

Orchids Look Weak, But Many Are Stronger Than They Appear

From VOA Learning English, this is SCIENCE IN THE NEWS in Special English. I’m Christopher Cruise.

And I’m June Simms. Today we tell about the beauty and science of orchids, some of nature’s most interesting flowers.

Many people think of orchids as beautiful, sweet smelling and costly flowers that grow in hot tropical forests. But that is not the whole story of orchids. Some orchid plants can be found above the Arctic Circle. Some have an unpleasant smell. Not every orchid species is lovely. And if you want to buy an orchid, it will cost you a lot less than it once did. Even as late as 10 or 20 years ago, you might have paid \$40 or \$50 for the flower.

Orchids are among the most common plants in the world. But some orchids are in danger of disappearing forever. At the same time, orchids grown in factories have become an important greenhouse crop.

Orchid industry sales are important to places like the Netherlands, Singapore, Taiwan and Thailand. People enjoy orchids as cut flowers and decorative plants.

Orchids come in all shapes, sizes, designs, colors and color combinations. The flowers may be large or very small. But most have some common characteristics or qualities. The sepals of an orchid form the outside of the flower bud before it opens. There also are two regular petals. The third petal is the lip. Orchids share this structure with two other plants: lilies and irises.

For reproduction, orchids have male and female parts joined together into a column. This structure is the most important characteristic that identifies the orchid family.

Not all orchids grow from the ground. Some are “air plants” that grow on trees. Unlike parasites, however, they do not rob the trees of important nutrients.

Orchids grow in a lot of places. But some areas have more orchid species than others. For example, Costa Rica has about 1,500 species. The United States has about 70. Even Greenland has a few.

Some people can easily recognize common orchid plants. The Cattleya, for example, gets a lot of attention.

A white Cattleya is one of the first orchids visitors see as they enter the tropical jungle area of the United States Botanic Garden in Washington, DC. The plants have soft white petals with yellow at the center, and people stop to smell the flower. One recent visitor said it looked just like a bird. Another said, no, it was similar to a beautiful insect, the butterfly. Other people believe it looks like a star.

The white Cattleya is sometimes called the corsage orchid. People wear the cut flower on clothing to mark special events like birthdays or Mother’s Day parties. There are many species of Cattleya. Most come from the treetops in wet tropical forests in Central and South America.

But many orchids are strong. Orchid expert Tom Mirenda says some can grow in deserts or in wet, swampy grasslands. He says others can live on coastlines and on islands made of limestone coral. A few can live on salty seawater spray. Mr. Mirenda says orchids can even grow along rivers and streams, where water may cover them at times.

The Cattleya may owe its existence to William Cattley, a British botanist. One story says that in 1818, Cattley saved the orchid from being thrown away and lost forever. At the time, the plant was used as packing material that protected other orchid plants arriving from Brazil.

Another scientist named the orchid Cattleya in honor of William Cattley. But another version of the story says the Cattleya was not the first orchid ever to arrive in England and bloom.

The Cattleya grows in many colors. People often describe the deep color of the Cattleya lip as “showy.” But this part of the flower provides more than beautiful appearance. It serves as a landing area for bees and other insects that spread pollen to the plant. The colors and design of the lip help attract the insects.

The nun’s orchid has an interesting name and shape. Not surprisingly, the flower looks like the head cover worn by some Catholic religious workers. The nun’s orchid came first from China. It reached the United States in the eighteenth century. The flowers can be big, up to almost 13 centimeters across. Some are brown with a lip that looks purple. Other possible color designs include yellows, reds and browns.

The vanilla orchid also has an interesting form. The fruit is inside the seedpods of its thick leaves. The leaves grow on tree trunks. Extract of vanilla provides a spice used in foods. The tiny dark dots in vanilla ice cream are from the seedpods of the vanilla orchid. The plant grows in the rain forests of Mexico. It also is native to Central America, South America, Madagascar and warmer areas of Africa and Asia.

Like the vanilla orchid, other orchids also have uses in addition to being beautiful. In some area, people use parts of orchids as food. For example, people in tropical Asian areas may eat the tubers of some species of an orchid called Gastrodia. The tubers are eaten like potatoes. In Malaysia, the leaves of one orchid species are sold as a vegetable. And the leaves of another are cooked as a seasoning for rice.

Some cultures use orchids for traditional folk medicines. In parts of Ecuador, the thick, sticky glue-like substance from the orchid species Catasetum is thought to help heal broken bones.

It is illegal to collect orchids growing in nature. But poachers often do so. And orchids reproduce with difficulty. They depend on birds, bees or insects to spread their pollen to another orchid flower.

Some orchids trick their pollinators. Such plants produce a smell that may interest pollinators not normally attracted to them. Other orchids trick male flies by making themselves look like female flies. Still others temporarily trap a pollinator. The action forces the insects to touch the orchid pollen. They pick it up on their bodies and carry it to another flower. Once the second flower is fertilized, seeds begin to form.

Orchid seeds grow slowly. Sometimes they take months to develop inside the seedpods. The very small seedpods contain as many as three thousand seeds. The seeds float in the air when the pods break open. But they do not begin growing just anywhere.

The seeds need to be near what is called a mycorrhizal fungus. The seeds lack nutrients, and the fungus feeds them. But the fungus is rare, and some of its surroundings are threatened.

Expert Tom Mirenda says orchids growing in nature depend completely on their environment to survive. And development or natural disasters can change that environment. The orchids cannot reproduce if birds and insects are no longer living in the area. Mr. Mirenda says loss of forests and climate change are part of the problem.

Today, science and technology can produce orchids in large numbers in greenhouse settings. In 1917, Cornell University scientist Lewis Knudsen found that under some conditions, the fungus was not needed. He discovered that seeds or spores could grow if the seed could develop in a special preparation. The preparation had a sugar base and was similar to gelatin, a food product. The method was put into use a few years later in greenhouses.

Seed germination in sterile nutrients is now a common way to reproduce orchids.

Mericlone also is a common modern method of reproducing orchids. The process calls for culturing from the meristematic tissue on a plant. Active growth takes place in that area. In the process, a small piece of tissue is taken from a high quality orchid. The tissue is made into tiny pieces and grown in a laboratory. Many copies of the orchid are produced as a result.

Would you like to grow orchids at home? Some experts suggest that for beginning growers, Phalaenopsis are the best species to work with. They grow in temperatures that humans like. But they need to be cool at night to guarantee development of flower spikes.

Whether orchids are grown naturally or through technology, in the wild or at home, people who love them say they are the most beautiful flowers on Earth.