

LILIES

backwards & forwards

WHERE LILIES COME FROM, AND WHERE THEY'RE GOING.

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You may think of lilies as a classic and traditional flower—and they are. And yet, more than any other staple item that florists use and sell every day, lilies have undergone a remarkable revolution in the past 70 years.

It's a revolution that's still underway. Within the next decade, experts say, we're likely to see dynamic changes in the lily assortment. Looking for lilies without pollen, so you won't have to worry about pollen stains? Lilies of the large Oriental type, but with a less overpowering fragrance? Not to mention double lilies, miniature lilies, and an ever-evolving palette of new colors and color combinations.

Before looking at these exciting developments, it helps to review the basic lily types. The history of lilies as a modern bulb and cut-flower crop is surprisingly short. It proceeds mainly from the breeding and interbreeding of just four original types: the Asiatic group, the Oriental group, longiflorum lilies and trumpet lilies.

FROM ASIA TO LA Lily breeding didn't get started until the first decades of the 20th century, with the introduction of **Asiatic lilies**—the first group to achieve commercial success as cut flowers. Yes, they came originally from Asia—but it was an American, hybridizer Jan de Graaff of Oregon Bulb Farms, who gave the Asiatic group a big boost in 1944. That was the year in which De Graaff introduced Enchantment, a phenomenally successful, speckled orange Asiatic lily (similar to what you may think of as a tiger lily).

Other mid-century Asiatic hybrids quickly followed. As a result, after World War II, Asiatics dominated the market for more than 30 years.

Within the Asiatic group, about eight species were much crossed with each other, producing a wide range of brilliant colors: orange, yellow, pink, red—in fact, everything except blue. Some have speckles, some do not. The flowers are star-shaped and typically about four or five inches across, with long, soft, slender leaves.

The next step for Asiatics involved a cross with longiflorum lilies. Also known as Easter lilies, longiflorums are white, trumpet-shaped (longiflorum means "long-flowered") and downward-facing. As beautiful as they are, there's a reason you probably know them primarily as plants, not cut flowers: their downward-facing habit means they are difficult to sleeve and ship without damage to the buds or blooms.

Longiflorums do, however, have one characteristic that drew the attention of cut-flower breeders and growers: speed in production. From propagation to a mature bulb takes two, sometimes three years for

With flat, star-shaped flowers and brilliant colors, **Asiatic lilies** ruled the market for 30 years from World War II on. Today they have yielded much of their market share to the LA hybrids—but some varieties remain popular for their unusual colors or color combinations, like the striking Strawberry and Cream.



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Asiatics. For longiflorum lilies, the same process takes only a year, sometimes two. Inevitably, breeders got the idea, "If only we could grow Asiatics that fast!"

LA lilies are, as you might guess, a cross between longiflorum and Asiatic types. Breeders started crossing them more than 20 years ago. The first LA lilies all came in pastel colors—as though you took the vibrant hues of the Asiatic group and mixed them with a paint can of longiflorum

white. (Marketers called them "decorator colors"; others sniffed that LA's came in the same color range as ladies' underwear.) It took a few years, but slowly breeders were able to produce LA varieties that combined the swift, vigorous growth of longiflorums with the strong, bright colors of Asiatics.

Today, LA's are taking over and almost pushing pure Asiatic lilies out of the market. They're similar to Asiatics but with blunter, bigger, more balloon-like buds. The flowers face up, but retain a little of the longiflorum shape; they may not open quite as flat as a pure Asiatic lily. They may also be considerably larger than the flowers of Asiatics.

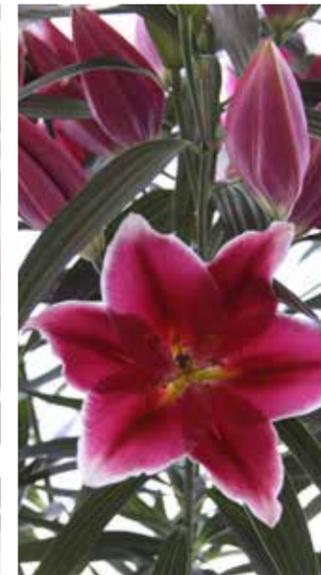


When breeders got the idea to cross longiflorum lilies (Easter lilies) with lilies in the Asiatic group, at first all they could get were pastels. Eventually, though, they managed to develop varieties with the fast-growing qualities of longiflorum lilies, and the vivid colors of Asiatics—like Ravello (orange) and Pineto (red), above. If you look carefully, though, at these **LA lilies**, you'll notice that they retain a bit of the Easter lily's trumpet shape. Original Love is another red LA lily, with a sprinkling of freckles in the center. Worldwide, most flower buyers like lilies with spots. Americans are the exception: we prefer our lilies spotless.

OUTWARD AND UPWARD Rising to prominence in the 80s and 90s, **Oriental lilies** were introduced to the market in 1975 with Stargazer—a large, speckled red lily that remained a best seller for the next 25 years.

The name Stargazer is significant: this was the first Oriental hybrid to face upward, toward the sky. Oriental lilies were developed from about eight species native to central Asia and Japan. All of these lilies grew wild in forests where there was a lot of rain. If you are a lily and it rains frequently, and if your flowers face up, you will find that your pollen gets washed away before insects can find it and carry it to other flowers—which means you can't reproduce sexually, and your species won't last very long. Therefore, the Orientals originally all had outward- or downward-facing flowers.

Today, breeders have mostly succeeded in getting the flowers to face up. And what flowers! Large, elegant, and highly fragrant, the Orientals performed well in the greenhouse, as long as they were kept cool and well shaded (just like in their native wet forests). They were less happy growing in the warmer soil of summer, or of any warm, sunny region (like those where most of today's cut flowers are grown).



With their large blooms and intoxicating perfume, **Oriental lilies** took the market by storm, starting in the 80s. The color range has always been strongest in pink or white, sometimes with a streak of yellow. Two of the earliest, most successful Oriental lilies were Stargazer, a speckled dark pink, and Le Reve, a lovely light pink. Even today, medium pinks are relatively rare. Seen here are Le Reve, the best-selling variety La Mancha, and darker pink Metropolitan.



SOMETHING TO TRUMPET ABOUT The fourth major original lily type is the trumpet. Trumpet lilies are, of course, named after their shape, having a long neck, similar to longiflorum lilies, and an even more pronounced reflexing at the tip of the petals.

You probably won't see pure trumpets being marketed as a cut flower (though they are popular as garden flowers). Cut-flower breeders noticed, however, that some trumpet lilies came in a yellow color—so they tried crossing them with Orientals to see if they could get that color into the Oriental group. When they did so, it turned out that trumpets have another helpful characteristic they could lend to Orientals: they are heat-tolerant. (In China, trumpets can sometimes be found growing on the roof, with no shade at all.)

Today **OT lilies** (Oriental X Trumpet) are making the same inroads in competition with Oriental lilies that LA's have made in competition with Asiatics. Besides their heat tolerance, OT's have another advantage over pure Orientals: their forcing time, from bulb to flower, is significantly shorter. Growers like that because it saves them quite a bit of money: imagine how much it costs to heat an entire greenhouse for just a week or ten days.

For all these reasons, the OT's are gradually growing in importance. Many growers and breeders believe that in the future, OT's will largely replace Orientals. One challenge that remains is that OT's have very big flowers, but fewer buds, and the bulbs are also very large, which makes them expensive to ship.



To the untrained eye, **OT lilies** look much like pure Oriental lilies—and that's the idea. In crossing Oriental lilies with trumpet lilies, breeders hoped to get the elegant look of Orientals in a heat-tolerant lily with a shorter growing time. With varieties like soft yellow Outback (at left) and coral Zelmira, they have largely succeeded. However, breeders are still working on getting OT's to face upward rather than down or out, just as they had to do with Orientals. Another "flaw" commonly found in OT's is that the three outside petals sometimes "trumpet": they curve back and twist a little.

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EASTER GOES EAST The latest lily hybrid, just now making inroads into the market, is **LO lilies**: longiflorums crossed with Orientals. Breeders are trying to get them shorter, more compact, and more upfacing. They could be an important step toward a

flower that looks like an Oriental lily, but with a less overpowering fragrance (the heady perfume of Oriental lilies is a feature that doesn't find favor with all customers or cultures). As with LA lilies, the longiflorum side of the cross also means that production can be speeded up, saving costs.

When LO's were first introduced (many from Dutch hybridizer Royal Van Zanten),

growers at first sneered at them, according to a Van Zanten representative. Among other things, they objected to the superabundance of foliage, which Dutch growers call "noise." One grower took them on, however—and is now making a tidy profit selling LO lilies to the upscale British retail chain Marks & Spencer. "Every variety takes time to find its way," says the rep.



In their original form, all **longiflorum lilies** pointed downward, but some, like Global Leader (at far left, in the Global series from Mak Breeding) have been successfully bred to face upwards. Breeders have also enjoyed some success with **LO lilies**—crosses between longiflorums and Orientals—some white, like White Triumph (at near left), some pink, like Bellsong or the darker Pink Heaven. The LO's look a little like Orientals, but grow faster and have a more subtle fragrance.

Lilies are propagated by "scaling." The bulb from a lily consists of a series of scales; when the scales are separated, each is capable of forming multiple tiny bulblets. Under a bulb producer's careful tending, the scales from a single lily bulb can yield hundreds of bulblets! But, to produce salable new bulbs takes a year, two years, or more, depending on the type of lily. All flower bulbs have scales, but in lily bulbs, the scales are more evident than in most others; they are looser and lack a protective covering (a "tunic") such as tulip bulbs have. At the very center of the bulb you can see the vegetative growing point from which the new lily stem will grow. With its delicate coloring, this lily bulb is as beautiful in its way as the flower.



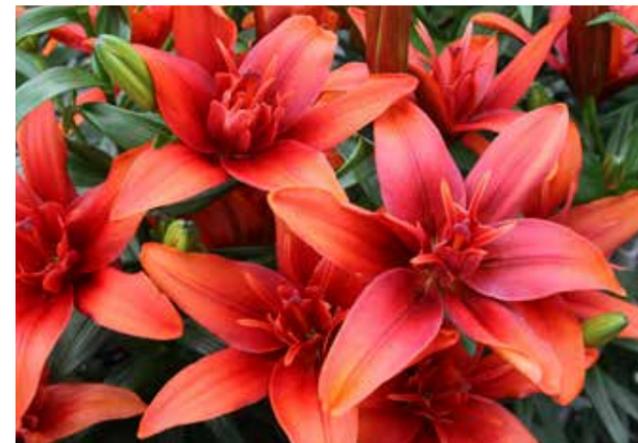
DUTCH BULBS, DUTCH QUALITY Your customers may not even realize that lilies are bulb flowers—probably because lilies are traditionally summer flowers, and most people associate flower bulbs with tulips and springtime.

Like tulips and other bulb flowers, however, lilies have a special connection to the Dutch flower industry. Almost all high-quality, cut-flower lilies—whether they were grown in Holland, California or South America—were grown from bulbs produced either in the Netherlands or by Dutch bulb producers with greenhouses in the Southern Hemisphere (usually Chile or New Zealand) to accommodate off-season production.

Every year for the past four years, lily breeders, growers, bulb producers, exporters, and traders from around the world have come together for an event known as Dutch Lily Days. Sixteen Dutch companies participate in these collective trials. It's an educational event, a business opportunity—and also a rare spectacle. Under normal circumstances, you would never get to see a greenhouse full of blooming lilies, because the lilies would be harvested just before the buds burst open. At Dutch Lily Days, however, traders can see first-hand the latest new varieties in full bloom, in greenhouses specifically devoted to the exhibition. There is no trade event quite like it, devoted to a single wide family of flowers—a family that promises to become even more diverse, more practical, more romantic and appealing in the years ahead.



Whatever the "downside" of down-facing lilies from the point of view of sleeving and shipping, the charm of these garden lilies (for example, *Lilium canadense*, in speckled orange, and *Lilium martagon*, in white) can't be denied. With their diminutive bell-like flowers, **martagon lilies** are available from some cut-flower wholesalers in Europe. The Latin name comes from a Turkish word that means turban or cap, and these lilies are also known as Turk's cap lilies, referring to the upside-down shape with reflexed petals.



Double Oriental lilies, also called Dublets or Roselilies, are still very new, especially as cut flowers, but coming on strong—and as producers scale up, we can expect wider availability at a lower price. North American florists may be familiar with Belonica, Fabiola, and other double varieties from Sun Valley Floral Farms or Green Valley Floral. The icy pink Miss Lucy (seen at right above) is yet another double variety. Like other doubles, Miss Lucy is pollen-free—although you might not notice this at first, since the anthers are hidden within the center petals. Asiatic doubles, like Red Twin, are also available, though they have not yet been adapted for the cut-flower market.

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Today the direction that lilies will take in the future is determined by just five or six companies that are specialists in the breeding of new lily varieties. One of them is the Dutch firm Vletter & Den Haan, where Arie Peterse has been working with lilies for 25 years. Much of the explanation about the history of lily breeding in the 20th century in this article comes straight from him—thanks, Arie!

To learn more about lilies, visit these resourceful websites:

BOT FLOWERBULBS
www.bofflowerbulbs.nl

DE PLAS LILY GROWERS
www.kwekerijdeplas.nl

DRAMM & ECHTER
www.drammechter.com

DUTCH LILY DAYS
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