A vibrant garden scene featuring purple irises, tall purple spikes, and pink flowers in front of a stone wall. The background is a light-colored stone wall. In the upper portion, several purple iris flowers are in bloom on tall green stems. Below them, numerous tall, slender purple spikes rise vertically. In the foreground, a dense cluster of small, bright pink flowers is visible. The overall scene is lush and colorful.

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# *Cypripedium* hybrids – Jewels of the Shade Garden

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Hardy lady's slipper orchids have long been regarded as difficult to grow and expensive to buy. But this is only true for the wild species. Unfortunately most of the plants on the market originate from nature and not from cultivation or artificial propagation and this is the reason why many people have had bad results with these garden orchids. However, at the end of the 1980s two hobby breeders in the United States and Germany, Carson Whitlow and Werner Frosch ([www.w-frosch.de](http://www.w-frosch.de)), started hybrid-

izing various *Cypripedium* species and Werner Frosch's first attempt was a large success. *Cypripedium* 'Gisela' is still today one of the easiest and most vigorous hybrids, doubling the number of shoots and flowers every year. I know of a clump in a garden with more than 400 flowers after ten years, stimulated by dividing every few years.

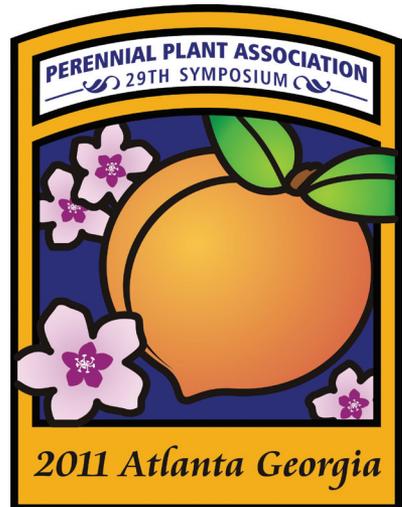
*Cypripedium* hybrids appear to be much less demanding than the species as long as the right parentage





is chosen. Hybrids also show new colors and bigger flowers. Today, approximately 180 hybrids have been registered at the Royal Horticultural Society in London and the number is still rising. Of course not all hybrids are really garden-worthy, but the potential is similar to that of the tropical lady's slippers for indoor use. Breeding and cultivation of hardy *Cypripedium* occurred 70 years after the tropical orchids, but with the same promising prospect. Recent progress has been made by developing a cloning technology for *Cypripedium* hybrids. This will make it possible within the next five or so years to offer genetically identical plants. Up to now all hybrids are produced from seed, crossing species with the normal variation within the seedlings. However, these seedlings all have the same name, e.g. 'Gisela' for the cross *Cypripedium macranthos* x *parviflorum*. The names

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of the *Cypripedium* hybrids only indicate registered crosses of two specific species, but are not clone names! This indicates how important the sources are for any hybrid (e.g. 'Gisela' from two different breeders can differ markedly) and what a big step forward the development of clone lines is accomplished by using in-vitro techniques.

The fastest *Cypripedium* hybrids need one year in the lab from seed to a small seedling (orchids need to be sown on a sterile medium in the lab in order to germinate successfully) and another three to five years in soil until their first flower. Perennial growers can now buy flowering-sized or nearly flowering-sized rhizomes and leave the production to the few



specialist nurseries worldwide. At the present time the market of *Cypripedium* hybrids is small due to the above mentioned problems. Sales of these hybrids will advance with excellent guidance provided to the home gardener and nursery individuals alike. The vigor and performance of the garden slippers is convincing. My prognosis is a market share like the tropical lady's slippers (*Paphiopedilum*) or perhaps a bit less than *Hosta* within the next ten years. This surge in lady's slipper orchids will occur when gardeners have sufficient knowledge to overcome reluctance to buy their first *Cypripedium* hybrid. When this occurs it is likely that gardener customers will buy an orchid again after one or two years even if the price is higher than other perennials. *Cypripedium* hybrids are long-lived (decades), produce more shoots every year and are completely hardy (reports from the United States speak of  $-22^{\circ}\text{F}$  with a thin snow cover without any problems). When these facts become better known and widespread, more and more garden consumers will have this experience and the *Cypripedium* hybrids will make their way on the market.

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The following suggestions are for cultural requirements for the garden and for care of *Cypripedium* in the nursery or garden centre:

### **Planting site**

*Cypripedium* grows best in semi-shade with no direct midday sun, such as a northern exposure. Most *Cypripediums* are woodland plants and therefore prefer cool sites, which do not become too dry and hot during summer. Places where ferns thrive are also suitable for lady's slipper orchids. Don't plant lady's slipper orchids close to trees or large shrubs because the roots of trees and shrubs are more effective in competing for moisture and nutrients!

### **Soil**

*Cypripedium* hybrids grow well in most garden soils. Lady's slipper orchids prefer a well-aerated, crumbly soil structure (4 inches deep) and me-

dium moisture conditions. Dense and loamy soils have to be improved with mineral materials such as crushed clay pebbles or lava. If the planting site is too wet, a drainage layer with crushed clay pebbles or lava should be added. In sandy soils, which dry out rapidly, it is recommended to increase water retention by mixing in perlite, Seramis® or Isolite®. Covering the soil with a layer of beech leaves or conifer needles has a favourable effect on structure and moisture. Lady's slipper orchids are completely hardy - no protection during winter is required.

### **Planting**

Spread the roots in the upper four inches of the soil and place the rhizome one inch below the surface. Fill in the remaining substrate without compressing it, and water thoroughly.

### **Watering and fertilization**

The soil should never dry out completely, therefore in dry summers





careful watering is recommended. Fertilize lady's slipper orchids regularly during springtime by applying commercial mineral fertilizers in half concentration. The coloration of the leaves is a good indicator.

#### **Combination with other plants**

Lady's slipper orchids look best in combination with slow-growing ferns, barrenwort (*Epimedium*) and small *Hosta* species. They cannot compete with vigorously-growing perennials, shrubs, or trees. So always look after these delicate plants!

#### **Protecting your lady's slipper orchids**

Slugs can wreak havoc within one night during the springtime. Special protection is indispensable. A slug fence or slug baits is effective.

