

Leaves with deep and rounded sinuses, extending more than half-way to the midrib; lobes and teeth bristle tipped; acorn apex, marked with concentric rings or discontinuous arcs.

REFERENCES: Sullivant 1840:21; Selby & Craig 1890:15 (#753 & 754); Braun 1961:127 (illus. p. 126).

HERBARIUM RECORDS: [ca. 1890]—near Cols., Selby; 8 Aug 1890—Headley's Woods, Selby (OS, WOOS); 13 May 1901—Cols., W. Kellerman; 14 Oct 1905—N. Cols., Fischer; 21 Oct 1934—Cols., J. H. Schaffner; 23 Sep 1967—OSU Campus, cult. around the Oval, Cols., Cooke, Jr.; 26 May 1988—OSU, W of Coffey Rd., NE of College of Veterinary Medicine, Chinery 57.

## BETULACEAE, Birch Family

Shrubs and trees; leaves alternate, simple, stipuled; blades pinnately veined; monoecious; flowers monosporangiate; perianth absent or calyx present; staminate flowers in drooping aments, 1 (apparently) to 3 in axil of each ament-bract, stamens (except in *Alnus*) bifid, each part bearing 1 anther-locule; carpellate flowers epigynous or perianth none, in aments or in small budlike clusters, 2-3 flowers in axil of each ament-bract; 1 or more small bracts at base of each flower; carpel 2, united, stigmas 2, ovary 2-loculed below, 1-loculed above, ovules 4; seeds 1.

- a Leaves not 2-ranked; mature carpellate aments woody, conelike, persistent. **5. ALNUS**
- a' Leaves 2-ranked except sometimes in *Betula*; carpellate aments not woody and conelike.
  - b Carpellate flowers in small scaly buds; fruit 1 cm or more in diameter, covered and exceeded by 2 accrescent bracts. **1. CORYLUS**
  - b' Carpellate flowers in cylindrical or oblong aments; fruit smaller.
    - c Three carpellate flowers in axil of each usually 3-lobed ament-bract; fruit winged, not enclosed in or subtended by an involucre. **4. BETULA**
    - c' Two carpellate flowers in axil of each ament-bract, the bracts soon deciduous; fruit not winged.
      - d Fruit subtended by and much exceeded by 3-lobed leaflike structure; staminate aments emerging in spring from scaly winter-buds; bark dark gray, smooth; trunk fluted. **3. CARPINUS**
      - d' Fruit enclosed in a bladderlike sac; staminate aments present in winter; bark scaly; trunk no fluted. **2. OSTRYA**

### 1. CORYLUS L. Hazelnut

Shrubs; leaves 2-ranked, doubly serrate or incised; staminate aments emerging in autumn, flowering in spring, perianth absent, stamens 4; carpellate flower-cluster a scaly bud, 2 flowers under each scale, only the red stigmas protruding beyond scales; calyx minute; fruit enclosed by involucre of accrescent bracts.

#### 1. *Corylus americana* Walter

Hazel, Hazelnut, American Hazelnut

Shrub; leaves 2-ranked, broadly ovate, doubly serrate; twigs and petioles usually stipitate-glandular and pubescent; involucre of two broad leafy bracts hairy, margins lacinate, prolonged beyond nut; buds rounded at tip.

REFERENCES: Riddell 1834:119; Sullivant 1840:21; Craig 1890:101 (occurs sparingly along the river); Selby & Craig 1890:15; Braun 1961:103 (illus. p. 102).

HERBARIUM RECORDS: Nov 1890—Big Darby Creek, Cols., Selby; 24 Sep 1892—Georgesville, Werner; Aug 1896—Georgesville, W. & Mrs. Kellerman; 8 Oct 1930—OSU Campus, Cols., Hicks; Mar 1933—Jackson Twp., Chapman.

### 2. OSTRYA Scop. Hop Hornbeam

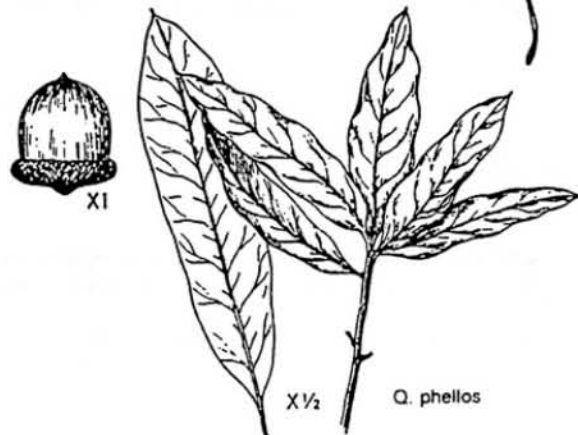
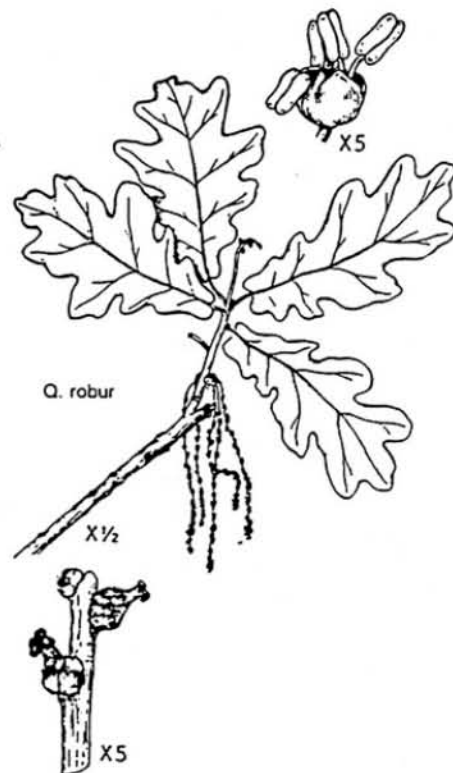
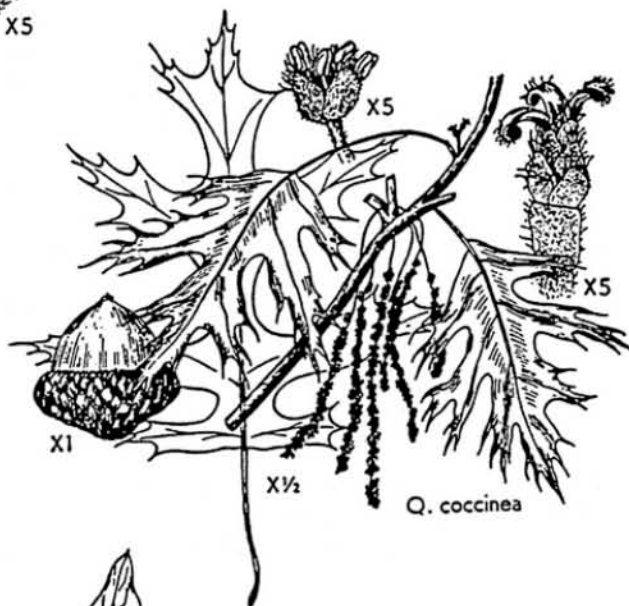
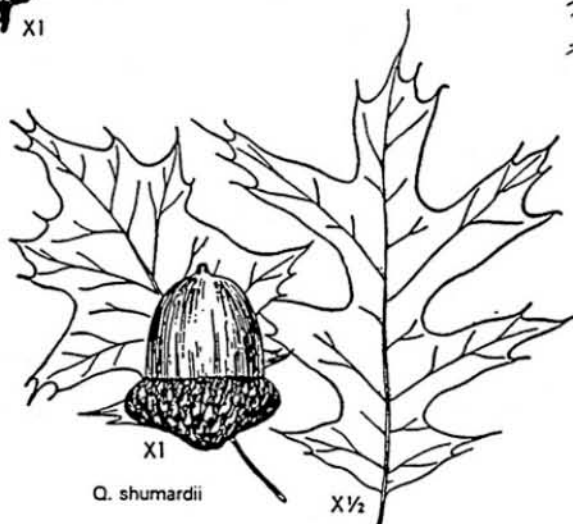
Small tree; bark finely furrowed; twigs often glandular-pubescent; blades acuminate, serrate or doubly serrate; staminate flowers without perianth, 1-3 aments from buds on stems of previous year; carpellate aments solitary, terminal on branches of current year, each flower in a closed sac, the sacs in pairs in axil of an early-deciduous ament-bract; calyx minute; nut enclosed in accrescent sac, whole ament like inflorescence of *Humulus*, Hops.

#### 1. *Ostrya virginiana* (Mill.) K.Koch

Hop Hornbeam, Ironwood

Small tree; bark splitting into thin scaly plates; leaves elm- or birch-like; staminate aments slender, pendulous; fruiting ament resembles *Humulus* (Hop); nut smooth, enclosed in a bladder involucre, these overlapping in a terminal cluster.

QUERCUS



REFERENCES: Riddell 1834:119 (*Ostrya virginica*); Sullivant 1840:21 (*Ostrya virginica* Willd.); Craig 1890:102 (*Ostrya virginica* Willd.; a single specimen in the woods near Woodruff Ave., 1 May 1882, 26 Apr 1884, 4 May 1885, 1 May 1887, 2 May 1888); Selby & Craig 1890:15 (*Ostrya virginica* Willd.); Braun 1961:104 (illus. p. 102).

HERBARIUM RECORDS: 189—Cols., Selby; 1897—Neal's [Neil's] Run, *Ruppersberg* 91; 26 Mar 1898—Cols., *W. Kellerman*; 29 Apr 1901—Neil's Run, Cols., *Mead*; Sep 1901—Franklin Co., *J. H. Schaffner*; 9 Apr 1967—S bank of Darby Creek, approx. ½ mi. SW of Darbydale, *Stuckey* 3407; 2 Aug 1967—OSU, Mirror Lake Hollow, Cols., *Cooke*; 8 Apr 1986—OSU, NW corner of St. John's Arena, Cols., *Cooperband* 20; 17 Jun 1986—Highbanks Metro Park (Delaware Co.), mixed woods, *Kasko*; 23 Jun 1991—E bank of the Scioto R., James J. Thomas Park, from Lane Rd. to Lane Ave., Perry Twp., *Lowden* 4735.

### 3. CARPINUS L. Hornbeam

Small tree; bark dark gray, smooth, trunk with fluted ridges; leaves 2-ranked, serrate or doubly serrate, acuminate; 1-3 staminate aments from buds on stems of previous year, flowers without perianth; carpellate aments terminal on branches of season, flowers in pairs in axil of bract, calyx very small; fruit a ribbed nutlet in axil of leaflike involucre.

#### 1. *Carpinus caroliniana* Walter

Hornbeam, Musclewood, Blue-beech, Ironwood

Small tree; bark smooth, gray with furrows like taut muscles; involucre leaf-like, 3-lobed, subtending the fruit; nutlet ribbed.

REFERENCES: Riddell 1834:119 (*Carpinus americanus*); Sullivant 1840:21 (*Carpinus americana* Michx.); Craig 1890:102 (the only specimen is in the S part of the woods); Selby & Craig 1890:15; Braun 1961:105 (illus. p. 102).

HERBARIUM RECORDS: 1891—Cols., *Werner*; 28 Jun 1892—Worthington Woods, Cols., *W. Kellerman*; 30 May 1896—Reservoir Park, *M. Wright*; 1897—S of Marble Cliff, *Ruppersberg* 53; 29 Apr 1901—Neil's Run, Cols., *Mead*; 30 Apr 1901—Cols., *Mead*; Sep 1901—Franklin Co., *J. H. Schaffner*; 11 Oct 1901—University Woods, Cols., *Hartford*; 12 Oct 1901—N Cols., *Halverstadt*; 8 Aug 1942—OSU, Cols., *H. Reed*; 9 Apr 1967—along S bank of Darby Creek, approx. ½ mi. SW of Darbydale, Pleasant Twp., *Stuckey* 3406; [ca. 1982]—Blendon Woods, *Owens*; 2 Jun 1985—OSU W. Campus, Cols., *Cho* 40; 24 Jul 1986—Highbanks Metro Park (Delaware Co.), woodlands, common, *Kasko*; 23 Jun 1991—E bank of Scioto R., James J. Thomas Park, Perry Twp., *Lowden* 4728; 5 Jul 1991—E bank of the Olentangy R., OSU Campus, between Lane Ave. & King Ave. bridges, Clinton Twp., *Lowden* 4766.

### 4. BETULA L. Birch

Trees and shrubs; staminate aments formed in autumn of previous season, flowers opening in spring; staminate flowers 3 in axil of each ament-bract, calyx very small; carpellate ament-bracts crowded, usually 3-lobed, each subtending three flowers, perianth none; fruit a nutlike samara with 2 lateral wings.

#### 1. †*Betula pumila* L.

Low Birch, Swamp Birch

Shrub, twigs soft-downy or tomentose; leaves white or gray pubescent beneath, obtuse to broadly rounded above, coarsely dentate; scales of fruiting catkins with widely divergent lateral lobes; fruits winged.

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

NOTE: Sullivant 1840:21 and Selby & Craig 1890:15 referred to this plant as *Betula glandulosa* Michx. based on plants collected in adjacent counties. Not mapped for Franklin Co. by Braun 1961:109 (illus. p. 107).

### 5. ALNUS Mill. Alder

Shrubs and trees; pith 3-angled; winter-buds stalked; both kinds of aments formed the previous summer or autumn, flowers opening in spring; staminate aments pendulous, 3 flowers in axil of each ament-bract, calyx 4-parted, minute, stamens 4, filaments not divided; carpellate aments ellipsoid, each ament-bract subtending 2 flowers without calyx, the ament persistent, becoming woody.

#### 1. \**Alnus glutinosa* (L.) Gaertn.

Black Alder

Cultivated to locally naturalized (native of Eurasia & N Africa)

Tree; leaves broadly rounded with apices usually slightly notched; mature carpellate aments woody, conelike, persistent.

REFERENCE: Furlow 1979:196.

HERBARIUM RECORDS: 18 May 1903—OSU Campus, cult., *J. H. Schaffner*; Spring 1912—OSU Campus, Cols., cult., *J. H. Schaffner*; Apr 1915—[OSU] Campus, *N. Musselman*; 3 Nov 1929—Minerva Park, escaped from cultivation along stream, Cols., *Gordon & Chapman*; 15 Jun 1935—Minerva Park, Cols., *Blaydes*; 6 May 1984—OSU Campus, along Mirror Lake, *Kattler* 32.

NOTE: Furlow (1979) cites a collection from "along Alum Creek near the Main St. Bridge, Cols., *Furlow* 355 (MSC)." See Braun 1961:110.

CORYLUS  
OSTRYA  
CARPINUS  
BETULA  
ALNUS  
PHYTOLACCA

