

# Presenting *Sinocalycanthus chinensis*—Chinese Wax Shrub

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**Virtually unknown in the West, this promising new plant from China is causing a stir.**

During my years as Curator of Collections at the University of British Columbia Botanical Garden, I have begun a number of files on plants in our garden that were of personal interest, especially those for which I could find little or no information in the standard references. My files included such plants as *Rehderodendron macrocarpum*, both *Kirengeshoma palmata* and *koreana*, *Dipteronia sinensis*, and *Sinocalycanthus chinensis*. The goal in the back of my mind was to write something eventually on some or all of these plants for North American horticultural audiences.

*Sinocalycanthus* (Calycanthaceae), the most recent addition to my list, has been unusual in that, since 1984 when I began the file, I have accumulated very little—only the original description and two brief notes. The first, written by J. C. Raulston in the North Carolina State University Arboretum *Newsletter*, discussed a plant he had received as a cutting from us that was flowering for the first time. The second, written in 1990 by Roy Lancaster, described a plant flowering in his garden—the first color photograph of the flower ever published. Since there is no mention of this shrub in any of the standard woody plant manuals, the present article is based largely on our experiences at UBC Botanical Garden with this choice and little-known shrub.

## Recent Introduction into North America

First described in 1963 by W. C. Cheng and S. Y. Chang as *Calycanthus chinensis*, the species was moved by the same authors to a new monotypic genus, *Sinocalycanthus*, the following year. In the wild, the plant is known to survive on only a few wooded mountain slopes at 600 to 900 meters (2000 to 3000 feet) in Zhejiang Province in Eastern China.

Seed of the plant was distributed by Shanghai Botanical Garden in the early 1980s, following the end of the "Cultural Revolution," and most of the plants now growing in western gardens can be traced back to these introductions. While presently established in several public gardens and a few private gardens in England, Holland, Canada, and the United States, *Sinocalycanthus* is largely unknown in botanical and horticultural circles. To my knowledge, it is not yet grown commercially by any nurseries.

In 1980, the UBC Botanical Garden in Vancouver, Canada, received its first seeds, collected in the wild, from Shanghai Botanical Garden, labeled *Sinocalycanthus chinensis*. One seed germinated and the seedling, growing quickly, was planted out two years later in the Asian Garden, under the high shade of some nearby mature Western red cedars (*Thuja plicata*). In 1984, the plant, then about a meter tall and looking very much like the *Calycanthus* species, produced its first flower.



*Sinocalycanthus chinensis* in flower at the University of British Columbia Asian Garden. Photographed in July, 1990, by the author.

Since then it has grown rapidly and is now about 3.5 meters tall (11 feet)—and even a bit wider. Flowers appear at the ends of most branches for about a month beginning in late June.

### **Description**

*Sinocalycanthus chinensis* is a vigorous deciduous shrub, very similar in general growth habit, branching pattern, and leaf and fruit characteristics to the endemic North American genus *Calycanthus*. Although it was described as 1 to 3 meters tall (3 to 10 feet) in the wild, our young cultivated material is

already beyond that and shows no signs of slowing down. The bark and twigs are pale buff, with prominent lenticels. The dichotomous branches are relatively sparse and stiffly upright, with thick twigs, more or less flattened toward the ends. The foliage, and especially the dried twigs, are sweetly aromatic when scratched, like those of *Calycanthus*. Prominent, raised C-shaped leaf scars surround slightly sunken buds. The paired, opposite (sometimes sub-opposite) buds are equally vigorous on the lower horizontal branches, whereas on the upper branches, one developing shoot usually overtops the other. Young

plants may grow 30 to 60 centimeters (12 to 25 inches) or more a year.

In Vancouver, leaves and shoots emerge around the first of May, after most other deciduous shrubs are fully leafed out. At this point flower buds are readily visible at the ends of the new lateral shoots. The young leaves, at first very shiny and bronze-colored, become a lustrous pale to mid-green as they mature. The leaves are larger than those of *Calycanthus*, the blades typically up to 16 centimeters long (6 inches) and 10 centimeters wide (4 inches), on short petioles 0.5 to 1 centimeter long (0.2 to 0.4 inches). On vigorous plants, the leaves can measure up to 25 centimeters long and 12 centimeters wide.

The leaves are broadly elliptic to obovate with cuspidate tips, and cuneate to obtuse bases. The upper surface varies from smooth to slightly rough-textured and may be irregularly puckered. On the lower surface, the veins are very prominent. Short, dark-brown hairs are scattered along the midrib and the main veins on the underside of the leaf. Leaves show moderately good yellow autumn color, even on the Pacific Coast where the autumn color of many plants is often relatively poor.

### Flowers and Fruits

The unique characteristics that define the genus *Sinocalycanthus* are found on the flowers, which are produced singly at the ends of current-season growth, and appear in June or July in Vancouver. The large globular flower buds are purplish-green for some weeks before opening. Toward their base, large bud scales intergrade into four or five sepal-like tepals. Pale brown to yellowish-green, these tepals persist during flowering.

The flowers are held at right angles to the ends of branches or are drooping, much like those of *Magnolia sieboldii*. The open flowers, very different from those of *Calycanthus*, are either flattened or bowl-shaped, and much larger, from 6 to 10 centimeters wide (2 to 4 inches). Unfortunately lacking a scent, the flowers resemble at a distance those of a camellia or a magnolia.

Typical of the family, the flowers lack distinct sepals and petals, but reveal instead two distinct spirals of white tepals. The seven or eight large tepals (3 to 4 centimeters long by 2 to 3 centimeters wide) of the outer ring have inwardly curved tips and are nearly flat. These are pure white internally, often with a flush of pale pink on the outside, especially toward the tips. They have a thick, firm texture with prominent, raised veins.

The smaller staminoid-like tepals (1 to 1.5 centimeters long and about 1 centimeter wide) of the inner ring have an even harder, waxlike texture. These are creamy yellow at the tips, red-purple at the base internally, and white at the base externally. They are strongly curved inward, and largely conceal the stamens. The eighteen to twenty spirally arranged stamens are somewhat flattened and are borne on very short filaments. The anthers surround the protruding tips of several sericeous projections from inside the hypanthium. These partially conceal the fifteen or so delicate, slender stigmas.

The woody, brown fruits are virtually indistinguishable from those of *Calycanthus*. They have an elongated pear shape, with prominent tepal scars spiraling around the fruit and around the slender fingerlike, sericeous projections from the contracted mouth. Bright green through the summer, the fruits turn brown in the fall, remaining on the shrubs into winter until they slowly disintegrate. The seeds (technically *achenes*) resemble elongated beans of a shiny, cinnamon-brown color, with a longitudinal ridge. The plants appear to be self-compatible, producing a few fruits with viable seed.

### Other Plants in Cultivation in the West

The Botanical Garden of the University of California at Berkeley also received seed from Shanghai Botanical Garden in 1980, and one of the resulting plants was distributed to the Strybing Arboretum in San Francisco. From the same Chinese source, Brooklyn Botanic Garden received seed in 1981; one plant flowered in 1985 but was subsequently stolen.



*Sinocalycanthus chinensis*: a flowering branch in its natural orientation; a front view of the flower; a mature seed capsule; and a mature seed capsule in longitudinal section, with three ripe seeds. Drawings by the author.

Fortunately, plants propagated from cuttings had been retained in the nursery, one of which, now planted out, is over 2 meters tall and 2 meters wide (6 feet), flowering and fruiting yearly.

P. G. Zwijnenburg of Boskoop, Holland, reports that the Boskoop Research Station has grown a plant since 1983; it first flowered in 1987. This plant grows in an unheated greenhouse where it has frozen several times to -10 degrees C.

The well-known plantsman Roy Lancaster reported that a plant flowered in 1989 in his garden in Hampshire, England; he had seen flowers for the first time in Vancouver the summer before.

In 1985, the UBC Botanical Garden gave cuttings from its plant to Dr. J. C. Raulston of the North Carolina State University Arboretum; his plant flowered in May 1987. In Raleigh, the shrub flowers a full month to six weeks earlier than in Vancouver. Propagations from the UBC plant, especially through the notable generosity of Raulston, have now resulted in young plants growing in a number of locations throughout North America. A plant on the campus of the University of Washington in Seattle was grown from seed received from Hangzhou Botanical Garden.

### Cultivation and Propagation

Thus far *Sinocalycanthus* appears adaptable to a fairly wide range of cultural conditions. It has suffered no summer or winter damage in USDA Zone 8, in either full sun or partial shade. Its winter hardiness has not been fully tested as yet, but it should survive to at least USDA Zone 6. It is extremely vigorous in the acid soils, wet winters, and relatively cool, dry summers of the coastal Pacific Northwest. And it seems to tolerate equally well the hot, humid summers of the southeastern United States; however, it may grow best in light shade in the East.

*Sinocalycanthus* has no apparent serious insect or disease problems, although some flowers do blacken before fading, the cause of which, undetermined as yet, is most likely

just the natural senescence of the flowers. The shrub is very late leafing out, at least in the typically cool spring weather of the Pacific Northwest. The angle at which many of the flowers are carried on the stem makes the shrub most showy when viewed from below, so young plants are less attractive than older plants whose flowers can be looked up into. The plants do not produce enough flowers to be showy from a great distance, and they are definitely best planted where the individual flowers may be inspected closely.

Softwood cuttings taken in June or July, treated with 0.4 percent IBA powder, rooted readily under mist. Even though only a few flowers produce fruit, the plant is self-compatible and viable seed is produced. A few seeds were germinated by Raulston after a three-month cold stratification period.

This attractive shrub deserves wider recognition and at this time shows great potential for temperate gardens. Its flowering time comes after many of the spring shrubs have finished blooming, making it a desirable addition. Obviously, it needs to be further tested for winter hardiness, for its tolerance to extended summer heat, and for its adaptability to neutral or alkaline soils. Its close relationship to *Calycanthus* makes the potential for hybridization a distinct possibility, one well worth pursuing.

### References

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