# Re-inventing Sweetshrubs©

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The family Calycanthaceae is comprised of three genera including *Chimonanthus* (Asia), *Calycanthus* (North America and Asia), and *Idiospermum* (Australia). These plants are among the oldest known flowering plants with fossil records dating back to the early and mid cretaceous periods (144 to 65 million years ago) (Renner, 1999). As the Age of Dinosaurs came to an end, and the super-continent Pangea was breaking apart, these ancient plants were radiating out, leading to their modern worldwide distribution.

Although the sweetshrubs are not generally considered mainstream landscape plants, they hold great promise. The sweetshubs offer fragrant flowers, attractive foliage, broad adaptability, shade tolerance, and excellent pest resistance. Once discovered, gardeners invariably become infatuated and muse romantically about the alluring fragrance and subtle charm of sweetshrubs. No garden should be without them.

There are two species of sweetshrubs native to North America, the Carolina sweetshrub (*Calycanthus floridus*) and the California sweetshrub (*C. occidentalis*). The Carolina sweetshrub is naturally found throughout much of the Eastern United States and commonly grows as an understory shrub in mixed deciduous forests, often along streams and in moist woodlands. The leaves and stems are strongly aromatic and the bark, at one time, was used as a substitute for cinnamon. Height can vary and ranges from 3 to 9 ft, growing as multistemmed shrubs with suckering shoots arising from the base and roots. Fall color can be an attractive buttery yellow. The flowers, however, are the main attraction. Although they may not be considered showstoppers from a distance, the primitive upright flowers are packed with tepals that vary from reddish purple to chocolate brown. The fragrance is also variable and somewhat hard to describe. Wine connoisseurs could have a heyday describing the complex aromas of strawberries and melons with subtle accents of cinnamon and spices. Others simply inhale and go Ahhhhh!

The California sweetshrub is naturally found in Washington and California growing as an understory species along streams and on moist canyon slopes. Although similar to the Carolina sweetshrub, the California species is larger in most all respects with the plants growing to over 12 ft tall. The flowers, though larger and a brighter red, are typically not as fragrant.

The Chinese wax shrub (*C. chinensis*) is a rare species native to the Zheijang Province in southeast China that was only recently introduced into cultivation. This medium-sized shrub grows to 3 to 9 ft tall with large, glossy leaves. The flowers open more completely than do other *Calycanthus* sp. and are multicolored with the outer perianth whorl being whitish pink and the inner whorl being a strong yellow with occasional purple streaks at the base. Unfortunately, there is little fragrance. Despite its fairly southern origins, the Chinese wax shrub has proven hardy in U.S.D.A. Zone 5.

The Chinese wax shrub has been placed both in the genus *Calycanthus* (i.e., *C. chinensis* W.C. Cheng and S.Y. Chang) and in the genus *Sinocalycanthus* (i.e., *Sinocalycanthus chinensis* W.C. Cheng and S.Y. Chang). However, recent molecular phylogeny data (Zhou, et al., in preparation) has indicated that this species is genetically embedded among other *Calycanthus* species providing strong justification to place this Asian

species within the genus *Calycanthus*. If this treatment is accepted, then *Sinocalycanthus* and ×*Sinocalycalycanthus* would both be reclassified as *Calycanthus*.

The Chinese wax shrub is closely related to our North American sweetshrubs. In paleobotany terms, many closely related taxa that are found in both North America and Asia, are referred to as "disjunct Tertiary relics". After Pangea fractured, with Laurasia going to the Northern Hemisphere and Gondwana moving to the Southern, Laurasia broke apart in the Tertiary period (26 to 66 million years ago). This disjunction separated North America from Eurasia and separated the plants that eventually gave rise to Asian and North American species. Similar patterns exist for the *Magnolia, Liriodendron, Cotinus*, and *Hamamelis*.

## BREAKDOWN OF SPECIES, VARIETIES, AND CULTIVARS

***Calycanthus floridus* (sweetshrub, strawberry-shrub, Carolina allspice, Carolina sweetshrub, spicebush).** Distinguished by obovate-lanceolate to oblong-elliptic tepals, 10-20 stamens, and lateral bud partially hidden by the petiole base. There are two varieties that vary primarily in the degree of pubescence on the leaves and twigs. However, the ranges of these varieties overlap and variation in the amount of pubescence is common.

- *Calycanthus floridus* var. *floridus* (*Calycanthus brockianus, C. mohrii*). Twigs, petiole, and abaxial surface of leaf pubescent.
- *Calycanthus floridus* var. *glaucus* (*Calycanthus glaucus, C. fertilis, C. floridus var. laevigatus, C. floridus var. oblongifolius, C. nanus*). Twigs, petiole, and abaxial surface of leaf glabrous or with scattered trichomes.

***Notable Cultivars*:**

- **'Athens'.** One of a number of yellow or green flowered forms with lustrous, dark green foliage, and excellent flower fragrance. A number of other yellow-flowered, but unnamed, forms exist. Richard Weaver, formally with We-Du Nurseries, and Wyatt LeFever, formally with Blue Ridge Fish Hatchery, have both discovered additional yellow forms in the wilds of North Carolina. Interestingly, these yellow-flowered forms were once considered to be a separate species, *C. brochianus*, but this treatment is generally no longer accepted.
- **'Michel Lindsey'.** Introduced by Holbrook Farm and Nursery, formally in Fletcher, North Carolina has extremely lustrous, glossy foliage with very fragrant reddish brown flowers and yellow fall color.
- **'Purpureus'.** Grown mostly in Europe. Somewhat disappointing with the underside of the leaves being only slightly purple.

***Calycanthus occidentalis* (California spicebush, California sweetshrub).** Distinguished by linear to linear-spatulate to ovate-elliptic tepals, 10–15 stamens, and lateral buds being exposed.

***Calycanthus chinensis* (syn. *Sinocalycanthus chinensis*) (Chinese wax shrub).** Distinguished by the large leaves 16–25 cm long and 10–12 cm wide, tepals arranged in two distinct series, and whitish-pink flower color with yellow inner tepals.

**Figure 1.** *Calycanthus* 'Venus' PPAF flower.

## THE NEW SWEETSHRUBS

As reported by Lasseigne et al. (2001), Richard Hartlage, then an undergraduate student in Horticultural Science at North Carolina State University, performed reciprocal crosses between *Calycanthus* (*Sinocalycanthus*) *chinensis* and *C. floridus* in 1991. Four seedlings resulted, one of which appeared to be a hybrid and bloomed 5 years later. This hybrid was later named ×*Sinocalycalycanthus raulstonii* Lasseigne and Fantz 'Hartlage Wine'. In many regards, this hybrid combines the best qualities of both parents with large, maroon, wine-red flowers that open widely with a subtle fragrance. Once established, plants can be very floriferous and extremely showy.

Encouraged and inspired by the success of 'Hartlage Wine', we have been working on further developing new hybrids of *Calycanthus*. We have successfully developed additional hybrids between *C. chinensis* and *C. floridus* and new hybrids between *C. chinensis* and *C. occidentalis*. Although most of these hybrids are extremely infertile, we have been able to produce a limited number of advanced generation hybrids that include all three taxa. Many of these hybrids are just now blooming for the first time and the range of characteristics and the potential for new nursery crops is outstanding. We have just released an exceptional new hybrid named *Calycanthus* 'Venus' PPAF. 'Venus' is a complex hybrid, developed at North Carolina State University that includes *C. chinensis*, *C. floridus*, and *C. occidentalis* in its pedigree. The result is exceptional (Fig. 1). This medium-sized shrub produces large, ivory-yellow buds that transform into large, magnolia-like, white flowers with yellow and purple infusions in the center. The flowers have an enticing fragrance with aromas of strawberries and melons. Flowering is primarily in the spring, though additional flowers are produced throughout the growing season.

## LITERATURE CITED

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# A New World of Groundcovers©

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This presentation was a slide show on groundcovers with many of the groundcovers shown in Table 1 below described.