

## LAB 11 – ON CAMPUS – MAST ARBORETUM

Family	Genus	Species	Common Name	Order	Page
Lythraceae	Lagerstroemia	indica	crapemyrtle	1	2
Juglandaceae	Carya	myristiciformis	nutmeg hickory	2	2
Fagaceae	Quercus	texana	Nuttall oak	3	3
Rosaceae	Pyrus	calleryana	Callery pear	4	3
Fagaceae	Quercus	muehlenbergii	chinkapin oak	5	4
Anacardiaceae	Pistacia	chinensis	Chinese pistache	6	4
Aceraceae	Acer	palmatum	Japanese maple	7	5
Ulmaceae	Ulmus	parvifolia	Chinese elm	8	5
Pinaceae	Cedrus	deodara	Deodar cedar	9	6
Cupressaceae	Cunninghamia	lanceolata	Chinese fir	10	6
Ulmaceae	Zelkova	serrata	Japanese zelkova	11	7
Berberidaceae	Nandina	domestica	sacred bamboo	12	7
Fagaceae	Castanea	mollissima	Chinese chestnut	13	8

### crapemyrtle Lythraceae *Lagerstroemia indica*

**Leaf:** Opposite or some leaves alternate or whorled, simple, elliptical, entire margin, 1 1/2 to 3 inches long, dark green above, paler below.

**Flower:** Very attractive, white, pink red or purple (depending on cultivar), occurring in long (8 inch) spike-like clusters, appearing in late summer.

**Fruit:** Dry, 6-parted, brown capsule in upright spikes, each capsule 1/2 inch long, persistent through the winter.

**Twig:** Slender, brown (initially red or green), ridged or angled, buds very small.

**Bark:** Gray-brown, smooth, exfoliating and exposing shades of brown, reddish brown and green, very attractive.

**Form:** Medium to large shrub or a small multi-stemmed tree to 40 feet.



**Notes:**

### nutmeg hickory Juglandaceae *Carya myristiciformis*

**Leaf:** Alternate, pinnately compound, 5 to 11 leaflets but commonly 9; silver or yellow scales beneath.

**Flower:** Monecious, after leaves, not showy.

**Fruit:** Nut almost 2 inches long, 4 winged suture lines, matures in fall and has sweet meat.

**Twig:** Brown to grey, leaf scar heart shaped with many bundle scars that may appear like an alien or monkey face. Terminal bud with valvate, yellowish fuzzy scales.

**Bark:** Smoother than most hickories, particularly when small; grey.

**Form:** A large tree up to 100 feet tall.

\*Not a VT Fact Sheet, Info from Samuelson & Hogan's Forest Trees ISBN: 0131138944, photos Jeremy Stovall and Mike Fountain



**Notes:**

### Nuttall oak Fagaceae *Quercus texana*

**Leaf:** Alternate, simple, 4 to 7 inches long, 5 to 7 bristle-tipped lobes of irregular length, deep sinuses, dull dark green above, paler below with axillary tufts.

**Flower:** Monoecious; males in long drooping catkins, yellow-green; females very small spikes in leaf axils, appearing with the leaves.

**Fruit:** Striped, oblong reddish brown acorn, 1 inch long; scaly cap covers about 1/2 of nut; matures in 2 seasons in the fall.

**Twig:** Slender to moderate, glabrous, reddish brown; clustered terminal buds are slightly angled, reddish brown with a small amount of fuzz on pointed tips.

**Bark:** Gray-brown, initially quite thin and smooth, later developing narrow scaly ridges and shallow fissures.

**Form:** A medium to large tree up to 100 feet tall. It has a tendency to retain dead limbs and has a narrower crown than many other bottomland oaks.



**Notes:**

### Callery pear Rosaceae *Pyrus calleryana*

**Leaf:** Alternate, simple, heart-shaped to ovate with a finely serrated margin, 2 to 3 inches in length, shiny green above, paler and dull below.

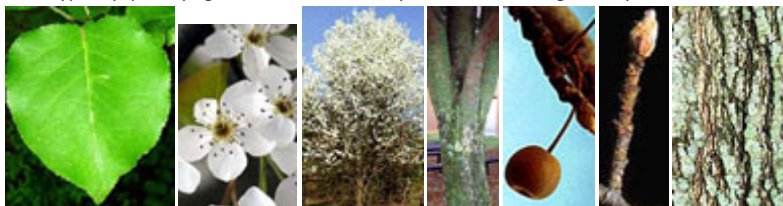
**Flower:** Large (2 to 4 inches across) clusters of showy white flowers (1/2 to 3/4 inch across) appearing before or with the leaves. Often so dense the entire tree appears white.

**Fruit:** Small (1/2 inch diameter), round, brown pome, very bitter.

**Twig:** Glossy brown to reddish brown, medium in texture, spur shoots present; terminal buds are large (1/4 to 1/2 inch long), ovate, and covered in light brown wooly hairs.

**Bark:** At first smooth with numerous lenticels, light brown to reddish brown, becoming grayish brown with shallow furrows and scaly ridges.

**Form:** Typically quite upright and conical with very narrow branch angles. May reach 60 feet in height.



**Notes:**

### chinkapin oak Fagaceae *Quercus muehlenbergii*

**Leaf:** Alternate, simple, obovate or oblong, large coarse gland tipped teeth on margin, 4 to 7 inches long, dark, shiny green above, much paler below.

**Flower:** Monoecious; male flowers are yellow-green long catkins (3 to 4 inches long), females are green to reddish, very small in leaf axils. appearing with the leaves.

**Fruit:** Acorn, nut 1/2 to 1 inch long, broadest below the middle, thin bowl-shaped cap covers about 1/3 of acorn and forms a tattered fringe on the margin of cap, dark brown when mature.

**Twig:** Slender to moderate, orange-brown, buds cluster at branch tips, terminal buds 1/8 inch long, pointed, chestnut brown, individual scales with frosted edges.

**Bark:** Thin, light gray, rough and flaky.

**Form:** Medium sized tree to 60 feet, with a rounded crown.



**Notes:**

### Chinese pistache Anacardiaceae *Pistacia chinensis*

**Leaf:** Alternate, pinnately compound, 10 to 12 inches long, 10 to 12 lanceolate to narrow ovate leaflets, entire margins, tapering pointed tips, shiny green above, paler below.

**Flower:** Dioecious; red to green, males in tight 2 to 3 inch long clusters along last years stem, females in looser, longer groups, somewhat showy since they appear before the leaves in early spring.

**Fruit:** Bright red (later turning dark blue), round drupe, 1/2 inch in diameter, in long grape like cluster that ripen in early fall.

**Twig:** Stout, gray-brown, numerous lighter lenticels, terminal buds large and ovate with obvious large scales; large shield-shaped, raised leaf scars.

**Bark:** Gray-brown with shallow reddish brown furrows, later forming rectangular to almost square flat-topped ridges.

**Form:** Small tree reaching up to 40 feet tall with a nearly equal spread.



**Notes:**

### Japanese maple *Aceraceae Acer palmatum*

**Leaf:** Opposite, simple, orbicular in outline, 2 to 5 inches long, serrated margin, 5 to 7 deeply palmate lobes, some cultivars so deeply lobed that leaf appears compound; color highly variable depending on cultivar, commonly deep red.

**Flower:** Monoecious; inconspicuous, small, red to purple, in terminal hanging clusters, appearing in mid to late spring.

**Fruit:** Double samara, 3/4 to 1 inch long, divergent (90 degrees) wings, reddish brown, maturing in late summer and a bit persistent.

**Twig:** Slender, glabrous, red or green; buds broadly conical, green or red, base of bud hidden by tan, fuzzy fringe.

**Bark:** Smooth, light gray, with a somewhat fluted trunk.

**Form:** A small tree, 10 to 25 feet in height, round crown, typically multistemmed or branches low. Some cultivars have drooping branches.



**Notes:**

### Chinese elm *Ulmaceae Ulmus parvifolia*

**Leaf:** Alternate, simple, elliptical to broadly lanceolate, up to 2 1/2 inches long, pinnately veined, serrate margin; base of leaf is conspicuously inequilateral, shiny dark green above and nearly glabrous, paler below.

**Flower:** Monoecious; inconspicuous, light green in small tight clusters, appearing in late summer and early fall.

**Fruit:** A flattened, winged samara, nearly round but notched at the top, 1/2 inch long, light reddish brown, occur in tight clusters in the fall.

**Twig:** Slender, zigzag, brown, with obvious orange lenticels, maybe slightly pubescent; false terminal bud pushed over slightly to one side, quite small, ovate, reddish brown.

**Bark:** Very distinctive, even when young. Mottled green, gray and orange, jigsaw-like puzzle pieces separated by red-orange (inner bark). Trunk may become fluted.

**Form:** A small tree reaching up to 70 feet tall with a graceful spreading wide crown made up of fine branches.



**Notes:**

### Deodar cedar Pinaceae *Cedrus deodara*

**Leaf:**Evergreen needles, dark green but may have some silvery bloom giving them a blue-green color; 1 to 2 inches long, sharp pointed; occur singly on new growth and than later on spur shoots; remaining on the tree for 3 to 6 years.

**Flower:**Monoecious; male cones 2 to 3 inches long on the lower parts of crown; female cones erect, purplish, occur on upper portions of crown.

**Fruit:**Upright cones, 3 to 4 inches long and 3 inches across; deciduous scales; initially green and purplish, then later turning a reddish brown when mature, usually resinous.

**Twig:**Slender, with numerous short spur shoots, branches droop with age; buds are very small and round.

**Bark:**Initially smooth and gray-brown, later developing short furrows with scaly ridge tops.

**Form:**Young trees have a broad pyramidal crown that becomes wider with age; branch tips and leaders droop and have a fine texture. In the landscape it can reach 80 feet tall but becomes much taller in its native range.



**Notes:**

### Chinese fir Cupressaceae *Cunninghamia lanceolata*

**Leaf:**Evergreen, linear, gradually tapering to a sharp point, 1 to 3 inches long, thick and tough, spirally arranged but displayed two-ranked; shiny dark green above, two broad white stomatal bands below; remain alive for up to 5 years and are very persistent when dead.

**Flower:**Monoecious; males cylindrical in terminal clusters, yellow-brown; females globose, yellow-green and terminal.

**Fruit:**Round cones 1 1/2 to 2 inches across, reflexed pointed scales, usually several together at the ends of branches, persistent.

**Twig:**Green the first year, needles densely arranged, young branches whorled, later becoming more irregular.

**Bark:**Gray-brown on the outside, irregularly scaly and peeling to reveal the reddish brown inner bark.

**Form:**Conical crown with a broad base up to 75 feet tall.



**Notes:**

### Japanese zelkova *Ulmaceae Zelkova serrata*

**Leaf:** Alternate, simple, ovate with an acuminate tip, 1 1/2 to 2 1/2 inches long, pinnately veined, serrate with rounded over teeth; leaves are dark green above and much paler below.

**Flower:** Monoecious; yellow-green, not showy, occur in tight clusters along new stems; appearing before the leaves.

**Fruit:** A small triangular drupe, 1/6 inch long, green and later turning brown, maturing in mid to late summer.

**Twig:** Very slender, zigzag, red-brown in color; buds are reddish brown, cone-shaped, pointed, and widely divergent.

**Bark:** Smooth and red-brown to gray when young with numerous lenticels; remains smooth for many years but eventually exfoliates into small patches, reddish brown in color.

**Form:** A small to medium size tree to 80 feet; low branching vase-shaped tree with very tight branch angles. This appearance is maintained when very young and when very old.



**Notes:**

### sacred bamboo *Berberidaceae Nandina domestica*

**Leaf:** Alternate, evergreen, tri-pinnately compound, leaflets ovate 1 to 2 inches long, entire leaf 10 to 20 inches long, initially reddish bronze when opening in the spring, later turning green and then reddish in the fall.

**Flower:** White, occurring in long (10 to 15 inch) upright clusters, anthers yellow, appearing in summer.

**Fruit:** Red, round, 1/3 inch across, in large spike-like clusters; ripen in late summer and persistent through the next year.

**Twig:** Moderate, reddish, unbranched, yellow inner bark.

**Bark:** Brown, splitting into shallow ridges and furrows.

**Form:** A large many stemmed shrub that forms a round crown, reaches up to 6 feet in height.



**Notes:**

**Chinese chestnut** Fagaceae *Castanea mollissima*

**Leaf:** Alternate, simple, pinnately veined, oblong, 5 to 8 inches long, coarsely serrated (but not as strongly toothed as American chestnut), shiny green above and paler and fuzzy below.

**Flower:** Monoecious; male flowers are small and white, borne in long (4 to 5 inches) slender catkins; female flowers are borne on short aments, 1/2 to 3/4 inch long, appearing in early summer. Males flowers are strongly smelling.

**Fruit:** Large spiny (very sharp) bur 2 to 3 inches in diameter, each contains 2 to 3 edible nuts, 1 to 1 1/4 inches in diameter, shiny brown, typically flattened on 1 to 2 sides, ripen in late summer.

**Twig:** Moderately stout, tan to olive-brown with prominent lenticels, gray fuzzy; buds are gray-brown and pubescent, offset from leaf scar, covered with 2 to 3 overlapping scales.

**Bark:** Gray-brown to brown, furrowed, but without distinguishable patterns.

**Form:** A small tree with low branching and a rounded crown, reaching up to 40 feet tall.



**Notes:**