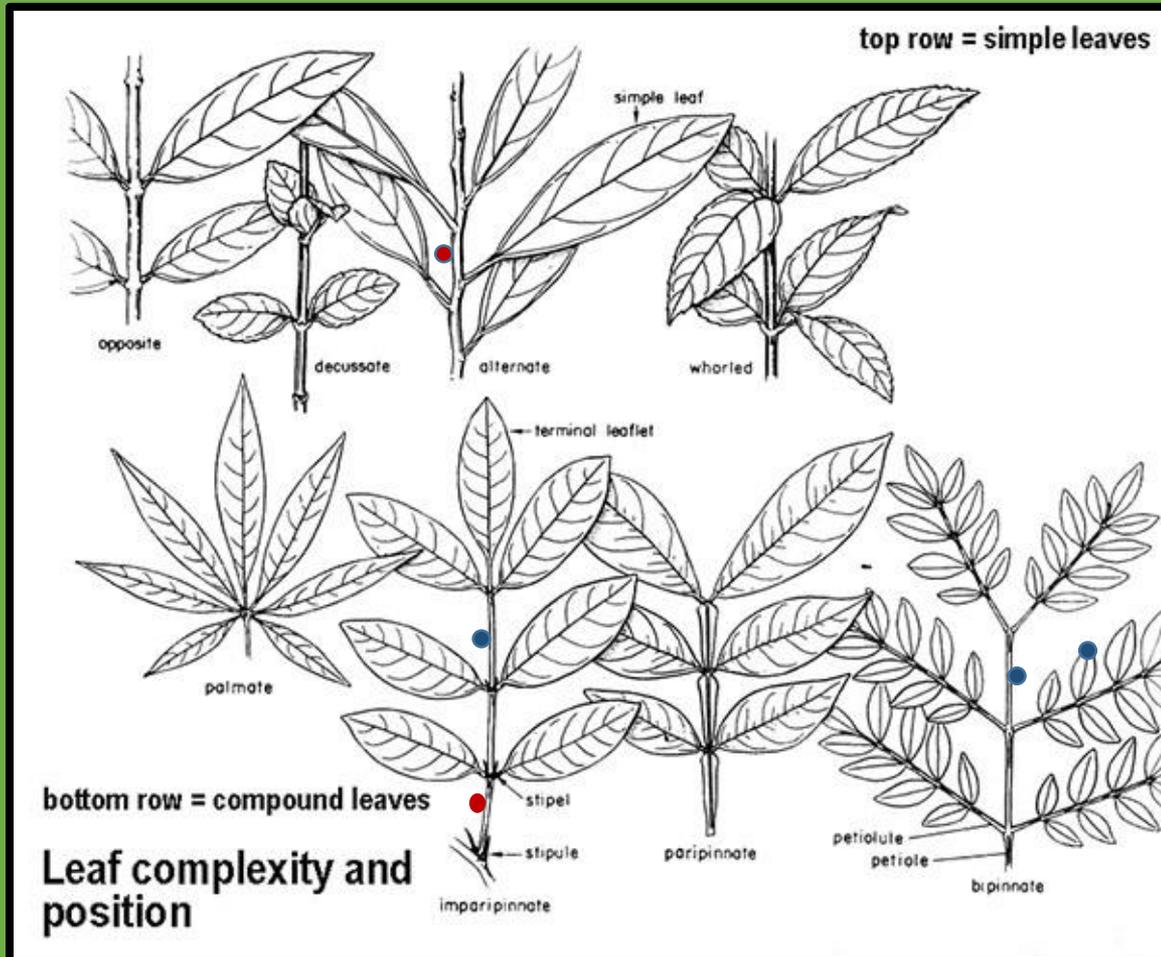


IDENTIFYING SHRUB SPECIES WITH COMPOUND LEAVES

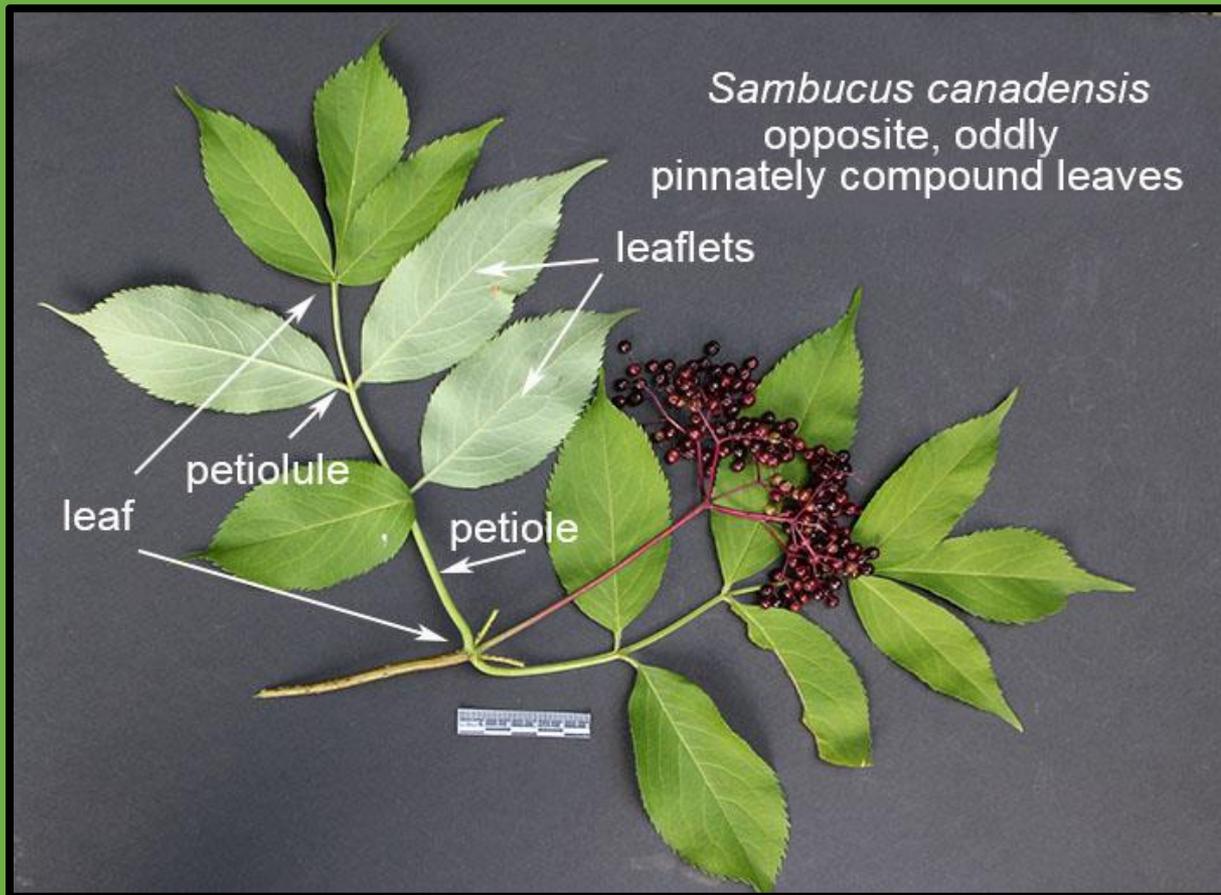
S. A Mori & M. Rothman
Last update: 26 March 2018



The first character used to identify trees is their leaf complexity. The top row consists of simple leaves (i.e., the leaf blades are not divided into leaflets). There are many more species with simple leaves than compound leaves in this preserve. The second character is the position of the leaf compared to other leaves. The most common type of attachment of the leaves to the stems in this forest is alternate.

A leaf is defined as everything beyond the bud (red circles) in the axil of the petiole and the twig it arises from. In simple leaves, the leaf blades are not divided into leaflets (top row). Compound leaves are also delimited by buds in the axil of the petiole and the twig they arise from (red circle) but the leaves are divided into leaflets. There are no buds in the leaflets of compound leaves (blue circles).

FEATURES OF THE COMMON OR AMERICAN ELDERBERRY (*Sambucus canadensis*)



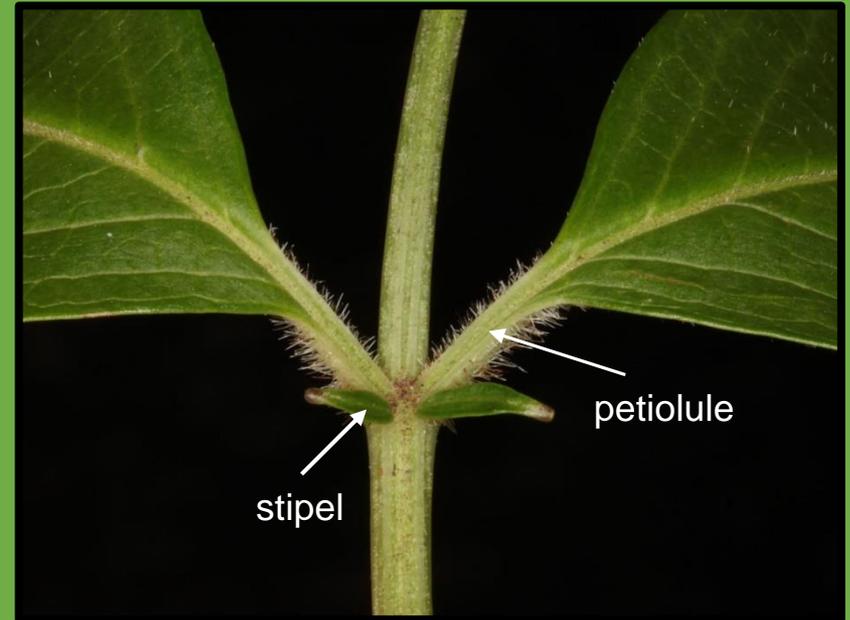
Sambucus was formerly placed in the Caprifoliaceae but according to the Angiosperm Phylogeny Group (Stevens, 2001 onward) it belongs to the Adoxaceae. The same change has also been made with *Viburnum*. As of 1 Jan 2018 the NYBG has not been completely converted to the APG system. *Lonicera* is the only Caprifoliaceae in the Preserve.

The opposite, pinnately compound leaves, serrate leaflet margins, terminal inflorescence, globose fleshy fruits, and other features makes this species easy to identify. Some authors treat it as a subspecies (*S. nigra* subsp. *canadensis* [Nelson et al., 2014])

This species has edible berries that are used in cooking and for medicinal purposes.

STIPELS AT THE BASE OF THE PETIOLULES OF THE AMERICAN ELDERBERRY

In addition to a pair stipules at the base of the petiole (not seen), this species possesses stipels at the base of the petiolules. There are also what appears to be glands at the apices of the stipels. The upper (= adaxial) image shows the upper side of the leaflet and the lower image (= abaxial) shows the lower side of the blade the leaflet. The upper side is glabrous (= without trichomes) and the lower side is covered with white trichomes (hairs).



TERMINAL INFLORESCENCE OF THE AMERICAN EDELBERRY



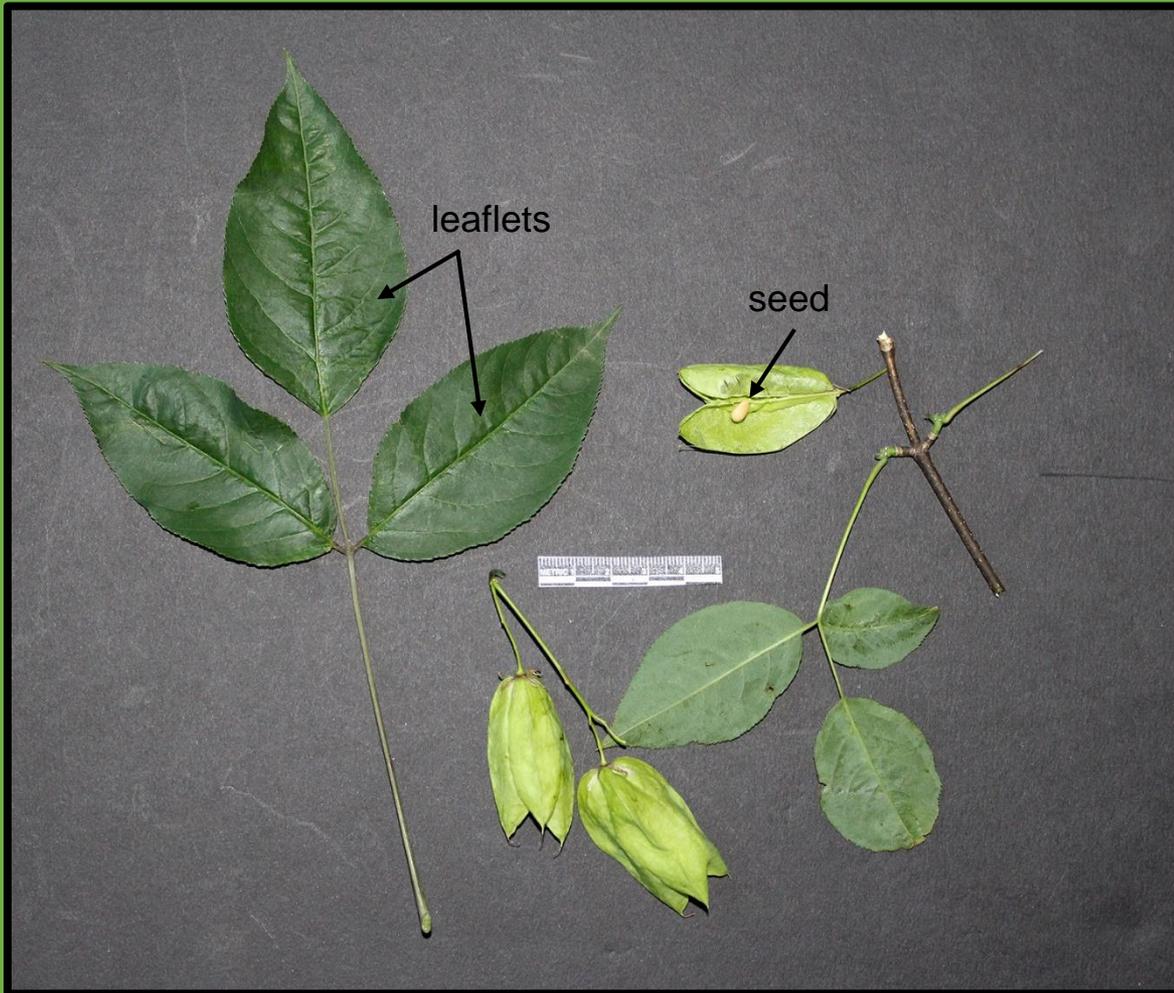
FLOWERS AND INFRACTESCENCE OF THE AMERICAN ELDERBERRY



The flowers are bisexual, have regular symmetry (= actinomorphic), possess superior ovaries, and are 5(6) merous. When mature, the fruits are dark purple or black. Note that the inflorescence splits into five rachises in this species. The other species common in the northeastern United States, *S. racemosa*, has a single dominant rachis and the fruits are generally red at maturity. That species has not been found in the Preserve.



LEAF AND FRUITS OF THE BLADDERNUT (*Staphylea trifolia*)

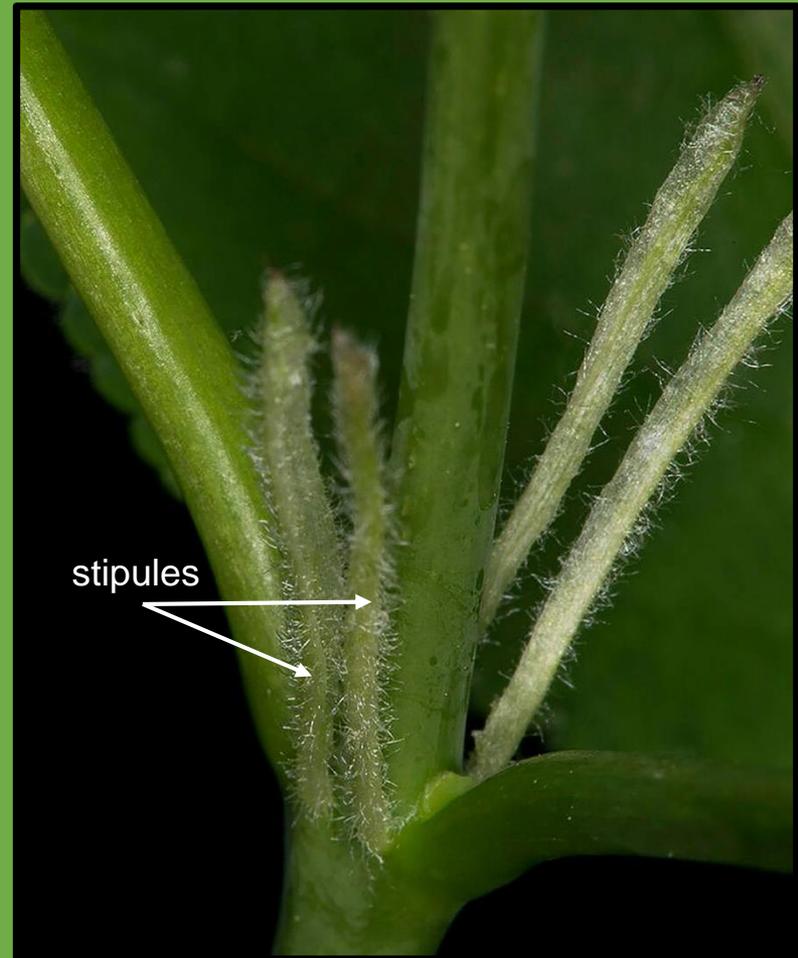
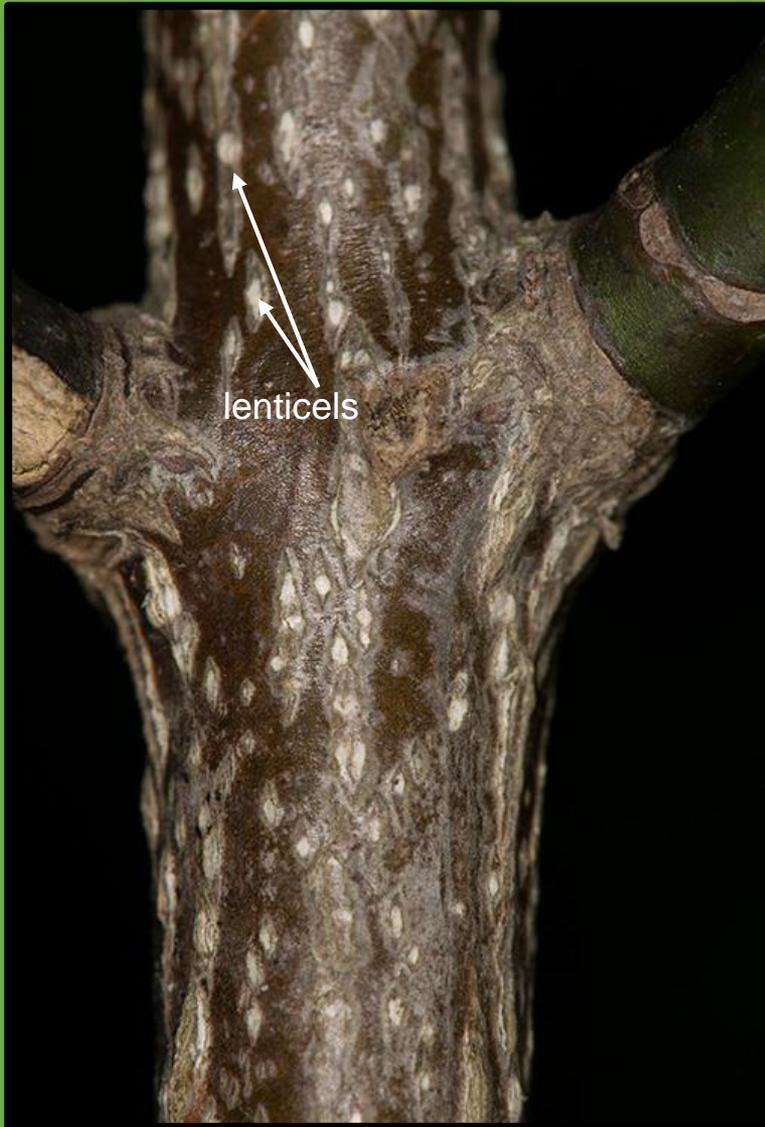


This species is placed in the Staphyleaceae, a small family of about five genera and 50–60 species worldwide. There is only one species in the Preserve. This species is a shrub but other species in the genus and family are trees. The bladder nut is easily recognized by its trifoliate opposite leaves and bladder-like fruits.

**OPPOSITE TRIFOLIOLATE LEAVES OF THE BLADDERNUT
(*Staphylea trifolia*)**



STEM AND STIPULES OF THE BLADDERNUT (*Staphylea trifolia*)



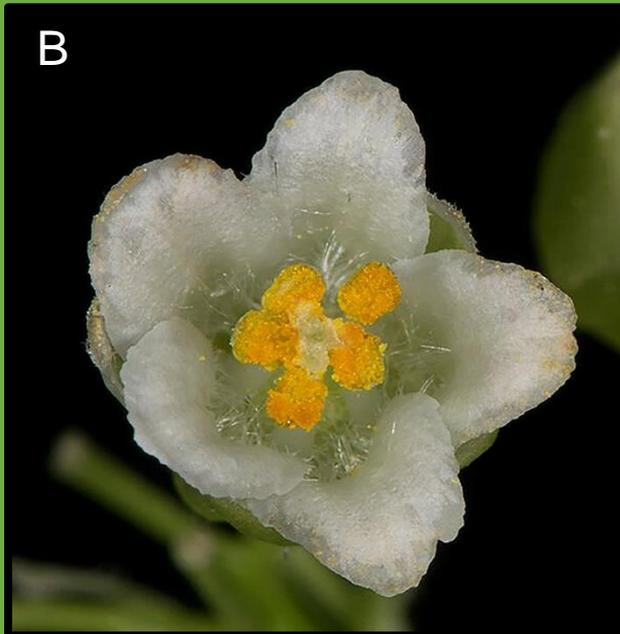
Brown stems with vertically oriented white lenticels and linear pubescent stipules make it easy to identify this species.

INFLORESCENCE AND FLOWERS OF THE BLADDERNUT (*Staphylea trifolia*)



A. Pendent inflorescence. Note the serrate leaflet margins at the right of the image.

B. Yellow anthers covered by pollen.
C. Pistil showing stigma in center of anthers.



FRUITS OF THE BLADDERNUT (*Staphylea trifolia*)

A. The apex of the fruit is divided into 3 parts. Note the style remnant on the upper lobe of the right hand fruit.

B. Remnant sepals at the base of the fruit. The fruit is derived from a superior ovary.

C. Open fruit with a single seed. The fruit is capsular bladder.

