



*Polly Wakefield among her oldest kousa dogwoods, nearly thirty feet tall, planted along the path down to the terraces.
Photo by Peter Del Tredici.*

A Fascination with Dogwoods

Mary M. B. Wakefield

Observations on thirty-four years of growing *Cornus kousa*.

I will always remember the day that my mother exclaimed: "What are we going to do? Hector wants to remove the old granite steps from the path down the terraces. He says the horses can't see them in the tall grass and they'll stumble over them when dragging the mowing machine."

At that time, over thirty years ago, the steps were all that was left to mark the path through the eighteenth-century cherry orchard after the last two trees had died. What a pity, I thought, to remove the last remaining vestiges of what had once been such an important feature of the place.

After thinking it over, we decided to experiment. Why not try planting out some of the young dogwood trees that I had raised from seed collected during plant propagation classes at the Arnold Arboretum? By planting them at either end of each group of steps—they were already tall enough to be seen above the hay—they might solve Hector's problem, and beautify the place at the same time. Thus began a project that eventually extended the length and breadth of each terrace and on into the fields beyond. It continues to this day.

This all started in 1956 when I began collecting dogwood seed during a class in plant propagation at the Arnold Arboretum taught by Roger Coggeshall. Near the summit of Bussey Hill was a group of dogwoods, and members of the class were given their choice as to which trees to collect from. I chose the fruit of one particular *Cornus kousa* because it was much larger than that of those growing

nearby. It was a round-headed tree, and it was growing near two other kousas, by which it may have been pollinated.

For a number of years, I continued to take the same plant propagation course and each year I collected from the same three trees, and all the kousa dogwoods that I planted over the next thirty-four years—and I now have more than six hundred of them spread over several acres—are descended from these particular Arboretum specimens.

The large-fruited kousa was No. 79-41-B, a grafted plant received by the Arnold Arboretum from Clarence Lewis of Skylands Farm, Sloatsburg, New York, on January 11, 1941. Its two neighbors were Nos. 18386-A and -B, siblings grown from seed sent by A. Coffin of Locust Valley, New York, in 1923. The A plant had an interesting and distinctive bark, exfoliating to expose patches of light gray. It was more upright in habit than its sibling, which was round-headed and bushy.

As all my trees are the descendants of the specimens growing at the Arnold Arboretum, this article can only attempt to describe the variation that we have found in over thirty-four years of selection and experimentation. Kousa dogwoods derived from other seed sources, or from the wild, would probably manifest variation in different characteristics.

An Excellent Ornamental

How fortunate for me that it was *Cornus kousa* seedlings that were available when we needed trees to demarcate the path. I have



The exceptionally large fruits of *Cornus kousa* (AA #79-41-B), 3.5 cm in diameter (1.4 in). Seeds collected from this plant in 1956 were the source of Polly Wakefield's first kousa dogwoods. Photo by I. Rácz and Z. Debreczy.

found them one of the most outstanding of all the flowering trees that will thrive in the changeable New England climate. Ornamental at every season of the year, these seedlings never cease to astonish me with their vigor, their hardiness, and, most particularly, their individuality.

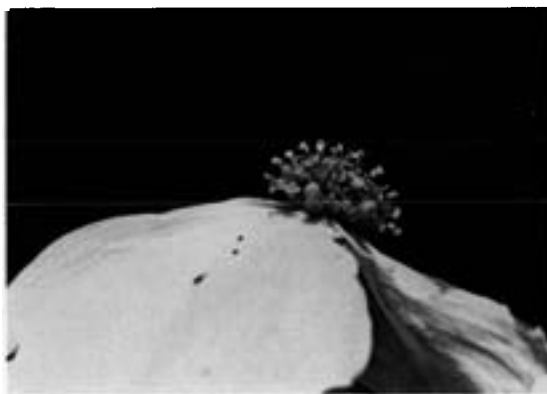
Cornus kousa produces flowers some two to three weeks later than *Cornus florida*. It is not until early June, when the weather has warmed up and after its leaves have expanded fully, that the kousa flower buds swell to their full size. By planting both species together, the homeowner can extend the dogwood season by three to four weeks.

With both of these dogwoods, the structure most people refer to as a flower is not really a flower. In the words of E. H. Wilson, the true flowers are "an insignificant crowded mass subtended by four, creamy white bracts, ovate and pointed and overlapping at the base, forming a cross some 3 to 4 inches in diameter." At first the leaflike flower bracts are light green but, as they enlarge, they turn a cream color, and then gradually whiten with age,

before falling off in July. Unlike the native *Cornus florida*, the later kousa bracts are handsomely set off with a foil of green leaves.

I have seen many interesting variations on this "normal" pattern: on some plants, the bracts never entirely whiten but become suffused with green instead. They are probably photosynthetic and often remain in place until the fruits ripen in October. On other plants, the aging bracts may develop an attractive pink tinge before they drop, or the bracts may develop irregular pink splotches, making them look like someone spilled paint on them. The intensity and duration of this color seem to be dependent upon the weather.

The size and shape of the bracts are also extremely variable. On my trees the flower clusters, including bracts, have varied in length from 1.5 to 6.5 inches. The amount of overlap among the bracts is also variable. In some, the four bracts are completely distinct from one another, producing a star-shaped effect, while in others, the bracts are so broadly overlapping that the flowers appear square. The bracts may be evenly placed around the central flower or they may be arranged eccentrically, with three of them close together and one of them by itself. On some individuals, the flower bracts droop as they age, causing the central flowers to appear elevated, while on others, the bracts curl



Close-up of the true flowers of *Cornus kousa* subtended by showy bracts. Photo from the Arnold Arboretum Archives.

upward to produce a pronounced cup-shaped effect.

A few of my trees produce “double” flowers with two or more extra bracts, and occasionally, on some trees, one or all of the bracts are fused together to create a very distinctive effect. Several times one of my trees produced flowers in clusters of threes. Unfortunately these unusual characters did not manifest themselves annually, and therefore cannot be considered stable traits. But with a seedling there is always hope—for that is the sport of seed propagation.

The fruit of the native American dogwood, *C. florida*, is a single flesh-encased seed that appeals to birds, chipmunks, squirrels and raccoons. The fruit of the kousa dogwood is fleshy and strawberry-like, and the individual components are fused together into a single entity called a syncarp. According to a recent report by Dr. Richard Eyde, the fruit is particularly attractive to the macaque monkeys, native to Asia, who eagerly consume them, and in the process, disseminate the seeds.

When the fruits first develop, the stalk that carries them is upright, but as they develop, they become heavier and more pendulous. When fully mature they dangle from the branch tips like Christmas tree ornaments. In New England, the fruits hang on the trees for several weeks once they are mature. On most trees, the fruits develop from green to yellow to orange to bright red at different rates of speed, so all the colors may be on one tree simultaneously! Normally the fruits are 1.5 to 2.5 centimeters (.5 to 1 inch) across, but sometimes they can reach 3.5 centimeters (1.5 inches). The fruits, while somewhat gritty in texture, are edible with a delicate honeydew melon flavor that cries out for an inventive gourmet cook.

Growth Habit

Experts assure us that kousa dogwoods display the same horizontal branching habit as *Cornus florida*, but my experience suggests that this is not always the case. The only generalization that seems to hold is that

growth habit varies greatly from plant to plant. A tree may have a strong central leader with weak laterals, to give an upright, essentially vertical, tree; or it can have multiple trunks that eventually produce a fan-shaped tree as the weight of snow and ice spreads the branches apart.

Another variation in the kousa dogwood's general habit is the way in which it carries its flowers. They may be borne singly on short horizontal branches, or they may appear in lines of five to eleven flowers along the “top” of the branches, creating the impression of being laden with snow.

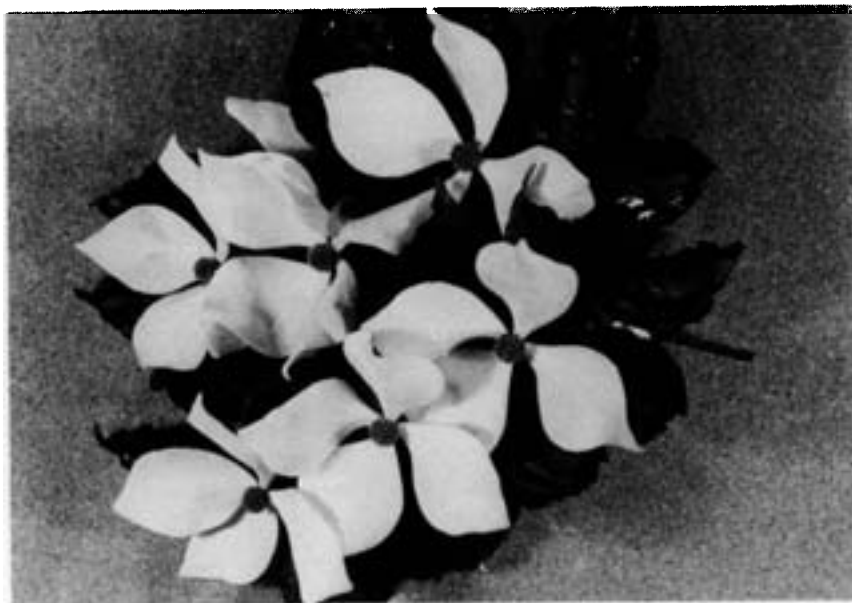
One particularly important distinction in this regard is whether or not the tree can be classed as an “upstairs” or a “downstairs” tree. As I define it, an upstairs tree, because it holds its flowers along the upper side of its branches,



The exfoliating bark of a twenty-year-old specimen of Cornus kousa. Photo by Peter Del Tredici.

Four different plants of Cornus kousa showing variation in the arrangement, shape, and size of the showy bracts. Photos from the Arnold Arboretum Archives.







Polly Wakefield in her garden. Photo by Peter Del Tredici.

is best viewed from above. A downstairs tree, on the other hand, produces flowers that are somewhat turned down and is best viewed from ground level.

No matter what the differences in flowers, fruit, or growth habit, all kousa dogwoods have beautiful exfoliating bark and leaves that turn a deep, rich wine-red color in the fall. In my garden, only the leaves of the native oaks and the Norway maples persist longer than those of the kousas.

Trials and Tribulations

In nature, both *C. florida* and *C. kousa* are understory trees, growing best in the shade of much larger deciduous trees. They prefer a light, well-drained soil, and seem to prosper

near the banks of ponds or streams where moisture is continually available. In times of extreme drought, they appreciate being on the fringes of woods with nurse trees to mitigate the direct rays of the sun. They especially resent long periods of full sunlight during dry weather. Not that they won't tolerate the heat at such times, but their leaves are apt to curl temporarily and look less attractive.

The first planting of dogwoods—on the terraces where cherry trees had thrived—was spaced rather closely together to discourage the grass growing beneath them, for back then mowing grass was a real nuisance. Today moss, forget-me-nots, violets, European ginger, lilies-of-the-valley, and toadflax have become established, eliminating the need for mowing.

Because of the close spacing, the trees have shed most of their lower branches and exposed their handsome trunks. It is difficult to appreciate the subtle individuality of each plant, but *en masse* they create a lovely "dog wood."

One summer the town decreed that no water could be used for ornamental plants except by bucket—after a brief effort at compliance, I decided to dig my own well! One winter the mice wreaked havoc by nibbling the bark just above the snowline; after that, each tree was encircled with a protective chicken wire or plastic wrap.

Over the years, I have tried a variety of mulches but have found none as satisfactory as old-fashioned wood chips. A thick layer of them not only reduces the competition from weeds but also acts to conserve moisture. Perhaps most important, the mulch serves to protect trees from trunk damage by power mowers and string trimmers.

1987 and 1988 were drought years in New England, and I was faced with the choice of losing recently transplanted kousas from lack of water or irrigating them with our overhead irrigation system. I decided to use our system liberally even though this sometimes meant running it right through the night. This practice unwittingly created conditions that were favorable to the spread of the recently described dogwood anthracnose fungus. [See article p. 16.] Fortunately, I found it on only a few trees and there has been no further sign of the disease on any of the kousas since we stopped watering at night.

A Bright Future

It is surprising to me that kousa dogwoods are so little planted in this part of the world. This may change dramatically in the near future, however, given that *C. florida* is considered highly susceptible to the deadly dogwood anthracnose, while *C. kousa* is but little affected.

My hope is that some day *C. kousa* will be so much in demand that the nurseries will find it worthwhile to carry cultivars, thereby

enabling the purchaser to select an "upstairs" tree or a "downstairs" tree, one with large or small fruits, or one with broadly overlapping bracts or bracts that scarcely touch. Toward this end, my goal continues to be to select and propagate those trees with particularly distinctive characteristics. Over the years, I have named and patented several plants, including 'Fanfare' with a narrow, upright growth habit; 'Silverstar' with an arching, vase-shaped form; and 'Moonbeam' with unusually large flowers. Two of my selections, 'Triple Crown' with three flowers per cluster and 'Twinkle' in which some of the inflorescences produce extra bracts, are not reliable in these characteristics and are no longer distributed.

My collection is the result of an amateur hobbyist working in her spare time without scientific skill or equipment. Today more and more researchers are working with the kousa dogwood, and recently Elwin Orton of Rutgers University successfully crossed it with both *C. florida* and *C. nuttallii*, opening the door to future improvements.

References

- Eyde, R. H. 1985. The case for monkey-mediated evolution in big-bracted dogwoods. *Arnoldia* 45(4): 2-9.
- Fordham, A. J. 1984. *Cornus kousa* and its propagation. *Internat. Plant Prop. Soc. Proc.* 34: 598-603.
- Orton, E. R. 1985. Interspecific hybridization among *Cornus florida*, *C. kousa*, and *C. nuttallii*. *Internat. Plant Prop. Soc. Proc.* 35: 655-661.
- Santamour, F. S. Jr. and A. J. McArdle 1985. Cultivar checklists of the large-bracted dogwoods: *Cornus florida*, *C. kousa*, and *C. nuttallii*. *Jour. of Arboriculture* 11(1): 29-36.
- Wilson, E. H. 1930. *Cornus kousa chinensis*. *Arnold Arb. Bull. Pop. Info.*, ser. 3, vol. 4 (11): 41-42.

Polly Wakefield is a former trustee of the Massachusetts Horticultural Society. She has worked with the Friends of the Public Garden since its inception, and for twelve years she served on the Visiting Committee of the Arnold Arboretum.