ern Europe, *C. maxima*. This is a vigorous and hardy shrub with large leaves and a large oblong nut enclosed in a husk produced in a long narrow tube and nearly twice the length of the nut. It is this plant and its selected forms which produce the filberts of commerce, which are also probably obtained from hybrids of *C. maxima* and *C. Avellana*. A variety of *C. maxima* with very dark red-purple leaves is the largest and most vigorous of all purple-leaved shrubs. Of the shrubby Asiatic species in the collection *C. heterophylla* of Japan or eastern China is an oriental representative of *C. Avellana*, from which it may be distinguished by the more regular dentation of the husk. The still little known var. *sutchuenensis* of this species from western China is growing well in the Arboretum but has not yet produced fruit. *C. Sieboldiana* with the long beak to the fruit is related to the American *C. rostrata*; it is a shrub which often grows to the height of fifteen feet and differs from the Korean and Mandshurian Hazel (var. *mandshurica*), often considered a species (*C. mandshurica*) in its much shorter tube of the husk. In the collection there is also a plant for which the Arboretum is indebted to Dr. R. T. Morris of New York and which is believed to be a hybrid of *C. americana* and *C. Avellana* var. *pontica*. This hybrid, which was raised artificially by Dr. Morris, has not flowered in the Arboretum. The Arboretum still needs the following species: *Corylus ferox* and *C. Jacquemontii* of the Himalayas, *C. hallaisensis* of southern Korea, and *C. colchica* of the Caucasus. It lacks, too, many varieties of *C. Avellana* and several of its supposed hybrids.

Coluteas, or Bladder Sennas as they are popularly called, are shrubs of the Pea Family with deciduous pinnate leaves, small leaflets, long-stemmed racemes of yellow or dark orange-red flowers and large inflated reddish brown pods. The flowers open in succession from June until August, and the pods from the early flowers are fully grown when the late flowers are still opening, the flowers and fruits together making an attractive appearance, as can be seen in the Shrub Collection where three species are now covered with flowers and fruits. They are *C. arborescens*, a native of the Mediterranean region and southeastern Europe, with dull green leaves and bright yellow flowers; *C. cilicica*, a native of Asia Minor, with blue-green leaves and yellow flowers; and *C. orientalis*, a native of southeastern Europe and Asia Minor, with glaucous leaves and reddish brown flowers. There is a dwarf compact form of *C. arborescens* (var. *bullata*) in the Arboretum, but the other species and a supposed hybrid (*C. media*) between *C. arborescens* and *C. orientalis* have not succeeded here.

Shrub. This is the old and usually accepted popular name for the plants of the North American genus *Calycanthus*, famous for the fragrance of the flowers of at least one of its species. One of the three or four species, *C. occidentalis*, a native of California, although it has often been planted in the Arboretum has not proved hardy here. Two of the eastern species are now covered with flowers in the Shrub Collection where, helped by the mild winter, they are in unusually good condition. The best known species, at least in gardens, *Calycanthus floridus*, to which the name Shrub properly belongs on account of the delightful fragrance of the red-brown flowers, is better worth a place in the garden than the other species of the genus, although in Massachusetts the

branches sometimes are severely injured by the cold of severe winters. Housewives of earlier generations carefully gathered the flowers to place among their linen which was pleasantly perfumed in this way; and the plants which produced these flowers were cherished for this purpose. From the other species *C. floridus* is distinguished by the thick coat of pale down on the lower surface of the leaves. The flowers differ somewhat in color: on a plant once cultivated by the Berckmans in their nursery at Augusta, Georgia, the flowers were yellow, and in the Arboretum collection are plants which have sometimes been referred to the rather obscure *C. Mohrii* on which the flowers are paler brown than those of the common form. These Arboretum plants were raised from seeds collected in the neighborhood of Stone Mountain, Georgia. *C. Mohrii* is said to grow in southern Tennessee and northern Alabama, and is a plant which needs investigation. The other *Calycanthus* now in the collection, *C. fertilis*, is distinguished by the absence of down on the lower surface of the leaves and by less fragrant or nearly scentless flowers. *C. fertilis* is a variable plant: on what is considered the type the lower surface of the leaves is pale and glaucous; on another form (var. *ferax* or *laevigatus*) the leaves are green on the lower surface; another form (var. *minus*) only differs from the last in its smaller size and smaller flowers and fruits. This dwarf form is the most northern of these plants as it has been found on the mountains of Pennsylvania; and on the Blue Ridge of North Carolina it is common up to altitudes of from three thousand to three thousand five hundred feet. The other species and varieties are plants of lower altitudes, and the most northern station for *C. floridus* known to the Arboretum is on the cliffs of the Coosa River near Rome in northwestern Georgia. The other genus of this Family, *Chimonanthus*, from southern China, is found in most tropical and semi-tropical gardens where it is valued for its very fragrant early flowers.

American Hydrangeas. Of the four Hydrangeas of eastern North America the handsomest is *H. quercifolia*, with branches densely covered with rusty tomentum, deeply lobed leaves up to eight inches in length, and flowers in elongated pyramidal clusters. This shrub is a native of the extreme southern states and the stems are often killed nearly to the ground here in severe winters; this summer the plant in the Shrub Collection is in better condition than usual and is now carrying one cluster of flowers. *H. arborescens* and *H. cinerea* with flat flower-clusters are common woodland shrubs southward, and are of no great value as garden plants. There are monstrous forms of the two plants on which all the flowers are sterile, forming nearly globose white heads. This form of *H. arborescens* (var. *grandiflora*) has become in recent years a popular plant with American nurserymen, by whom it is sold in great numbers. The handsomest of the entirely hardy American species, *H. radiata*, is a native of the elevated regions of North and South Carolina. It is distinguished by its broad leaves which are dark green above and snow white below, and by its broad flat clusters of flowers surrounded by a ring of large, white, sterile flowers. In cultivation this Hydrangea is a broad and shapely shrub and one of the handsomest of midsummer flowering plants in the Arboretum. Once it was fairly common in cultivation, but from what nurserymen can it now be obtained and how many gardeners of the present day have ever seen it?

1921. "Shrub." *Bulletin of popular information - Arnold Arboretum, Harvard University* 7(13), 51–52. <https://doi.org/10.5962/p.321158>.

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