The plants of the Arnold Arboretum display incredible floral diversity. *Magnolia macrophylla*’s huge waxy blooms open twice, partly closing in between for an overnight sex change. *Helwingia japonica* sprouts tiny green umbels in the center of otherwise unremarkable leaves. *Davidia involucrata* foregoes petals entirely, but shelters its reproductive organs with massive white bracts. Even wild *Viola sororia*, flagging down bees with its iconic violets, surreptitiously sends out discrete, self-pollinating flowers underground.

With all this bizarre and beautiful reproduction going on, most of us overlook the most evolutionarily distinctive flowering plant in the collection: *Schisandra chinensis*. An unassuming woody vine, it represents a unique and ancient lineage that parted ways with most other flowering plants at least as far back as the early Cretaceous, before even “living fossils” like *Magnolia*. This ancient group, the Austrobaileyales, is now recognized as the third-oldest remaining branch on the phylogenetic tree of flowering plants, diverging after only *Amborella* (a strange New Caledonian shrub) and the Nymphaeales (a group of herbaceous aquatics that includes water lilies). The endosperm of *Schisandra* seeds consequently contains only one complement of genes from each of its parents, while most flowering plants acquire an additional copy of their moms’ genes. *Schisandra* likely shares these characteristics with the extinct ancestors of all flowering plants, a living link to the distant past.

But while it retains many archaic anatomical features that are long lost in most flowering plants, *Schisandra* has evolved a unique and medically promising biochemistry. Traditional Chinese herbalism prescribes *S. chinensis* for a whole host of ailments and as a general tonic and adaptogen. Recent science has isolated several new types of lignans (a class of polyphenols) from the fruits; these have anti-oxidant and anti-inflammatory properties. *Schisandra* lignans have been shown to protect brain cells from glutamate and liver cells from a variety of toxins; they may also inhibit platelet aggregation, tumor proliferation, and possibly even HIV replication. As chemists in the food and medical industries increasingly explore these lignans, it’s likely that demand for *S. chinensis* as a pharmaceutical precursor and “functional food” will increase.

Even though *Schisandra* may not dazzle, this vine’s exciting chemistry and singular evolutionary history prove it truly stands alone. Next time you visit the Arboretum be sure to check out *Schisandra chinensis*—it tends to reward closer inspection.

Sam Schmerler recently completed his appointment as a Curatorial Fellow at the Arnold Arboretum.

Plainly Unique: *Schisandra chinensis*

Sam Schmerler