:507 (illus. p. 508).

HERBARIUM RECORD: 9 Aug 1977—E border of Darby Creek Metro Park, W of Koebel-Suydam Rd., scattered in fields & along paths, NE of Georgesville, Pleasant Twp., Cusick 17288 (KE).

NOTE: Perhaps *Ruellia oblongifolia* of Riddell belongs here.