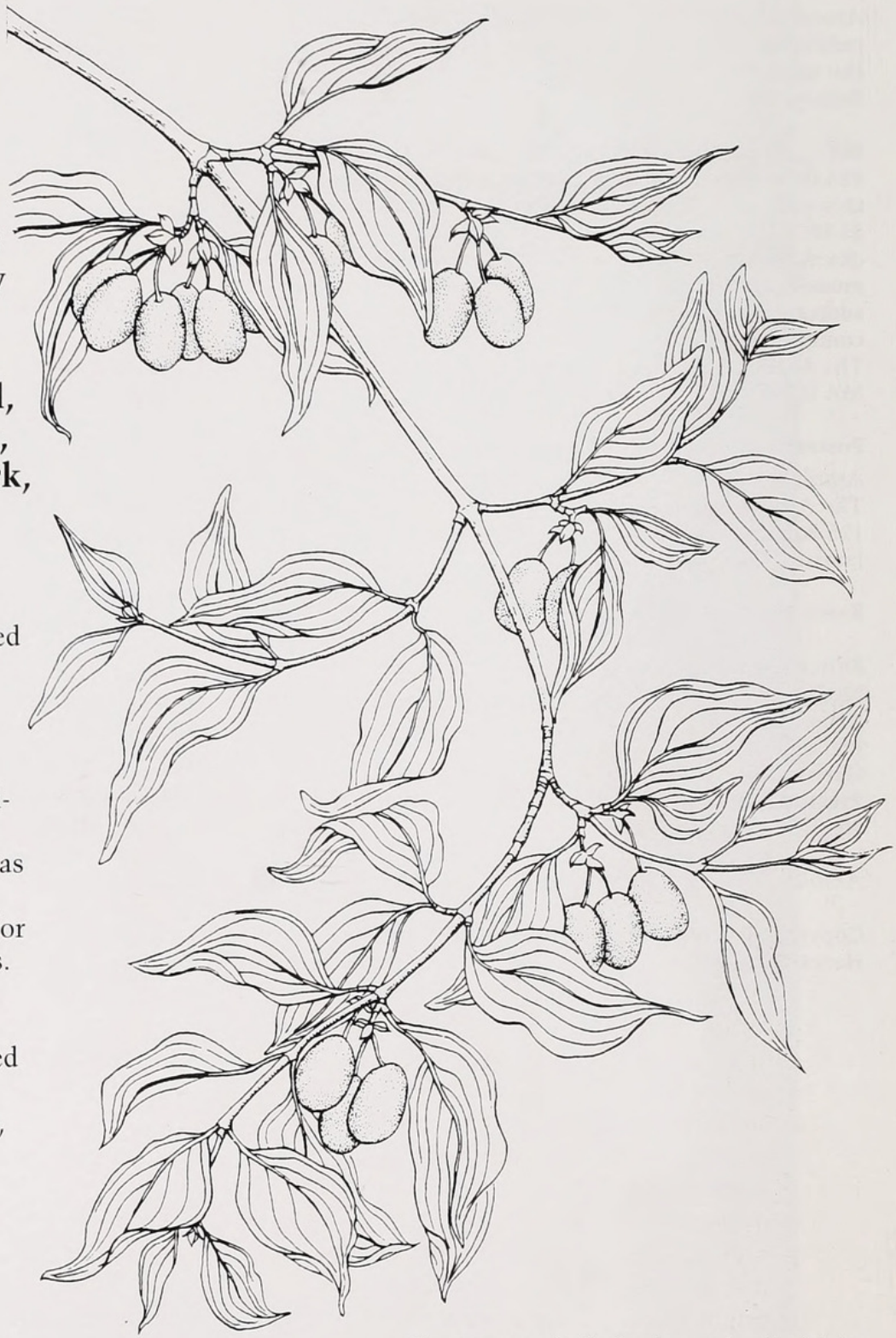
Cornelian Cherry From the Shores of Ancient Greece

Lee Reich

In late March at the Arnold Arboretum the signs of spring are few and subtle. *Cornus mas* is one of the first woody plants to bring color back to the landscape. A first-class ornamental, it offers a graceful habit, attractively mottled bark, soft yellow flowers, and—not least—fruits.

One summer day as I happened upon and ate cornelian cherries from a tree in New York City's Central Park, I had to assure a concerned passerby that I was not experimenting with a possibly poisonous new food. Instead, I was partaking of a fruit that has been enjoyed by humankind for the past seven thousand years. At a site in northern Greece, early Neolithic peoples left remains of meals that included cornelian cherry along with einkorn wheat, barley, lentils, and peas.

Cornelian cherry *(Cornus mas)* was well known to the ancient Greeks and Romans, and references to the plant abound in their literature. Speaking of the Golden Age in



Cornus mas *in fruit, drawn by V. Arlein.*

Metamorphosis, Ovid wrote:

> And Earth, untroubled,
>
> Unharried by hoe or plowshare, brought forth all
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> That men had need for, and those men were happy
>
> Gathering berries from the mountain sides,
>
> Cornel cherries, or blackcaps, and edible acorns.

The plant was grown in monastery gardens of continental Europe through the Middle Ages and was introduced to Britain about the sixteenth century. The great herbalist Gerard wrote in 1597 that "there be sundry trees of the cornel in the gardens of such as love rare and dainty plants, whereof I have a tree or two in my garden." By the eighteenth century, the plant was common in English gardens, where it was grown for its fruits, sometimes called cornel plums.

The fruit was familar enough to be found in European markets even up to the end of the nineteenth century. Cornelian cherries were especially popular in France and in Germany, and the fruit was reputedly a favorite with children.

Cornelian cherry is native to regions of eastern Europe and western Asia, and in certain parts of these regions it is appreciated for its fruit even today. Baskets of *kizilcik,* as the Turks call the fruit, are found in markets in Istanbul. Cornelian cherry is a backyard tree in Moldavia, Caucasia, Crimea, and the Ukraine. Although it is not native to the Ukraine, the plant reached that region about nine centuries ago and became established in monastery gardens. A former monastery garden (now a botanical garden) near Kiev has trees 150 to 200 years old that still bear regular crops of fruit. In spite of the long history of use in some regions of the world, and the recognition of superior fruiting types, just about all cornelian cherry plants that are cultivated are from seedlings rather than from more reliable clones.

Over most of Europe and North America today, cornelian cherry is admired solely (for no apparent reason) as an ornamental plant. Even so, the bright fruits do not go unnoticed as they festoon the tree in summer. Fruits generally are cherry-like in size and appearance: oval, fire-engine red, with a single, elongated stone. Even the flavor is akin to that of a cherry, a tart cherry, somewhat austere when the fruit first colors, but developing sweetness and aroma with full ripeness.

Botanically, cornelian cherry is a species of dogwood, unrelated to grocers' cherries. The word "cornelian" refers to the similarity in color of the fruit to cornelian (or carnelian) quartz, which has a waxy lustre and a deep red, reddish-white, or flesh red color. (*Carnis* is Latin for flesh.)

Plant Description

Cornelian cherry grows to a maximum height of about twenty-five feet, becoming a large shrub or an oval-headed tree, usually branching near the ground. In full sun the branches are largely upright, whereas in shade the branches spread wide, as if to embrace the limited light available. Though the cornelian cherry never grows large, it is a long-lived plant that produces bushels of fruit on into old age. In *Arboretum and Fruticetum,* John Claudius Loudon wrote that during travels in Germany in 1828, his party:

> stopped at the gardens of the ancient Chateau of Maskirch; and in a small enclosure close to the chateau, we found a labyrinth, the hedge of which consisted entirely of *Cornus mas,* with standard trees of the same species at regular distances, which were at that time bearing ripe fruit, which we tasted, and found of very good flavour. Later in the same year, we were shown, in the grounds of the Castle of Heidelberg, the famous cornelian cherry trees which were planted there in 1650.

Cornelian cherry has the pattern of leaf attachment and leaf venation characteristic of other members of the dogwood genus. Leaves oppose each other at each node, in contrast to most other trees, on which leaves alternate along the stem. The major veins of a dogwood leaf trace out almost to the leaf margin, then join together and parallel the margin to the leaf's apex. The leaves are satiny green in summer, often turning mahogany red in the fall. (Fall leaf color is not wholly reliable, however, for with

Cornus mas *'Flava' can be seen in its mature form at the Arnold Arboretum near Meadow Road. This multistemmed specimen stands twenty feet high with a spread of equal dimensions.*

some clones and in some climates—probably warmer parts of the plant's range—leaves eventually drop to the ground while still green.)

In winter, the plant is notable from a distance for its rounded form. Step a bit closer to appreciate the bark, flaking off in muted shades of tan and gray. And get right up to the plant to see the distinctive flower buds, perched atop short stalks at the nodes of branches that grew the previous season, and on spurs of older wood.

Flowers appear on leafless branches early in the season, blooming with the "first breath of west wind" (in Italy, at least, according to Pliny, writing in the first century A.D.) or just before forsythia. Individual flowers are tiny, but are born in such profusion that the bare branches

appear swathed in a yellow veil. The effect is all the more striking against a backdrop of a dark wall or evergreen plant. Despite the early bloom, fruit production rarely suffers since the blooms have an extended flowering period and an inherent tolerance for some frost. The flowers may not be completely self-fertilizing, because cross-pollination sometimes increases fruit production.

The names of the few cultivars of cornelian cherry that have been available from nurseries reflect the plant's use as an ornamental rather than as a comestible. 'Golden Glory' is an upright, columnar plant with especially dark green leaves, and 'Nana' is a cultivar diminutive in stature and leaf size. The variegated leaves of 'Elegantissima' and 'Variegata' make for brighter looking plants throughout the summer. Occasional leaves of 'Elegantissima' are completely yellow or tinged with pink. The leaves of 'Variegata' have irregular, creamy white margins.

RÁCZ & DEBRECZY

The developing fruit of Cornus mas *'Flava' ripens and turns yellow at the Arnold Arboretum in fall.*

As mentioned previously, cornelian cherry fruit has always been considered ornamental. 'Macrocarpa' is notable for its large fruit and 'Alba' for its white fruit. The fruit of 'Flava' is large and yellow, and a whit sweeter than those of most other cultivars. Ripening occurs from summer to fall depending on the clone.

If you were to wander into a Macedonian or Bulgarian forest, the wild cornelian cherry trees there would not all be bearing fruits resembling the common cherry. Within the wild population are plants bearing fruits that are barrel-shaped or pear-shaped and some with fruits over an inch long. In fruit color, the spectrum runs from cream to yellow, orange, and fire-engine red to a dark red-violet, and almost black. Were you to taste fruits from a number of trees, you would find similar variations in flavor. The sugar content of fruits ranges from four to twelve percent, and acidity ranges from one to four percent. Vitamin C concentration in cornelian cherries commonly averages twice that of oranges.

If qualities such as large-size fruit and a congenial blend of sweetness and acidity could be bred into a single plant, the result would be a highly ornamental plant bearing especially delectable fruit. The average seedling produces acceptable fruits, and for over two decades Russians have been selecting clones with superior fruits. Since the recent breakup of the Soviet Union, some of the cornelian cherry varieties that were selected there for their fruits have become available here. These include 'Helen', 'Pioneer', 'Red Star', and 'Elegant', all bred by Svetlana Klimenko at the Botanic Garden in Kiev and available in this country through the nursery One Green World (telephone 503/651-3005).

Cultivation

Cornelian cherry transplants easily and once established grows at a moderate rate. Calcereous soils are particularly suitable, though the plant in fact is not choosy about soil, tolerating even those that are somewhat dry. For best fruiting, plants need full sun, or almost so. Cornelian cherry will survive in shade but will not yield well.

Grow cornelian cherry as a specimen tree or shrub, or even as a large, sheared hedge. Space specimen plants twenty to twenty-five feet from other trees or shrubs. Space plants twelve feet apart for a hedge.

Cornelian cherry will grow in USDA hardiness zones 4 through 8, but languishes somewhat in the southern part of this range. At its extreme northern limit, fruiting is uncertain, since the flower buds are hardy only to the colder portions of zone 5.

Cornelian cherry is a plant from which you can expect annual harvests with little or no pruning or spraying. It is rarely subject to insects or disease, but do expect some competition from birds and squirrels for the fruit.

Propagation

Cornelian cherries are usually propagated from seed. This is unfortunate because seedlings produce fruit of variable quality and must be at least a half-dozen years old—sometimes into their teens—before commencing to bear fruit. Seed germination is usually delayed until the second season, though this defect can be overcome by artificially subjecting the seeds to warmth and moisture for four months prior to a one- to four-month period of cool, moist stratification. Nicking the seed coat should suffice in lieu of the four-month, warm, moist treatment.

Do not be disappointed if no fruits set when seedlings finally do begin to flower. Ancient writers referred to the cornelian cherry as the "male cornel" because those first flowers are male. This characteristic is the source of the specific epithet *mas*, meaning male in Latin. (The "female cornel" of the ancients was *C. sanguinea*, a shrubby, precocious species whose fruit is neither prominent nor palatable.) With time, cornelian cherry seedlings will produce perfect flowers.

If only cornelian cherry cuttings rooted as easily in reality as in legend. Plutarch (in *Life of Romulus*) wrote that

> Romulus once to try his strength threw a dart from the Aventine Mount, the staff of which was made of cornel, which struck so deep into the ground, that no one of many that tried could pluck it out, and the soil being fertile, gave nourishment to the wood, which sent forth branches, and produced a cornel stock of considerable bigness.

Ovid's version (in *Metamorphosis*) is even more fantastic: "No less amazed was Romulus when he saw the spear he planted suddenly put forth leaves." With optimum conditions fifty percent of softwood cuttings might take root.

The best time to take softwood cuttings is in late July or early August. Make each cutting about ten inches long with all but the top two leaves removed, and maintain partial shade and high humidity, preferably with mist. Rooting hormones (a modern horticultural aid unavailable to Romulus) greatly facilitate rooting of both hardwood and softwood cornelian cherry cuttings. Use IBA in talc, at concentrations in the range of 0.3 to 0.8 percent. The percentage of cuttings that root varies from clone to clone—softwood cuttings of the cultivar 'Flava' rooted one-hundred percent under ideal conditions.

Opinions differ as to the ease with which cornelian cherry propagates by root cuttings and layering, but no matter, for the easiest method to propagate a superior clone is by any common method of grafting. Use seedlings as rootstocks and graft low. Because cornelian cherry branches low to the ground, take care that all branches on a grafted plant arise from the scion rather than the rootstock.

Harvest and Use

Cornelian cherries ripen from summer through fall, the time varying from clone to clone. Average yield from a single tree typically lies in the range of thirty to seventy pounds of fruit, though there are trees that bear over two hundred pounds of fruit.

Fruits from a single tree ripen over an extended harvest period. The simplest way to harvest in quantity is to periodically give the branches a gentle shake once the fruit has colored, then collect fallen fruit from the ground. Ripe fruits hang well on the tree, becoming with time more concentrated in flavor and sweetness. Some people prefer to allow harvested fruit to sit at room temperature for a day or more, in which case the flavor becomes sweeter, but more sedate.

A century or more ago, when the fruit was popular in Britain, it was rarely eaten out of hand, probably because better-tasting clones were unknown there. The fruits were held in high esteem for the delicious tarts they made, and shops commonly sold *rob de cornis*, a thickened, sweet syrup of cornelian cherry fruits. The juice also added pizzazz to cider and perry.

In other parts of Europe where cornelian cherry is still eaten, the fruit finds a variety of uses. Since ancient times, the unripe fruits have been pickled as olive substitutes.

> Cornel-berries, which we use instead of olives . . . should be picked while they are still hard and not very ripe; they must not, however, be too unripe. They should then be dried for a day in the shade; then vinegar and must boiled down to half or one-third of its original volume should be mixed and poured in, but it will be necessary to add some salt, so that no worms or other form of animal life can be engendered in them, but the better method of preservation is when two parts of must boiled down to half its original volume are mixed with one part of vinegar. (Columella, *On Agriculture*, 1st century A.D.)

Cornelian cherry is a favored ingredient of Turkish *serbert*, a fruit drink sold in stores and from portable containers carried like knapsacks on the backs of street vendors. (Another common English name for cornelian cherry is "sorbet," though it is not the only fruit ever used for the Turkish *serbert*.) In the Ukraine, cornelian cherries are juiced, then bottled commercially as soft drinks. There, the fruits are also made into conserves, fermented into wine, distilled into a liqueur, and dried.

The generic epithet *Cornus* is derived from the Latin word for "horn," alluding to the hardness of the wood. Pliny wrote that cornelian cherry wood was used for making "spokes of wheels, or else for making wedges for splitting wood, and pins or bolts, which have all the hardness of those of iron." The wood's hardness was also put to more menacing use, in spears. From the many gory passages relating this use by ancient writers, the following lines from Virgil's *Aeneid* serve as example:

> Winging through the soft air the Italian
>
> Cornel shaft sank in, deep in the chest
>
> Stuck there, and the black wound's open chasm
>
> Yielded a foaming wave of blood.

Returning to beneficent uses of cornelian cherry, we find many parts of the cornelian cherry plant applied in folk medicine. The fruit allegedly is beneficial in the treatment of gout, anemia, skin diseases, painful joints, and disrupted metabolism. Fruit, leaves, or bark have been employed for gastrointestinal disorders and tuberculosis. Used in a kind of contemporary folk medicine, Russians report that the fruit contains components that leach radioactivity from the body.

But I digress—our primary interest here is with the gustatory pleasure afforded by the fruits, especially fresh fruits of a superior clone carried straight from the tree to the mouth. The fruit is as worth cultivating today as it was three centuries ago when John Parkinson wrote of the cornelian cherry (in *Paradisi in Sole*), that "by reason of the pleasantnesse in them when they are ripe, they are much desired . . . also preferued [sic] and eaten, both for rarity and delight . . . ."

Lee Reich, Ph.D., is a horticultural consultant and writer in New Paltz, New York. While working as a fruit researcher for the USDA, and then Cornell University, he became interested in lesser known fruits, an interest that resulted in his 1991 book, *Uncommon Fruits Worthy of Attention: A Gardener's Guide*, from which this article is drawn.