

Garden to Vase


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# Growing and using your own cut flowers 

LINDA BEUTLER<br>Photography by Allan Mandell

Frontispiece: Flowers harvested in their prime and properly handled yield perfectly beautiful and long-lasting bouquets. Lucky Farms of Gresham, Oregon, at the Portland Farmers Market.

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This book is dedicated with utmost fondness to Wendy Street, Robin Miller, Mark Vossbrink, and the late Steve Mitchell. Together they raised me from a pup. -Linda Beutler

Nobody sees a flower-really-it is so small it takes time-we haven't time-and to see takes time, like having a friend takes time.
-Georgia O'Keeffe, letter to Anita Pollitzer, 1925

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MY FIRST REAL JOB was with a flower shop. I drove the delivery van and brought cut flowers and flower arrangements to unsuspecting community residents. I still remember the effect of ringing the doorbell and handing the flowers to people who no matter what frame of mind they were in would invariably abandon all grumpiness or worries and instantly melt into a state of pure joy, sometimes accompanied by tears. Witnessing this over and over again made me feel terrific to be the purveyor of something that caused so much happiness. This was my introduction to the potency of flowers. Whether depicted in a Sung Dynasty scroll or on a Van Gogh or Manet canvas, or arrayed in an exquisite Japanese ikebana or a fresh farmer's market bouquet, flowers artfully arranged point us on a pathway to the higher aesthetic realms where once again, even for a moment, we feel that pure joy.

I want to express my gratitude and appreciation for the gracious hospitality of everyone who allowed me to photograph for this project. In addition to those mentioned earlier, I would like to add the following: Joy Creek Nursery, Schreiner's Iris Gardens, McMenamins Edgefield Manor, Denver Botanical Garden, Hulda Klager Lilac

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Be mindful of where you want to display flowers in your house, of the surroundings, and of your style.
Floral design by Wendy Street in the home of Robin Miller, Hilo, Hawaii.

## PREFACE

An artist cannot talk about his art any more than a plant can discuss horticulture.

-Jean Cocteau

SOMETIME IN MY MID-TWENTIES I began to host the major family functions: Easter brunch, Christmas Eve's festivities, Thanksgiving dinner, wedding showers. For each event my modus operandi was the same: I planned the floral decorations first and the menu second. Anyone observing this might easily have guessed that it would only be a matter of time before I shed my desk job and began a career in floral design. At age thirty, I made that great leap of faith.

Until that time, my experience of cutting gardens had been limited to helping myself to flowers from my mother's and grandmother's gardens, and to whatever growing things might present themselves in gardens adjoining various apartments where I lived. In this way I was first introduced to such plants as alstroemeria (Peruvian lily), Kerria japonica 'Pleniflora', and Siberian iris, all growing in the ignored backyard of a vintage fourplex. I unknowingly followed the European model of including a few dollars for flowers in my weekly grocery budget and was successful at making a humble bunch of tulips, or three peony stems, enliven my flat by adding more touches of flora that were free for the picking. Finding containers was easy. Anything that holds water, or that can be made to hold water, is a floral container.

As a professional floral designer, I quickly learned that not all florists are gardeners, and not all gardeners are florists. This seemed-and still sometimes seems-odd to me. If you love flowers enough to want to spend your workday jamming them into baskets, why wouldn't you be curious about how they grow? Wouldn't that knowledge

## Art is making some-

 thing out of nothing and selling it.-Frank Zappa, The Big Book of Frank Zappa
tell you something about how they might best (meaning most naturally) be presented in an arrangement? If, as a gardener, you can create a pleasing combination of colors and textures in a flower bed, why wouldn't you think the same combination of flowers and foliage would be equally appealing in a vase? And yet there are plenty of florists for whom the artificial contortions of floral design are challenge enough, just as there are gardeners who do not have the confidence to intuit the connection between a freshly tilled plot of earth and an empty vase.

And it really is a question of confidence, of having the courage to pursue your own artistic vision; to believe that both garden design and floral design are true artistic pursuits.

Luckily, one of my earliest jobs as a florist was with Mark Vossbrink and the late Steve Mitchell (the principal partners of Rainyday Flowers in Portland, Oregon, after starting Rainyday Cactus in Eugene, Oregon), both of whom were hugely openminded about what could be used as cut plant material, and both of whom grew specialty crops in their home gardens to sell in their shops. Steve and Mark also sought local flower growers to produce unique varieties on a larger scale than their gardens could support. Being gardeners helped them create a florist shop that was peerless in floral selection and singularly artistic. Sure, they sold mums (chrysanthemums) and carns (carnations) and glads (gladioli), but they also grew and sold clarkia, allium, crocosmia, salpiglosis, ornithogalum, and lupine at a time when other florists didn't. The variety and inventiveness of their floral selection made them Eugene's and Portland's most sought-after florists in the 1980s.

Mark's and Steve's philosophy of design was deceptively simple. They never asked their designers to pull the petals off flowers and rebuild them into alien shapes. Flowers were not wired to contort their stems in directions that would be unnatural. Flowers were not dyed alien and unsavory colors. Arrangements were not created to conform to strict geometric shapes. Instead, they instructed their staff to present the cut flowers as they would grow, and to improve a flower's beauty (if such a thing can be done) by selecting several diverse foliage types rather than adding competing flowers to an arrangement. Color was agreed to be very personal, and we were encouraged to experiment well beyond the dictates of the standard color wheel. Drama was added by the bombastic use of texture-contrasting shapes and surfaces were often more important to the impression of a finished arrangement than color was. Cottage garden flowers with sufficiently bold countenance were added to Hawaiian tropical flowers with iconoclastic effect. The boys were mavericks, and they hired kindred spirits.

Whether you grow your own flowers or pick up a bunch at the grocery store, it is best not to confuse the enjoyment of flowers with investment banking. Always striving to use only those flowers and foliages that last the longest narrows your plant palette enormously, resulting in boring bouquets. Flowers should never be boring. Flowers and berries and leaves are living things, even when cut, and their maturation and decline can also be a lovely part of the design's life. Odd, isn't it, that the


Everything in this selection of flowers awaiting sale at the Vancouver, British Columbia, wholesale auction house could be grown in a home cutting garden.

## A country where

flowers are priced so
as to make them a
luxury has yet to learn the first principles of civilization.
-Chinese proverb
very people who love the autumnal season in the garden, with its ripening decay, can sometimes be the same people who want only carnations in the house because they will last for a month?

Thankfully, there are many more people with favorite flowers that are not particularly long lasting when cut. Another characteristic-fragrance, color, the satiny sheen on a new petal-is so compelling that the fact that the blossom lasts only two or three days is of no importance to these people. Some flowers hold secrets that measurably increase their longevity; you just need to learn their various tricks. Ask another gardener, read floral design books, take a class, or do as students are assigned to do: perform a science experiment. Many factors can affect a flower's vase life. This book reveals as many floral idiosyncrasies as I know, but each time you try something new, you may need to do a practice project to unlock the mystery of a different flower's life span.

I do not mean that money should be no object when purchasing or using flowers. Wasting money, or flowers, is never appropriate. Certainly you should understand from the outset that the reasons to grow your own flowers are partly to save money and partly to have a supply of the flowers you want most. If you grow your own violets or lily-of-the-valley or lilac, at least a few times during their flowering season you can treat yourself to a bountiful bouquet even though these flowers don't last long. You will feel rich anyway. When you grow your own cut flowers, you can experiment with the economy of scale. Perhaps the huge arrangement you think you cannot afford for your entry table can be cheaper to maintain over many weeks than you assume, if you use forced branches from your garden as a dramatic, long-lasting framework for a few simple flowers that you change as needed. The progression from tight green buds to puffs of cherry blossom will give you a changing indoor panorama even without other flowers. If you grow your own cut flowers, you will learn that you can have something in bloom nearly year-round, and a few naturally occurring flowers in the right container may have more impact than a giant store-bought display.

Furthermore, if you grow your own cut flowers you will become a better cut flower shopper, because you will know from experience what fresh flowers should look like. It is sometimes possible to perk up flowers that are tired when purchased, but why should you have to? If they have been mistreated, or stored too long, flowers can't help but tell you. Flowers don't lie.

Don't be afraid of getting this book dirty. My fondest wish is that you will turn to its pages often for particular instructions as well as gaining flashes of inspiration from Allan Mandell's beautiful images. Growing and using your own cut flowers is bound to make you happy in dozens of ways, and if you can pass your joy on to friends and family, so much the better. Most purchased flowers are given away. Having your own cut flowers on hand will have you searching for more opportunities to say "just because."

Grow more cut flowers; grow what you like; collect containers; practice making quick arrangements often; think about where in your house flowers would be the most welcome; notice what floral combinations please you in gardens you visit, or in flower arrangements that catch your eye; enjoy your garden even more.

## LINDA BEUTLER



## CHAPTER ONE

# Developing <br> Your Philosophy of Design 

People from a planet without flowers would think we must be mad with joy the whole time to have such things about us.
-Iris Murdoch, A Fairly Honourable Defeat

A simple arrangement of rose hips and mixed foliage captures the autumnal season. At the Rodal garden, Sauvie Island, Oregon.

PUTTING FLOWERS TOGETHER in a vase is an intensely pleasurable and personal act, even if you do it in public. It can be called flower arranging or floral design, and you may think either phrase pretentious, but what would you call it? ("Oh, it's nothing, just a little something I threw together.") We are taking flowers off of the plants that produced them and putting them into containers in combinations we like, and our language has to express the act somehow.

Floral design has often been considered a second-class profession. It is certainly more undervalued economically than any other art form. Flower arranging is not considered a fine art, although what is created is often recreated in paintings and photographs that become inexplicably expensive. Where in the signature of a painting by a Dutch master is the name of the florist who created the bouquet? We might assume the painter created the floral display, but this may not necessarily be true. Floral designers must accept that they are toiling, for the most part, in anonymity.

Florists rarely become famous. And yet when a floral display graces a gala event at a gallery or museum, the living beauty of fresh flowers easily upstages static art.

You may think it highfalutin to talk about floral design as art, but art it is. A flower arrangement is an intimate, sensual expression of creativity, always meant to be enjoyed by at least two of the senses. A florist in a shop, much more so than any other artist, is forced to produce works of art-using a highly perishable medium-on demand. Florists are performance artists whose creations grow and change and decay, and the entire process must be seen as an evolving continuum of the medium (flowers) in order to be fully appreciated. Learning to create fine art of this type takes time, and learning to appreciate it takes even longer. So if you think I'm talking twaddle, don't be too hard on yourself.

If floral designers have insults heaped upon them by the artistic community, they meet with equal if not greater disrespect among horticulturists. It is an interesting conundrum: many of the world's renowned gardeners, garden writers, plant explorers, nursery purveyors, and plant collectors scorn florists as horticultural idiots, and yet these same people think that by some divine gift they can cut a few flowers and branches from their famous gardens or nurseries and overwhelm you with their innate ability as flower arrangers. All the while, they have done nothing to the flowers to increase their longevity, enhance their beauty by inventive combination, or enliven their presentation with a container more exciting than a mason jar. Is floral design

so vastly inferior a pursuit that only an ignoramus would do it for a living? Or is it immensely complex and challenging and rewarding and a well-kept secret?

Well, I can tell you only this: good gardeners make better florists, and florists who garden create more beautiful bouquets than those who do not. Find the balance. The more you know about plants and the cultivation of them, the better floral designer you can be. Your intuition will become refined, your mind will open to the latent possibilities in any plant, and you will develop a naturalistic style that best enhances any flower. At the same time, learning how each flower and leaf can achieve its greatest longevity will make your bouquets more satisfying.

Folks who do not know a daisy from a delphinium and make bouquets with mundane flowers according to preplanned recipes, producing perfect geometric shapes or-heaven forbid-a Hogarth curve (S-shape), are not true and thorough floral designers. I can paint by number, but this does not make me a painter. The other extreme is also true: just because you can create an environment in your garden to grow the most capricious and recalcitrant plant in the world does not mean you know

What makes a good cut flower? It depends on who is asking. Lucky Farms of Gresham, Oregon, at the Portland Farmers Market.
how to put five stems together in a vase and create a pleasing result.
But art design is garden design is floral design, and the basic concepts of balance and proportion and color harmony are the same throughout.

## What makes a good cut flower?

What are the characteristics of a good cut flower? It depends on who is asking the question. For a grower, a good cut flower is one that comes easily from seed or forces quickly if it grows from a bulb, does not require too much tender loving care (in the form of water, fertilizer, and studied cultivation), reblooms often, is uncomplicated to harvest, can be stored a long time, and is sturdy enough to ship well. For a retail florist, a good cut flower has a long vase life, both in the shop cooler and in the recipient's home. It comes in lots of colors and is available from wholesale sources year-round or at predictable intervals. Furthermore, it tolerates floral foam well. For the florist with no curiosity, the answer is mums, carns, and glads.

The fact that gardening as a hobby is exploding in popularity puts the floral industry in a new situation. Hobbyist gardeners sometimes bring their homegrown annuals and perennials indoors and quickly develop a feel for the textures, colors, and proportions they like. Cut flowers bring welcome fragrance into the house. When these gardeners go to the retail florist to either augment their bouquets or buy flowers in winter, what do they find? Mums, carns, and glads. Oh my.

Let's ask the public what makes a good cut flower. Color comes first, and everyone sees color differently, expressing it verbally in a different manner. What is mauve, or primrose, or periwinkle blue? They want textural contrast, meaning daisy-shaped flowers combined with wispy flowers, and tall, spiky blossoms contrasted with those dense and round. Fragrance is much more important to customers than it is to growers or retailers. Go into a shop and ask for a really fragrant flower-in most places they will give you a carnation or a rose that looks like it should be fragrant but is not. Vase life is not the first consideration of the fresh-flower-buying public. Color, texture, and fragrance come first-much like they do when someone is selecting plants for a garden!

As you will see when you visit cutting gardens, the industry is starting to catch up to customer demand.

So what does make a good cut flower?
Color: Rich saturated colors, soft blendable colors, colors evoking a season or a mood, colors speaking to tradition, all are favored choices.

Fragrance: Our memory of smells is much stronger than we realize. A tantalizing scent adds another level of meaning to already lovely flowers. We call a child Sweet Pea, for instance. Old-fashioned small posies are "nosegays," carried to
fight the lurid smells of the bustling mobs. A gardenia may remind you of a prom or a wedding, or sweet violets may remind you of Grandma.

Texture and proportion: Light and airy speaks of wildflowers and a casual design approach, while dense petally bouquets appear luxurious and more formal. Tall vivid flowers command attention, while small dainty flowers inspire curiosity.

Seasonal associations: We like daffodils in the spring, and we want holly, evergreens, and poinsettias for the winter holidays; we like black-eyed susans and grasses and colored leaves in the fall. There are certain flowers we like best at certain times.

Vase life: How long does a flower last in a vase or floral foam-based arrangement, and how complicated is it to condition at home?

Personal preference: Most important, do you like it? Is the flower's presence greater for you than the sum of its petals?

Kinzy Faire in Estacada,
Oregon, while not planted as a cutting garden, could yield dozens of flowers for arrangements at any given moment, and you would never know they were gone.


What I said earlier, with my condescending attitude about mums and carns and glads, makes me seem a flower snob, I know, but I want to encourage you to grow flowers in your home or market garden that may not be grown elsewhere in commercial volume. And I want you to look outside the prevailing plant palette for foliage, fruit, and flowers not usually grown for cutting, and for flowers new to cultivation (at least in your area) that may make good cut flowers. Diversify and experiment.

If, on the other hand, you live in a climate where you can grow fabulously handsome gladioli, then I, for one, will be happy to admire your crop.

## A philosophy of gardening

Both garden design and floral design are about creating a dramatic big picture while simultaneously focusing on the intricate details. Just as we feel our senses to be alive in a garden, we often enter floral shops with our eyes, noses, and fingers aquiver with the possibilities therein. Alas, in the floral shop the objects of our attention may be shut away in coolers, prolonging their life but removing us from their beauty and perhaps even deceiving us about the freshness of what we want to buy. In your own cutting garden, you can create-or improve upon-floral and foliage combinations that have intrigued you in others' gardens or vases. The garden and the vase walk hand in hand.

As I add plants and various inanimate objects of admittedly dubious artistic value to my own garden, and as I amend and evolve my overall design, I keep four criteria in mind:

1. The new plant must be something I either collect or can use for cutting. (These two clauses used to be reversed in preference, but somewhere along the line I became a plant nerd.)
2. The plant or garden art in question should express a sentiment reflecting my personality, personal history, or a sympathetic creative impulse.
3. If the plant can benefit the birds I encourage to assist me in organic gardening, so much the better.
4. The plant in question should not be too vigorous or invasive even with consistent harvesting for floral design purposes. If I had a larger garden, there are plants I would grow that are too rambunctious for a small city garden. But if you truly love a plant that gets big or spreads, grow it and be happy.

Try writing a priorities list like this one for yourself. Think about how you want your garden to function, which seasons you will be most active in it, who else besides yourself will want to use it, and how it will be used. Do you want to cut flowers from your garden for your house, and how often?

My garden was initially split down the middle by a river-rock path we inherited, and the ornamental mixed-shrub border was defined by the broad stroke of an elderly plum tree that time had turned into a literati-style giant bonsai, dominating the west half of the backyard. This was a tree with presence, and I liked to think its sweeping arms, at the top of a massive curved bare trunk, outlined a proscenium arch that turned the section of garden beneath it into a stage setting for my favorite plants du jour.

## The question of proportion

When you enter a garden that does not feel right to you, take a moment to analyze why. The details bothering you about a garden are undoubtedly the same as-only writ larger than-the characteristics that are unpleasant to you in a flower arrangement. Are the plants too large or too small for their allotted space? Are the colors not what you would choose? Is there too much hardscape (patios, walkways, and the like, analogous in a flower arrangement to the inclusion of too many props, such as babys' rattles and foam-core geometric shapes) and not enough softening leafy texture? Are there too many hedges and shrubs and not enough flowers? Has the overall design crossed the thin line between bountiful and sloppy?

Visiting local private gardens hosting open garden days is a good habit to get into. You will rarely enter a garden that does not have something to teach you, be it an innovative solution to a problem you share or some refinement of your own tastes. Do not dismiss a garden you do not like-it is telling you something about yourself. Take the opportunity to observe what about the garden does not suit you. No matter what, when visiting open gardens, always be polite to the hosts, be scrupulously discreet, and never offer advice unless it is solicited. Be advised: a host-gardener venting frustration about pests or the weather or a neighbor with a misbehaving plant is not asking for your suggestions unless she or he specifically asks, "What would you do?" Should you be asked your opinion, refer to my comment about discretion.

In floral design we say the proper proportion of container to floral display is as follows: the bouquet should be one and a half to two times the height or width (whichever is greater) of the container (more on this later). This same ratio works for gardens and for containers of potted plants-gardens within a garden. For overall garden proportion, consider the size of the property and the heights of the built environment-house, shed, fence, neighbor's house. Houses well synchronized with their natural environment should not look lonely, with the plantings being flat and one-dimensional. Trees and shrubs, and even refined vines, should be placed to link the house with the garden. If these trees and shrubs have uses for decorating the inside of the house, better yet.

Conversely, it is easy to overwhelm a small house by enrobing it in a setting that swamps it, weighing it down with a mass of branches, leaves, and flowers that would do justice to a mansion in the woods. Delicacy and detail are necessary for gardens meant to enhance a small house.

When you are decorating the inside of a house with flowers, considering proportion is just as crucial. Big entry halls need big arrangements of the sort that would make navigation impossible inside a cottage. Intimate bouquets in grand houses must be placed in a context where they will be noticed and appreciated as adding to the luxury of the place; if we miss seeing them, they are wasted. In small homes, it may only take a couple of modest centerpieces on a coffee table and in the dining room to make the house seem full of flowers.

Of course, presentation is everything.

## Emotional effect and meaning

"Cute" has to have the courage of its convictions. Merely cute is never enough to be memorable, and may, in fact, be annoying. If your taste leans toward cute, then you must pursue "cute as a button" and nothing less. The inherent lightheartedness of a cute flower arrangement is just one example of the emotional effect you may want to create with your garden and the bouquets you generate from it. Others see cute as cloying-those folks are jaded and cynical, the real flower snobs. Serenity, romance, festivity, intrigue are all states of mind evoked with the simplest combinations of flowers and foliage, in the ground or in a vase.

An emotional response to cuteness is just one of a legion of emotions we can evoke with flowers, in this case inspired by flowers that are little and lovable. The opposite end of the spectrum would be the maiming of flowers to evoke anger and hatred. Here I am remembering the unfortunate 1980s fad of sending a newly divorced spouse or ex-companion flowerless thorny rose stems-or, in the same vein, roses that had purposefully been left out of water to become limp, well beyond the point of being revived, and sprayed black. If one were the recipient of such a bouquet, there would be no mistaking the message.

In the back of the book you will find a list of the meanings of flowers, handed down through the ages in folklore or created in more modern times by marketing experts. The latter have both concocted meanings for flowers that never had them before and changed the significance of flowers that have historically carried a negative message. An example of this is the yellow rose. Traditionally it symbolized jealousy; the recipient was engaging in behavior engendering envy and insecurity in the sender. Sometime in the 1920s we began reading in advertisements that yellow roses were the symbol of friendship; the sender either wished to become friends with the recipient or to state plainly their relationship. Suddenly yellow roses enjoyed a boost in popularity.

Herbs and cottage garden flowers were sometimes given their meanings based on how they grew and were used domestically. The "doctrine of signatures" suggested that plants that looked like a part of the body would help that part when prepared for medicinal use, and thus certain plants became associated with the heart or another organ that might have been perceived to be the seat of certain emotions.


Sunflowers, in addition to being a popular design motif, symbolize loyalty.
Pike Street Market, Seattle, Washington.

Plants that spread rapidly from seed or were tough and enduring came to symbolize human personality attributes-or deficits, as the case may be-in the language of flowers. For instance, alliums, the ornamental and culinary onions, because of their strong odor and ability to withstand many types of garden conditions came to symbolize courage. Common sunflowers (Helianthus annuus), by virtue of the fact that their blossoms follow the sun as it makes its high arc over the summer garden, came to be associated with loyalty.

Romantic meanings for flowers gained currency in a time when lovers were often thwarted and controlled by the prevailing moral standards. Except with family and in the company of servants (both being situations thought safe from impropriety), young men and women having any social standing were not left alone together. There were chaperones abounding, and they could only be circumvented by carefully composed nosegays, each flower and leaf fraught with meaning, pressed into the hand of the beloved secretly in passing, or delivered through a trail of servants, relatives, and friends. Flowers delivered proposals and broke off engagements with the precision of a telephone call and were always beautiful even if the intended message was most decidedly not. Only in our modern times have innocently grown flowers been made hideous to unmistakably convey darker meanings.

## Color makes emotion

Nowadays color is the carrier of emotion, not the specific type of flower. Red is vividly passionate and conveys the strongest statement of love. We may think first of red roses, but any bouquet predominantly red can carry the message of intense feeling. Modern red roses may be stiff and are commonly presented in a formal way, but a bouquet of fiery tulips says the same thing: "I adore you, and your beauty renders me speechless. I can only tell you with flowers."

Yellow, while gaining momentum as the color of friendship and sociability, is still burdened by visions of jealousy and lost love. In the nineteenth century, yellow was the color that expressed having "the blues." Although we now associate yellow with warmth and cheer, as well as intelligence and a lively mind, this ancient burden of sadness has never fully been transferred to blue. After the reign of the sunflower as a decorating motif in the 1990s, there is no getting around it: in our current age yellow is primarily thought to be the color of sunlight, stimulating our eyes and lifting our spirits.

Having "the blues" is a relatively modern concept. Blue is also the color of healing and serenity. It is the family of hues least stimulating to the color sensors in our eyes, and we can look at shades of blue for a much longer period than mixed tints of red or yellow. It is the traditional color of forgiveness (spouses in the doghouse would do better to send ten blue iris than a dozen red roses, whose color further might stir the ire of a wronged mate), and when the merest touch of red is added, blue becomes
the color of enchantment, purple. Blue must be pure to photograph well, and the human eye is easily fooled into seeing blue where it does not exist, as in the feathers of birds.

Creating bouquets with mixed colors, as long as the relative strength of hue is the same, always strikes me as festive and stimulating. Others prefer monochromatic combinations, where tones vary only slightly from flower to flower; the effect is more calming and, some would say, elegant. Depending on the context of such an arrangement, I might also find it boring. Still others might want the simple contrast of just two opposing colors-yellow and blue, purple and orange-to set in motion a pleasing vibration that will be bright but will not clash.

Here are some color terms that you might find useful to know and that will help you better communicate your preferences.
black: Black is the absence of any color wavelength and does not appear in a spectrum.
color-sensitive cells: There are three types of color-sensitive cells in the human eye, all known as cones, each responding to one of the three primary colors. Rods detect only differences in tones (amount of light as compared one color to another).
color wheel: A color wheel is a circle of colors formed by taking a linear spectrum and connecting the ends. This wheel helps us visualize which colors are in which primary groups, what harmonizes and what contrasts.
contrasting colors: Contrasting colors are those colors that lie on opposite sides of the color wheel from each other (for example, orange and purple).
cool colors: Cool colors fall into the blue-influenced half of the color wheel and include all tones of blue, purple, violet, and green.
harmonious colors: Harmonious colors are those colors that are adjacent to each other on the color wheel (for example, purple and blue).
hue: A hue is created when black is added to a fully saturated color (for instance, blue + black = navy blue). This term is often used interchangeably with shade.
pastel color: A pastel color is created when a saturated color is diluted by 50 percent (or more) white.
primary colors: The three primary colors-that is, those basic colors found in their pure form in nature-are red, yellow, and blue. All other colors are combinations, tints, or hues of these three colors.
saturation: Saturation refers to the intensity of a color. The more pure a color is, the greater its intensity or saturation. The level of saturation is changed in gardens by blending colors with lighter, darker, or variegated companions.


The emotions evoked by primary and secondary colors are immediate and direct. Red and orange get us all worked up. At McMenamins' Edgefield Manor, Troutdale, Oregon.
secondary colors: Secondary colors are those three colors created by blending the three primary colors together: green (blue + yellow), orange (red + yellow), and violet (red + blue).
spectrum: The spectrum is the immutable order of light wavelengths producing visible color as sunlight passes through the earth's atmosphere (red to orange to yellow to green to blue to indigo to violet). It starts with infrared and ends with ultraviolet.
tint: A tint is created when white is added to a fully saturated color (for instance, red + white $=$ pink).
tone: Tone is the measurement of brightness (lightness or darkness). Violet has a dark tone, yellow has a light tone. White and black are tonal extremes.
warm colors: Warm colors fall into the red-influenced half of the color wheel and include all tones of red, orange, yellow, gold, and the hot pinks.
wavelengths: Color is created by light from the sun traveling through our atmosphere at various speeds. The shorter (faster = shorter) the wavelength, the brighter the color. Red is fast (has a short wavelength), blue is slow (has a longer wavelength).
white: White is the combination of all color wavelengths and so does not appear in a spectrum.


## CHAPTER TWO

## Flowers from Your Own Garden

Every flower about the house certifies to the refinement of somebody.
Every vine climbing and blossoming tells of love and joy.
-Rogert G. Ingersoll, How to Reform Mankind

In the display garden at Northwest Garden Nursery in Eugene, Oregon, the drama in the borders could just as easily be played out in a vase. Most of the plants we see are apt selections for floral design.

PERHAPS YOU GROW only vegetables surrounded by a patch of lawn. Perhaps your garden is parklike, heavily weighted to trees and shrubs. Maybe you have island beds of herbaceous perennials. Maybe you have what you think is a prohibitive amount of shade. In any case, there is something there for you to use in cut bouquets. If you are worried about preying on your garden too much, just think of harvesting flowers as either early deadheading (removing spent flowers from plants) or muchneeded pruning to keep your Eden in bounds.

Most gardeners I talk to are reluctant to harvest flowers from their gardens. In the next breath they complain either about constant deadheading or about their lack of ability to arrange cut flowers. Many of the plants we grow in our gardens rebloom if the spent flowers are removed, so why not remove the flowers when they might still have a few days of sparkle left to brighten a powder room or your bedside table? And any gardener who can put two plants together to make a pleasing composition in the ground-say, a clump of dainty columbine dangling over a sturdy mound of hosta leaves-should be perfectly assured about picking two stems of columbine blossoms and a leaf or two of hosta and pairing them in a bud vase to sit on the breakfast table.

In a nutshell, gardeners do not want to defile their gardens nor do the cut flowers an injustice once they are in a vase. But one cannot argue, at least, with the price of the flowers! If you love flowers but consider them expensive to buy, then there is nothing for it but to use your own garden to supply your habit. You may say that you do not have a cutting garden, but if you have any plants at all, you have a cutting garden.

## New uses for old friends

Look through the plant directory in the latter half of this book and you will see many old friends there. If you already garden, chances are you have many plants that produce serviceable cut flowers and foliage. Even a pedestrian foundation planting is composed of plants apt for cutting use. Some of the best of these are woody shrubs that you originally selected for their bountiful flowers, showy foliage, or comely fruit. All of these facets will prove useful in floral design.


The Rodal garden features many, many early-flowering shrubs, which will need little additional adornment to fill vases exuberantly.


From the Rodal garden to the lobby of Reed College's Kaul Auditorium in Portland, Oregon.

Moreover, woody shrubs provide the bones not only of your garden, bestowing nearly permanent structure and definition, but of flower arrangements, too. When creating large bouquets, I often start with the tallest, most handsome stems of a dominating woody plant, giving an initial outline to the floral display and reminding me of the lines and themes I wish to enhance as I add more plant material. Garden designers create gardens in the same way-the bones go in first.

Early-blooming woody shrubs are easily tricked into flowering indoors even earlier than in the garden. This is done by a procedure called forcing. Here again garden maintenance and floral design can work together. Shrubs that need pruning can have their semi-annual tidying done when they are about to flower, with a portion-or all-of what has been pruned going right into a bucket of warm water in the garage. You may or may not choose to leave twigs and branches on the shrub for this year's outdoor display, but perhaps the plant was sadly in need of reshaping, and your harsh and immediate measures were necessary. Pruned branches come into the house in buckets of warm water, which are placed in larger decorative containers. Over time, the flower buds on the branches open into fantastic displays.

Evergreen shrubs fall into two categories: those that have leaves (broad-leaved evergreens) and those that have needles and carry their seeds in cones (conifers). The evergreens are endlessly useful both in the garden and in the house. If we look at how we use evergreens in the garden, we will instantly know what role they should fill in a bouquet. Typically evergreens are background plants-this is the stuff of hedges. Evergreens cover that which is unsightly, provide additional definition, and in a neutral way fill in the bare edges and open spaces. Vines are encouraged to wander into these plants and be supported. Tall, flowering herbaceous perennials are manipulated into leaning into a sturdier host, and often the result is splendid.

Unfortunately, the foliage of conifers has come to be associated with Christmas, even though the Druids were worshipping trees at the time of the winter solstice long before three wise men traveled to Bethlehem. The usurping of the winter tree celebration by the Christian culture has had one sorry effect that manifests itself in several ways. Those from different cultures do not follow this Christian custom and so do not want conifer foliage in bouquets they purchase or make in winter. Even those who celebrate Christmas intensely associate conifer use only with holiday bouquets, and it is hard to get them to use or buy this foliage any other time of year. However, there are many conifers that can easily be used as accent foliage all year long, because their texture or color is unique. It would be a shame to lump them into a group that is used for only four weeks, more or less, out of every year. Look at your Cryptomeria japonica 'Elegans' in late winter and Chamaecyparis pisifera 'Golden Mop' all year round-these are distinguished plants that deserve to be seen up close, as one can do in flower arrangements.

It is less easy to pigeonhole the leafy evergreens, except to say that some are hardier than others. I am prepared to wax eloquent about the genus Pittosporum, which I have used as cut foliage for most of my career, although I am only now learning how


Old-fashioned roses, such as the Hybrid Musk 'Robin Hood' from the 1920s, are more versatile as garden plants than are modern Hybrid Tea roses.
many species of it will grow well in my zone 8 garden. These are handsome and often fragrant Southern Hemisphere shrubs available in many variegated forms, and, like the conifers, these are long lasting in arrangements.

Woody plants, including evergreens, have special needs that must be accommodated if you are to use them as cut foliage. When harvesting even small twigs from shrubs, take care to avoid leaving visible stumps. In your own garden, you will have to live with the results of sloppy pruning practices. When cutting a branch from any shrub, you will want to cut the stem back to its origin on the main trunk, or to the closest crotch, so that the results of your pruning are not at once obvious, and your plant will heal its wounds and recover quickly.

And then there are roses. They are woody shrubs, you know.

## Roses as ornamental woody shrubs

There are hundreds of books about growing unblemished Hybrid Tea rose blossoms, and the many stupifyingly boring tasks that must be repeated over and over, each
month of each year (or so it seems), to reach and maintain a level of perfection. These plants are sometimes not winter-hardy, so extra research is necessary to find those that are. Modern roses are heavy feeders, and will need, at the very least, a heavy mulch of well-rotted manure twice a year. Hybrid Tea roses are susceptible to fungal diseases, the big three in North America being black spot, powdery mildew, and rust disease. There is mounting anecdotal evidence that spraying with manure teas and other types of organic concoctions to change the pH of the leaf surface will act as a preventative for such ills, but any of the common recipes must be applied regularly (every ten to fourteen days during the growing season), and these are not curative potions.

Hybrid Tea and Floribunda roses must be pruned at least twice annually, with a third to a half of the plant cut back in the autumn so that winter winds do not rock the plant and thus allow cold air to get at exposed roots and freeze the graft union. The second prescribed pruning is much "harder," meaning that only canes twelve inches in height will remain. This hard pruning is usually done in the City of Roses, Portland, Oregon, between Valentine's Day and St. Patrick's Day, when the stem buds have started to swell and you can cut precisely. What a bother. If there is more cold weather after the false spring that lured you out to prune your roses in the first place, you can bet on tip dieback on the newly bestumped roses, making them even more diminished and weakened.

Although they come in a truly vast array of colors, many of the modern roses no longer carry the divine scent associated with them. This is perhaps the greatest tragedy about the latest Hybrid Tea and Floribunda roses; whether they were meant to be broodmares in an Ecuadorian greenhouse or for fussy gardeners who want just the right color, roses are expected to be flower-making machines. Their plant does not have to look good, and now the roses themselves no longer have to smell good.

Which brings me back to the fact that rosebushes are woody shrubs. We should expect more than a time-consuming spoiled brat of a plant. Most other flowering woody shrubs have multiple seasons of interest, are hale and hardy, and grow best in association with other plants. All roses used to be like that, and without too much looking we can still find the crème de la crème of old garden roses, some of which make very fine cut flowers and certainly equal any modern rose in beauty. (Roses as cut flowers are discussed in a later chapter. Here we will talk about them as garden plants.)

The history of roses' modern cultivation begins centuries ago with that marvel of genetic instability, Rosa gallica. Native to Europe, especially France, this rose shows not only a penchant for mutating on its own but also a promiscuous ability to cross with any other species that wander into its habitat or are brought there. The four main old garden rose groups are all related to it:

The Gallica Group: These roses are directly related to Rosa gallica and are direct selections or mutations of it. The flowers can be single (Rosa gallica var. officinalis), semidouble ('Tuscany’), or fully double ('Charles de Mills') and can be wonder-
fully fragrant. The plants form thickets of slender well-bristled canes. Flower colors range from pale pink to dark burgundy, and flowers may be striped.

The Alba Group: The roses of this group are assumed to have originally been naturally occurring crosses of Rosa gallica with Rosa canina (the dog rose). Their hybrids are fully double, somewhat shade tolerant, with handsome blue-gray foliage. The usually double flowers are pale pink or white, including 'Maiden's Blush', 'Königin von Dänemark', and 'Madame Légras de St. Germain'.

The Damask Group: When the crusaders returned from the Middle East with roses native to that region, these interbred with Rosa gallica and other European natives to create another distinctive and ancient category. These are the roses we make perfume from to this day, and many named forms are still grown. They are fully double and can be white, pale pink, and a dark, rich medium pink. Still available from specialty growers are 'Madame Hardy' (white), 'Leda' (red buds produce white flowers tipped in red and pink), and 'Quatre Saisons' (pink, and the only repeat-flowering member of the old rose tribe).

The Centifolia Group: We know these as the cabbage roses, emerging from obscurity to enliven the Dutch masters' brilliant paintings in the 1600 s. This group is a complex cross between our friend Rosa gallica and roses that had also contributed to the Damasks, Rosa phoenicia, Rosa moschata (the Musk Rose), and Rosa damascena. These were not deliberate hybridizations but natural crosses that created seedlings that intrigued rose growers of the day. The flowers are fully double and nearly spherical. Again we see that same limited old rose color palette, including 'Fantin Latour' (pale pink), 'Tour de Malakoff' (magenta), and 'Unique Blanche' (silken white).

An adjunct of the Centifolia and Damask Groups is the Moss Group. Moss roses are so named for the proliferation of scented glandular growths that look like mossy bristles along the flower stems, ovaries, and calices. Moss roses are sports-genetic mutations that maintain their integrity when propagated. Moss roses are mostly double, and the colors range from pale pink to smoky burgundy. Favorites are 'Henri Martin' (strong pink), 'Nuits de Young' (dark burgundy, with the common name old black), and 'William Lobb' (lavender-pink, darkening as the flowers age).

These five groups of roses hybridized with each other and were crossed-initially accidentally-with roses brought to Europe by plant explorers from China. The Chinese understood plant breeding and had created wonderful roses from their more eclectic native species, which included plants producing flowers that were truly red, truly yellow, larger flowered, with different habits of growth. All of these begat newer groups of roses able to repeat their flowering throughout the growing seasons, bringing forth such groups as the Portland roses (named for England's Duchess of Portland), the Bourbon roses, and eventually the Hybrid Perpetual group. New colors


Grape hyacinths (Muscari armeniacum and M. muscarimi), small as they are, can be used with simple effectiveness in the spring, as seen here in the home of Mike and Linda Darcy, Lake Oswego, Oregon.
emerged: true lavender, buttercream yellow, peach, and apricot. These were the predominant roses of the nineteenth century, when rose breeding and growing simply exploded in popularity.

Finally, in the 1860s, a Hybrid Perpetual rose was crossed with a Tea-scented rose, to create the Hybrid Teas, with their elegantly pointed buds and oval profile, and a tremendously varied rainbow of color options. The first Hybrid Tea was called 'La France'.

Generally speaking, old garden roses (OGRs) are much easier to grow and use in the garden than Hybrid Teas. They are more disease resistant and so can be closely interplanted with other kinds of plants. They are hardier than Hybrid Teas, some withstanding winter temperatures down to Zone 4. As a group, the OGRs are much more fragrant than modern roses. Certain OGRs make wonderful cut flowers, especially those in the Portland Group, such as 'Jacques Cartier' and 'Yolande d'Aragon'. Until the creation of the Hybrid Teas, it was not necessary to follow a complex pruning routine when growing roses. The onus of a limited color palette was offset by the wild beauty of the flowers, the intoxicating perfumes, and the ease of care.

Species roses bring another set of virtues to the table. These are the roses that will, for the most part, create beautiful hips as they mature; round, oval, or flagon shaped, in colors from yellow to orange, Chinese and true red, and even the color of milk chocolate. Some, such as Rosa helenae, develop vivid autumn foliage colors. These may be fragrant; they make wonderful hedges and focal plants in gardens, giving three seasons of interest and ample scope for floral design.

If you want roses for cutting but have a small garden that dictates that they must be interplanted with everything else and provide more than one season of interest, then let me heartily recommend the old garden and species roses. They can do everything a good ornamental woody shrub should do.

## Perennially useful herbaceous perennials

When I was a child my mother had an herbaceous perennial garden. The memory of its component plants has stuck with me throughout my gardening life, and such simple plants as Monarda didyma 'Cambridge Scarlet' (bee balm), Centaurea montana (mountain bluet), and Muscari armeniacum (grape hyacinth) are my "comfort food plants," the first to be planted in any new garden I make for myself. All three, and all of the other plants in my mother's garden, make excellent cut flowers.

A childhood tradition in my neighborhood was the anonymous delivery of paper May Day baskets to the doorknobs of unsuspecting households. The night before May 1 was spent making paper cones and affixing paper handles to them with inordinate amounts of Elmer's glue and Scotch tape. The next morning the flowers would be picked and placed in their baskets, without water. Favorite neighbors would hear their doorbell ring and open the door to find their gift, with either the sight of fleeing
children or the sound of a chorus of giggles from behind the clipped boxwoods at their porch. The flowers we used were columbines and grape hyacinths, early iris and tulips and forget-me-nots. Peonies were too big for the baskets, but anything daintier was fair game. I know now that my mother was a really good sport.

Even the most casual herbaceous perennial garden is a cutting garden. Most herbaceous perennials make excellent cut flowers, and using them in this way actually prolongs their blooming season. Such plants as Scabiosa caucasica (pincushion flower) will bloom all summer as long as they are not allowed to set seed. Remove the mature flowers while there is still some life in them, enjoy these in the house, and you will have encouraged these plants to produce more flower buds.

These are my ten favorite herbaceous perennials, all treated in more detail in the plant directory:

## Alchemilla mollis (lady's mantle) <br> Centaurea montana var. alba (white mountain bluet)

Helenium autumnale 'Butterpat' (Helen's flower or common sneezeweed)
Lilium regale (regal lily)
Muscari neglectum (grape hyacinth)
Paeonia lactiflora 'Coral Charm' (peony)
Polygonatum multiflorum (solomon's seal)
Rudbeckia triloba (brown-eyed susan)
Scabiosa caucasica 'Fama' (pincushion flower)
Thalictrum rochebrunianum (meadow-rue)

When you do take flowers from an existing perennial bed, be subtle and sly about covering your tracks. Do not leave stumps on your perennial stems. Cut the flower stems back into the lower foliage so that beheaded ends will be hidden, even if you do not need so much length for the final arrangement. You can always make a stem shorter, but once a stem is too short, then where are you?

## Raiding the herb garden

Gardening with herbs is another ancient form of horticultural addiction. What makes herbs so universally grown is that as a group they are tough plants-they will put up with excessive heat, poor soil, and the constant removal of their bulk for culinary and medicinal purposes.


Allowed to cross-pollinate, two varieties of ornamental oregano have interbred, producing results more glorious than the parent plants. At Kinzy Faire.

The sensuous nature of the herbs we grow, their scents, colors, and textures, make most of them admirable selections for household bouquets. In floral design they are valuable also because many are evergreen and can provide handsome foliage, if not also flowers, year-round. Rosemary (Rosmarinus officinalis) is a premier example of this virtue, as well as Ballota pseudodictamnus, with its terrific fuzzy celadon-green foliage.

Also coming primarily from the herb garden are the many scented geraniums (Pelargonium species and cultivars), with somewhat diminutive flowers but uniquely textured foliage, ideal for use in short bouquets like nosegays, where including a scented component is literally mandatory.

The genus Salvia also provides us with a host of useful herbal plants for both foliage nearly year-round (Salvia officinalis and Salvia officinalis var. purpurea) and flowers, usually on composite spires in neon shades of pink, red, or purple. Special favorites for cutting are the clary sage of cottage gardens (Salvia viridis), with its showy bracts surrounding unprepossessing flowers, and Salvia elegans, the pineapple sage, which flowers late in the season carrying tubular electric red flowers.

Oregano is not just for Italian food anymore. The ornamental oreganos have marvelous flowers, all useful as dried flowers as well as in fresh arrangements. Some cultivars, such as Origanum 'Hopley's Purple' and 'Herrenhausen', have comparatively tall flowers (to 20 inches tall) composed of pointed clusters of branchlets with purple stems and showy purple bracts. These tall forms have tiny pale lavender or white flowers, but it is the bracts that attract attention from pollinators, and florists!

Shorter oreganos have short flower stems, and these carry heavy, hoplike flower structures that are attractive draping out of containers or skirting pathways in herb and rock gardens. Select from Origanum rotundifolium and other species; look for the cultivars 'Barbara Tingey' and 'Kent Beauty', both of which have large bract structures of pale green, blushed with pink or lavender as they mature, from which their inconsequential flowers emerge and recede.

If you grow both the tall and short forms of oregano, you will be delighted by the hybrid seedlings that will volunteer around the area of their parents. At Penny Vogel's garden, Kinzy Faire, in Estacada, Oregon, the rock garden is awash in mid-to-late summer in the most gorgeous array of oregano youngsters I have ever seen, with spontaneously occurring hybrids that, speaking as a floral designer, make my mouth water.

The value of lavender (genus Lavandula) is immense. Not only are the flowers marvelous, but the usually gray foliage has a much longer period of usefulness than even the flowers. Research which varieties will be hardiest for you, as species and cultivars vary in the amount of cold and winter wet they will tolerate. In the lower reaches of its comfortable growing zones, it is important not to prune lavender after early autumn, as any new growth will be produced too late in the season and will suffer from the winter cold. In my zone 8 garden I grow both Lavandula stoechas (Spanish lavender) and Lavandula dentata (French or toothed lavender), and late-season new growth tends to blacken and die by March of the next spring, looking unsightly as the fresh growth emerges. This is avoided by confining the harvesting and pruning-which are sometimes one and the same-to spring and summer. If you do have winter dieback, do not remove it until after your last frost date in the spring, when young growth is clearly visible. There may be less dead than you think.

As stated obliquely above, most herbs need full sun and poor soil, and a bit of lime occasionally in acid soil areas. Regular shearing helps them look full and lush-many herbs develop woody crowns that will look barren and leggy at their centers if not hard-pruned regularly. This is especially true of culinary sage, thyme, lavender, and ornamental oregano.

## Planning a cutting garden

Just how excited are you about the prospect of growing your own cut flowers? If you have a generously sized vegetable garden, perhaps adding your favorite flowering
annuals as row crops will be enough to make you happy. You may want a formal, welldefined cutting garden so your ornamental garden does not have to bear the brunt of your predations. Imagine how often you will want to cut flowers. You may find yourself wishing you had put the cutting garden closer to your house. Let us consider all of these factors as we plan a cutting garden.

If your garden has a lot of shade, you may have assumed a cutting garden, however much desired, simply is not possible in your garden plan. But no matter what your climate or light exposure, you can grow flowers and foliage for cutting, even in the shade. Peonies are one of the hardiest flowers to grow, thriving down to zones 3 to 4. Aconitum napellus is not only hardy, it is also shade loving and lasts longer than its sun-worshipping cousin, Delphinium elatum. Hydrangeas can tolerate partial shade as well as full sun but will need ample water in either case.

Soil structure is another factor to consider when assessing what to grow. Few of us are blessed with sandy loam, considered the most virtuous of soil types, which combines innate fertility with excellent drainage. Clay soils are composed of fine particles that may be full of nutrition but are reluctant to drain, leaving the soil moisture relatively high all year, a situation disliked by some herbs and shrubs. Sandy soils, while making bulbs relatively happy, tend to need nutrients replenished frequently, and they dry too quickly for moisture-loving plants.

Once you have learned which plants thrive best in your climate with the light exposure and soil you have, you can select from the plant directory the specific plants you like. Assuming you have room in your garden to create a separate cutting area, also consider whether you want it contained and somewhat out of sight, or whether that matters to you. After all, any awkward, out-of-the-way patch of ground will do.

There are many excellent plants to use as hedging or screening that also generate lovely cut flowers. Hydrangeas are an option, Viburnum tinus also, and other flowering shrubs combined with those two suggestions, extending the time of production yet blocking the view of bare earth or spent annuals or newly harvested plants within the cutting garden proper.

A fence around the cutting garden is also an admirable choice, as the sunny sides of it can be used to support flowering annual vines requiring heat. Options include sweet peas and hyacinth beans, or if perennial cover is wanted, a clematis producing cut flowers would be ideal.

If you have full sun exposure and opt for enclosure, you will be able to set aside space for Hybrid Tea roses, which require an area where they are the only plants grown, as they need ample air circulation. Those of us with mixed borders, where many types of plants are grown in close proximity, choose old garden roses instead. In a cutting garden, where the overall garden aesthetic is moot, Hybrid Teas can be grown in all of their awkward glory.

Within your cutting garden, even if it is in full sun, you will need to consider the mature height of the various chosen plants. Some of the annuals (cosmos, sunflowers) produce fairly dense shade in mid-through-late summer, so shorter sun-lovers will

need to be placed on the south or west side of taller stands. This gives those gardeners with sun the further option of placing plants that wilt in the heat of summer, such as feverfew, the opportunity of having shade at the right time. Your hedge or fencing also creates lower-light areas. For maximum production from your cutting garden, all of these niche planting areas provide delicious challenges. "No bare earth" should be your motto, except for access paths. Access paths should be stout enough to handle heavy traffic.

Notice the direction of the arc of the sun over your defined flower patch. If you plan to grow plants in rows, these should be oriented in a north-south direction, so both sides of each plant will get an equal amount of light as the sun moves from east to west. In more northerly gardens the plants at the north end of a row may get less light as the growing season wanes, but annuals grow so fast that this hardly matters, or you can cut or prune the southerly plants to be shorter.

Always consider where the sun will not reach, and where your plants themselves produce shade.

In Rosemary and Cliff Bailey's Snohomish, Washington, garden, the new cutting area was immediately outfitted with ready access to water. Photograph by Linda Beutler.

## Access and maintenance

If you plan to take the tending of your cutting garden seriously, then its proximity to your house is a critical consideration. If you have a kitchen garden that is handy, then converting some of it to cut flower production is easy.

Production is the name of the game in a cutting garden, and this means you want very fertile soil indeed. Have your soil tested and make any necessary amendments. Good cutting gardens, in addition to making lots of flowers, make lots of waste, which can all be turned into compost and returned to the soil. Most plants making volumes of cut flowers, such as phlox and delphinium, are heavy feeders. Fertilizing them well after each harvest insures quicker rebloom. Even flowers grown from bulbs, like tulips and daffodils, require a feeding as they emerge in early spring and again right after you pick them. Do not skimp on nutrients for your cutting garden.

Cutting gardens are high maintenance. Forgetting to water at a crucial time, leaving tall plants unstaked, and neglecting the meditative task of deadheading can be disastrous, especially if there are timed plans (weddings, parties) for some of your flowers. Keeping plants that rebloom harvested is often vital to their overall performance, so ready access to the cutting garden is important.

A water source should be close at hand. Dragging a 100 -foot hose across your ornamental garden or lawn to get to your cutting garden is not something you will want to do often, and you will do it less as time goes by. Most summer-blooming plants will need ample water to maintain their vigor, and a water source, be it a plumbed hose bib or a long hose stretched to the cutting garden and left there, is of paramount importance.

If there is a part of your garden crying for a storage shed, the cutting garden will be it. Buckets for conditioning, in several sizes, should be kept there, as well as tools for cutting. If you already have a potting shed, look for a way to site your cutting garden nearby. Store everything you need for harvesting in it, including raffia or twine and a few of your favorite casual vases.

To recap: To get the best use of your cutting garden, build in conveniences to make harvesting all the more pleasurable and efficient, including easy access to water and storage. Plant placement should be dictated by where the sunshine falls, and the siting of tall and short plants should be planned accordingly. Then select plants appropriate to the site and tend them with an eye toward maximum production.

Above all, do not be afraid to grow something new as a cut flower or foliage. You just never know what flower or leaf will turn out to have excellent longevity and surpassing beauty.


If your cutting garden rewards you with more flowers than you need, go into business!


## CHAPTER THREE

# From Garden to the House 

Fair flowers that are not gather'd in their prime
Rot and consume themselves in little time.
-Shakespeare, Venus and Adonis

Workers at family-owned and -operated Lucky Farms, of Gresham, Oregon, harvest hundreds of dahlias at the height of their season for the Portland Farmers Market.

HOW YOU HANDLE your freshly cut flowers, and when you harvest them, will in large part determine how long your flowers prosper. Although this is not investment banking, and we know our bouquet will not last forever, we do want to get as much display time as is reasonably possible out of each stem. Sad to say, prematurely declining arrangements are often caused by "operator error." The process of taking freshly picked flowers and preparing them to be added to arrangements is known as conditioning, and it is a very important process indeed. Certain types of flowers require specialized conditioning, and that is part of what we are going to discuss now. The more you know about conditioning, the longer you can make a cut flower last in a vase.

The importance of proper harvesting and conditioning cannot be overstated. It is a romantic fallacy to think that one can run out to the garden willy-nilly, pick a bouquet of flowers, plop them in a vase, and have them last for more than twenty-four to fortyeight hours. The lesson here is that as spontaneous and idyllic as picking a bunch of flowers seems to our imagination, the reality is that assembing good bouquets takes time, and a little bit of forethought and extra care yields a better arrangement-more attractive because the flowers are in better shape and last much longer.

The timing and method of harvest is important to longevity. Postharvest conditioning adds further to vase life, ensuring that each stem gets the particular care it needs to give its best. If you have been discouraged by your lack of success at making bouquets, knowing these few tricks may turn things around for you, and you will find making flower arrangements is a lot more fun when you know that the flowers are going to last as best they can.

## Timing the harvest

Morning, and the earlier the better, is the best time to pick flowers. The plants have had all night to rest from the work of photosynthesis (food making) that occupies them all day. The air is more humid, and near dawn the dew comes, surrounding them in airborne water, which in some cases is absorbed through the foliage and occasionally even by the flower petals directly. The roots have spent the night drawing water up into the stem's vascular system, so that by sunrise the leaves, flowers, and


Know your tools! An implement of efficiency and danger held in a confidant hand at Lucky Farms.


Have your tools at the ready. Stopping in midarrangement may be difficult-flowers shift and you may lose your momentum. At Kinzy Faire.
fruit are as fully hydrated as it is possible for them to be. Without the stimulation of sunshine, plant breathing, known as transpiration, slows or in some cases stops.

Once the sun comes up and the sky grows light, a plant's metabolism kicks into high gear. This is even true of plants growing in the shade. The chlorophyll cells get to work taking the stored water and micronutrients supplied by the roots, mixing these with light, and creating the energy to accomplish the things the plant needs to do (photosynthesis). This chemical process creates waste products-oxygen among them-that the plant exhales as the day progresses, just as we breathe out carbon dioxide as we go about the biological process of living. Plants, like animals, give off moisture, and just as we sweat on a hot day, plants give off water vapor in the heat. The sun dries the air, and during the day plants can only take water up through the roots. The night-stored water in the foliage is evaporating, and unlike us, the plant cannot move to the shade and immerse itself in the wading pool. With humans who get sunstroke, not enough water is taken in to offset the water loss due to evaporation and respiration. With plants the tendency is to droop their flowers and leaves in the heat of the day, even if there is ample soil moisture. The plant cannot drink water from the soil fast enough to replace what it is losing.

Once the evening comes, the light softens and loses its relentless glare, slanting into the garden at long angles. The balance shifts, and the roots are again absorbing moisture from the soil faster than the leaves are expelling it. Flowers seem to perk up. Foliage again looks crisp and plump, in part because the plant has spent the day making food (carbohydrates) for itself and now can use it.

Watching a day in the life of a plant during its active growing season lets us know exactly when the right moment for harvest is. The absolutely best time for harvesting any flowers or foliage is early morning, just before and for an hour or two after sunup. If the day is overcast, this window of opportunity is wider.

Evening is the second best time to pick flowers. The light is less direct, the air is starting to cool, and plants are regaining their water and carbohydrate balance. This recovery can take time, but once the light is off the foliage, transpiration slows.

In summation, morning is-hands down-the optimum time to cut flowers.
In mild-climate coastal areas, where marine air remains moist and creates cloud cover, flowers can be harvested nearly all day. In dry interior valleys, the morning and evening premium picking times may sometimes be quite short if a day is going to be hotter than $86^{\circ} \mathrm{F}$. The workday can start well before sunrise on flower farms in hot climates, making floodlights and flashlights important harvesting tools.

## Speaking of tools

Cutting implements for both harvesting flowers and making floral arrangements must be sharp.

The vascular system of plants, the xylem and phloem in the stems, is a fragile bundle of tubular cells, easily mashed and plugged. Imagine you are slurping a strawberry milkshake and a berry fragment gets stuck in the straw-you can blow it out to clear the passageway, but flowers do not have this ability to use reverse suction to blow out debris. Once a flower stem is plugged, it stays that way, and leaves and petals served by that blocked section of xylem (remember: xylem cells pull up and phloem cells flow down) quickly use the water left above the clog and then start to die. The only way to remove the obstruction is to recut the stem, removing the old cut end and creating a new one. Using sharp tools-knives and clippers-means that each cut will be as clean as possible.

Scissors are rarely strong enough, or sharp enough, to make them good flower cutters. Save them for use on ribbon and fabric. Also avoid pruning clippers of the anvil type, those that have one mobile sharp blade that squeezes woody stems against a broad flat immobile blade, like using a cleaver on a cutting board.

The best clippers (also called secateurs) have pass-by blades, both equally sharp, that slide past each other as they cut through a stem. I use these for harvesting. There are now many brands on the market that have slender, straight needle-nosed blades, which make it easy to work in multibranched plants where you do not want to harvest


Flowers must have a long drink of water in a cool place out of the sun before being arranged. Lucky Farms booth, Portland Farmers Market.
all of the stems, and to edit excess foliage in a bouquet without disarranging the whole display. Make sure that the mechanism that locks the blades shut when they are not in use does not engage while you are actively cutting, which can pinch your hands and slow down your rhythm if you are in a hurry or harvesting a lot of flowers. There are heavier pass-by pruners available with curved blades, great for cutting bulkier woody branches, and some of these have replaceable blades, so that once you have sharpened them so many times they no longer hold an edge, you can replace the blades rather than buy a whole new set of pruners.

Straight or curve-bladed grafting knives are the sharpest option and retain their edge well, making them ideal for harvesting soft stems and for assuring a sharp cut for roses and other flowers extremely sensitive to having their xylem blocked. However, knives are not suited for thick material. You can break a blade by biting off more than your knife can chew. Using a sharp knife efficiently to create floral arrangements is a skill not quickly learned. Holding the knife so that you do not nick yourself on the backstroke and can insert flowers into a basket or vase while not breaking the flowers
already placed in the arrangement requires hours of watching a proficient practitioner at work. When you are ready to try using a knife, take a class from a floral professional or seek a mentor. Give yourself plenty of time to develop a sense of how the knife should feel in your hand and an awareness of where your thumb is in relation to the blade. It takes a while to develop your "hand" with flowers, the special dexterity, combining efficiency with gentleness, that comes to practiced florists.

If you are nearing the deadline for constructing your daughter's wedding flowers and you think a knife will make you faster but you haven't used one before, put the knife down. Step away from the knife.

It may go without saying, but I will say it anyway: serrated knives have no place in the floral tool kit. Their cuts always create unwanted debris.

For home floral design, you can get by handsomely with a sturdy pair of pruners with replaceable curved pass-by blades, and a smaller, lighter pair of clippers with straight slender blades. If you plan to use a lot of shrubby material, a pair of longhandled loppers is useful for harvesting; then use your pruners for the fine work, and a knife for shaving the bark away from the cut end (much more on this anon).

Never let me catch you cutting wire with your clippers or knife. Nothing dulls and nicks a blade faster. Wire cutters are cheap. Buy two.

Cleanliness is next to freshness when it comes to your tools. Some of the plants you harvest have milky and/or poisonous sap, and it is important to at least rinse your harvesting tools with water every few minutes, keeping hinges and blades from becoming gummy. Using a mild bleach solution is fine for this purpose, nine parts water to one part chlorine bleach, but remember to use cool water. Chlorine gas evaporates rapidly from hot water (which is why heated public pools are so stinky), and thus the cleansing properties of the bleach are quickly lost. The chlorine stays dissolved in cold water for a much longer time.

## Some fine points of harvesting

The plant directory in the latter half of this book revisits the specific harvesting methods I mention here for each flower, foliage, and fruit variety to which a particular technique is appropriate. Also, large important groups of cut flowers, such as roses and tulips, narcissus and peonies, are written about in extensive detail in chapter 4, and their harvesting specifics are given there.

As you go out into your garden to harvest flowers, it is best to take a bucket of fresh water with you. Although not all garden flowers are benefited by floral preservative, most are, and it can be added to the water so that the flowers will have this in their system from the instant they are picked. You may plan to collect the types of flowers and foliage you will want all at once, then take the lot to the compost bin to remove
excess stem length and foliage that would be below the water during conditioning. That's fine to do; I do it too, but I still start out with preservative water for the trip from the flower bed to the debris pile.

There are a few flowers, such as Peruvian lilies (genus Alstroemeria), that must have their stems yanked from the ground rather than cut. This little act of violence lets the plant's crown know that a flowering stem has been removed and stimulates the production of a replacement. Peruvian lilies are not at all sensitive to having their stems cut a few inches above the ground, and they do not get the message that the flower stem is gone and the opportunity for seed formation along with it. If you reach your hand down the stem to just above the ground and give a sharp upward tug, the flower stalk comes away from the buried crown, revealing about 6 to 8 inches of whiter stem. Cut this blanched section off of the stalk-up to where the stem is bright green-before putting the stem in water. At the crown, the wound of the removed stem heals, compelling the plant to produce a new stalk of flowers. Admittedly, as plants go, alstroemeria are not too smart. If you harvest your plants by cutting, they will not rebloom after their first burst of color in May and June. If you pull their stems instead, you will have continued flowers all summer.

When I am cleaning the flowers after harvesting, I dump out the original water in the bucket and refill it again to nearly its rim with fresh water and preservative. If you have picked flowers with buds just starting to show color and you want to open them quickly, now is the time to use warm water rather than cool water. Warm water is taken up by the stems more rapidly. However, hot water $\left(100^{\circ} \mathrm{F}+\right)$ should only be used on a limited number of specific flowers (more on this in the plant directory).

At this point in the harvest I handle each stem I have picked again, removing spent flowers from multibranched stems (unless the seedpod is intriguing), stripping away the foliage that would be underwater, taking the thorns off roses (these underwater wounds will absorb a bit of water), and giving each stem a fresh sharp cut at an angle (creating a pointed stem end).

There are certain types of flowers, such as lilacs, zinnias, and hydrangeas, that require you to remove all of their stem foliage, including those leaves above the water. In these cases, the leaves draw the water away from the stem as it travels upward, and insufficient water reaches the flower heads. Removing the leaves from these types of plants assures that the water is not diverted from its primary mission. This foliage removal should be done directly after harvesting. In the case of lilacs, if you want to use their foliage in a bouquet with their flowers, harvest branches from the plant that are not in flower and use these as your foliage. In other cases, such as Peruvian lilies, the flowers last much, much longer than the foliage, so the leaves can be totally removed at harvest time, except for those leaflets within the cluster of florets, which last better than the stem leaves do.

If the flowers and foliage you are using do not require further treatment to prepare them for arranging, take the bucket to a cool dark place where they can sit for several hours, or overnight, to drink up the preservative solution and recover from the

## ANGLED CUTS FOR FLOWER LONGEVITY

The stems of all plant material (flowers, foliage, and fruit) that will be used fresh in vases or floral foam should be cut at an angle. This bias cut exposes more of the stem's vascular system to water than a flat or blunt cut does. Also, should a flat-cut stem rest on the flat bottom of a vase, it cannot take up water. It is simply sucking on the bottom of the vase. If the same stem is cut at an angle, only the point rests on the bottom of the container, and the remainder of the cut surface is able to draw water.

Cutting stems at an angle is the single most important factor in flower longevity. Each subsequent cut you make to the stem should also be at an angle. If you are in a hurry harvesting flowers, you may cut them any old way to get the job done, but as you prepare the stems for conditioning, give each stem a fresh angled cut right as it is going into water, using sharp clippers or a knife.

Dahlias require special treatment, called conditioning, to get the most out of them as cut flowers. Pike Street Market, Seattle, Washington.

trauma of being harvested. If you do not have a cooler (and most of us home flowergrowers do not), at least use a basement, garage, or potting shed where the bucket of plant material will be out of the drying, stimulating sunshine. At this point, you want the flowers to concentrate, to the best of their feeble abilities, on figuring out how to drink water with a stem instead of with roots.

## Preparing woody stems

Plants with woody stems, which includes most shrubs and trees, whether evergreen or deciduous, have three basic layers to the structure of their branches and trunks. A layer of heavy protective bark surrounds the exterior, which can be thick and textured. Sometimes the bark peels as the plant ages and grows, revealing a shiny and smooth new layer of bark beneath the old papery surface. This is true for the paperbark maple (Acer griseum). In the case of shrubby Cornus (dogwood) species, such as C. sericea 'Flaviramea' and C. alba, the thin smooth bark takes on rich winter color-yellow and red respectively-visible once the leaves have fallen. The cells of the bark of all woody plants are, more or less, dead.

The innermost layer is what we think of as the wood, dead cells that migrate into the middle of the branch or trunk, providing a firm-often nearly permanent-support for the weight of the upper growth. But it is the middle layer, the living cambium, that concerns us most as flower arrangers. If you scratch the bark of a stem of Cornus alba you will reveal the green cells of the cambium. In fact, in most thin-barked woody plants the cambium layer is bright green. It is in this strata of a woody plant that the vascular system exists, transporting water to the twigs, leaves, or needles.

For many years the prevailing wisdom was to smash the cut ends of woody stems with a hammer before their long conditioning bath, thus exposing a maximum amount of cambium to the water. The only problem with this practice is that it also introduces a vast amount of debris into the water, effectively clogging the very cells we want to uncover, and giving waterborne bacterial and fungal diseases a great source of fuel. That is a pretty substantial problem.

There are better, cleaner ways to expose the living cells of woody stems. The first is to not only give the stem an angled cut but also then split the stem vertically (see illustration) for 2 to 3 inches above the initial cut. Then plunge the cut end immediately into a preservative solution to condition the branch.

Another successful mode of exposing cambium-and the best method for conditioning woody stems that will ultimately go into floral foam-is to make the usual angled cut, then lightly shave away the bark for an inch or two above but adjacent to the initial cut, unveiling cambium in a band of green all the way around the stem (see illustration). Do not think of this as whittling-the point is to expose the cambium, not the interior wood. Once the bark is shaved away, the branch should go instantly into a waiting bucket of water. Bark shavings go onto the work surface or onto the floor to be swept up later, but not into the water-filled container for the stems.


For woody plants, split the stems vertically after making the initial angled cut.


Shaving away a bit of bark adjacent to the angled cut exposes more cambium to the water for woody plants. This also allows for clean insertion when using floral foam. At the Rodal garden.

Never let open cambium lie around and dry out, as it will try to seal itself to preserve what water has already been taken up by the stem while the branch was still attached to its shrub. Prepared stems that have become dry will have to be recut and reshaved. Do not think that you can start on a bunch of pine boughs, lay aside each stem until all have been prepared, and then immerse the branches into the conditioning solution all at once-no, each branch goes into water as soon as you have opened the bark. If the phone rings while you are preparing a woody stem, well, that's what we have answering machines for.

## Rinsing away problems

There are ample examples of cut flowers that have milky and/or poisonous sap. All Euphorbia species have white sap laced with toxic compounds. Anyone who has ever picked a daffodil (and I pity the poor soul who has not) knows that the clear acrid sap drips out of the wound for quite a little time as you gather more flowers. The milky bellflower, Campanula lactiflora, gets both its common and botanical names from its white sap.

In the case of all euphorbias (the spurges) and narcissus (the daffodil and jonquil genus), not only is the sap toxic to us, it will also quickly diminish the vase life of other flowers arranged with them. This flowing sap is also poisonous to its own flowers; it is the job of the phloem to send this waste and nutrient-laden substance back down the stem to the roots and bulbs. The xylem tubes of daffodils are not used to taking up this substance, which is why when daffodils are placed in a vase by themselves directly after harvest and the water is not changed, they die rapidly. Wouldn't you?

Also, flowing sap, whether milky or not, will provide bacteria and fungal organisms in the water with a feast. If the sap does not congeal and clog stems, then the amplified bacterial growth will block them for sure.

Formerly, the traditional wisdom was to heat-seal all flowers with milky sap by either holding the stems over a flame until the cut ends blackened and stopped ooz-ing-twenty to thirty seconds-or plunging the bottom few inches of the stems into boiling water for a similar period of time. But both methods not only seal the phloem from releasing more sap but also seal the xylem so that the flower must exist with the water captured in its stem at the time it is cauterized (sealed). Even if the xylem could

## BEAUTIFUL IDIOTS

Certain flowers never do quite reckon how to drink water once they have been cut. Both dahlias and hellebores (lenten roses) do not take up water once they are harvested without being subjected to a bit of trauma, but the following floral torture can only be performed once per stem, and only within an hour of harvest.

In both cases, heat a pan of water with floral preservative dissolved in it to $160^{\circ}$. Recut the flower stem and immediately dip the new end into the hot water, slanting the flowers away from any steamy vapors. Hold it there for ten to twenty seconds, then remove the stem and place it in a deep bucket of cool water. This drastic action causes a surge of heated water, with benefit of preservative, to pulse up the stem, packing it with moisture and expelling any air bubbles trapped in the stem when it was initially cut from the plant.

The stem will not drink any more, even if you recut it shorter and try this procedure again, but at least now you have fully hydrated the stem. This procedure extends the longevity of dahlias and hellebores by three to five days, giving them a total vase life of seven days and possibly longer if they can be chilled at night.

Just a note about hellebores (we speak here of Helleborus xhybridus, the lenten rose): it may be of some benefit to dunk their flowers in warm-but not hotwater for ten minutes or so after they are harvested, leaving them head first in a bowl or bucket with their cut stems waving in the air. They will absorb some water through their sepals, and then you can upend them and subject the cut ends to the earlier-described useful but harsh treatment.
absorb more water, this would be polluted by the decaying dead cells from the cooked phloem.

This was truly a no-win situation until the word got out about rinsing. This is a marvelous way to increase vase life for daffodils and all milky-sap cut flowers. Before harvesting these types of flowers, half-fill two buckets of water, without preservative. As you pick them, place all of the freshly cut flowers into one of the buckets. In the case of narcissus, when you are all done, pick up the entire bunch of flowers and immediately place them into the second bucket. Let them sit for fifteen to twenty minutes. While they are sitting with their nasty sap seeping out, clean the first bucket and half fill it with more water. At the end of this waiting period, lift the bunch of flowers out of their bucket and examine the cut ends. If they are still oozing-a thick drop of sap forms, if not a running rivulet-you can place the entire bunch into the bucket of fresh water you have prepared, without recutting the stems. This should be a quick process: out of one bucket, quickly look at the cut ends, and, if necessary, put them into the fresh bucket immediately. With narcissus, the sap, although clear,
is thicker and more viscous than water, with a consistency more like mucus-I know, yuck, but there it is. Pulling a bunch out of water will quickly reveal whether the sap is still flowing out.

Repeat the rinsing process-fresh water, wait, examine-until the stems lifted out of the water stop losing sap. Usually it only takes two changes of water to stanch the flow, and then the bunch of flowers can be placed in water with floral preservative added, and conditioning can continue. And at this point, daffodils can be stored or arranged with any other type of flower without poisoning them, including tulips.

Also, once the rinsing process is complete, the stems of either milky-sap flowers or narcissus can be recut without having to go through the whole rinse cycle again, assuming you were thorough and patient the first time. The flowers are now drinking through their xylem, and nothing bad remains to drip out of the phloem.

With the rinsing alternative available, it is now generally accepted as a bad idea to heat-treat the stems of all but just a very few flowers, either by boiling water or flame. You do more harm than good.

## The value of floral preservative

A good floral preservative should do three things: feed the flowers, help them take up water efficiently, and keep the water free of bacterial and fungal debris. Whether you make your own homemade preservative or buy a proprietary brand, its chemical composition addresses these three functions.

Each variety of flower and foliage you cut will react to the process of being arranged slightly differently, and most of the differences are unmeasurable. There are a few types of flowers that will not open their buds once they are harvested, but the majority will, with roses being an obvious example, as well as iris, peonies, and lilies. Merely maintaining clean water will keep them alive, but without some type of carbohydrate added, the opening buds will not reach their full potential-they may be stunted and small, and their color will not dazzle. Simple sugar (sucrose) is the substance most often used in preservative to assure that each picked stem continues to develop normally for as long as possible. Sugar helps secondary buds reach their size potential-as opposed to the worst-case scenario of the buds being shed. Sugar also helps developing flowers attain something like the vivid color of the primary flower that matured with the benefit of being attached to its plant.

Sugar is also a key ingredient in getting immature flowers to open quickly. Perhaps you are planning a dinner party tomorrow night and you have a handsome stand of Asiatic lilies in your cutting garden that are just not quite ready to open. Once they have been harvested and the lower foliage removed, to get them open as soon as possible recut and place them immediately in a bucket of deep warm water (think bath water, but not hot tub) to which you have added a tablespoon of sugar (not honey and not brown sugar, just simple granulated sucrose-table sugar) per quart of water. Do not add any other preservative elements at this time. Once all the stems you want to


Normally long-lasting tropicals do not respond well to floral preservative and are better off without it. At the Miller home.
hustle along are in the bucket, enclose the whole thing in a black plastic sack, capturing a warm humidity cloud around the flowers. After four to six hours, pull the bag away and see if the buds are expanding. If the water has cooled, replenish it with more warm sugar solution, and reseal for overnight storage in the bag if necessary. By the next morning, the buds should be considerably enlarged, if not cracking open. Once the flowers look well on their way to opening, shift them to cool water with the floral preservative you usually use. It is the push of dissolved sugar, made more chemically active by the warmth of the water, that inspires reluctant buds to open.

The downside to this scheme is that in the long run, it reduces the vase life of the stems thus treated (although the opposite is true for gladioli, but there is an exception to every rule). A lily or rose, for instance, when forced to open so rapidly, will lose three or four days of longevity. However, for special occasions, when the flowers need to be at their prime for an evening or a day, this sugar therapy gets them to the church on time, and looking perfect.

Bacteria and fungal organisms love nothing so much as a sugar-water buffet. This is why in regular situations where you are not frantic to get the flowers open for a deadline, sugar is always paired with chlorine bleach in preservative recipes. We know that these organisms block the uptake of water in flower stems and that these organisms are killed by bleach. Bacteria also colonize the foliage and bark debris left in the water from sloppy conditioning practices, and bleach will suppress this microbial activity.

Chlorine bleach is not the only chemical option for keeping vase water clean. There is a healthy degree of truth in the old wives' suggestion to put an aspirin tablet into a vase of water. Aspirin is salicylic acid, which is derived from plants of the genus Salix, the willows. This is why floral arrangements may seem to last longer when stems of willow are components of a bouquet. The salicylic acid in the bark sloughs into the water, giving all of the flowers the benefit of a natural preservative. Do be advised, though, that aspirin tablets contain inert ingredients that add to the cloudiness of the water over time and may negate the benefit of the acid. If you use a snarl of curly willow (Salix babylonica var. pekinensis 'Tortuosa') with its foliage removed to help hold flowers in place in a vase, you honestly do not need to use any other type of preservative in the water.

Normally vase arrangements should have their water completely changed (even if you are using preservative) every two or three days. With large complex arrangements, this is simply not practical, as it would mean deconstructing the entire bouquet and then hoping you can get it back exactly as it was. But in big arrangements, even if you have replenished the water with fresh preservative to keep the water level as high as possible, a layer of sludge may settle to the bottom of the vase in a most unsightly way. In a vase holding several quarts of water (or more), two or three tablespoons of bleach will essentially dye the bottom scum, making it clear. It will still be there, but
it will be further broken down by the addition of pure bleach, which also settles to the bottom of the water.

Studies at various universities around the United States with floriculture programs have proven that the addition of citric acid to the water of freshly cut flowers helps them take up water more quickly. This is especially valuable to know when you have had to pick flowers at a less-than-optimum time and they look wilty, or if you have purchased flowers that were shipped out of water and that need to be revitalized.

The acid helps dissolve detrimental air bubbles in the water and lowers the pH so that water is transported easily up the xylem's tubular cells. Even though many flowers might prefer a neutral to slightly sweet soil, their interiors are rather acidic, and adding an organic plant acid to the water makes its absorption less alien to drinking flowers and foliage. The faster the water reaches the flowers, the better they will look and the longer they will last. When citric acid is partnered with warm water to restore ultra-stressed flowers, the rapid rehydration can be visible!

Crystallized citric acid-rather than, say, lemon juice-should be used in floral preservatives. Although citric acid is what makes citrus fruits tart and they are a great natural source for the substance, adding fresh-squeezed juice to water in vases will contribute debris and pulp, which is never a good idea. Floral preservative additives must always be in a form that will dissolve efficiently in water and keep it clear.

## Home remedies

Following is a simple recipe for homemade floral preservative. Do not add more bleach than is called for, and make the recipe to its full volume, storing excess solution in a sealed and labeled container in the refrigerator for up to ten days, using it as needed to replenish your vase or to maintain the water level in a container using floral foam.

## homemade floral preservative

## 112 -ounce can of nondiet lemon-lime clear soda

3 12-ounce cans of water (use the soda can as a measure)
1 tablespoon of chlorine bleach (not more)
Mix all together and stir until the soda bubbles have dispersed.

This mixture closely approximates the solution you create using a balanced allpurpose brand-name floral preservative such as Floralife or Chrysal. Do not add more bleach than is called for, as it is easy to burn the vascular tissues of the flower stems
by using too much. In fact, the outer sheath of soft stems will appear cooked if the chlorine concentration is too high. Citric acid also has a slight bactericide effect, so adding more bleach is absolutely not necessary. And do not use citrus sodas such as Squirt that are cloudy and contain fruit pulp. If you only need to fill a small vase, make the entire batch anyway and store the excess preservative in a clearly labeled container in a cooler or refrigerator, using it to maintain the water level in the vase and to completely change the vase solution as necessary.

Bulb flowers-that is, flowers like daffodils and tulips that are generated by underground bulbs-do not respond well to sugar in their water. Specially blended commercial bulb flower preservatives have low concentrations of sugar. Although a pulse of sugar will help reluctant lily buds to open, excess sugar will eventually cause lily foliage to yellow, so lilies should be moved to a low- or no-sugar preservative once the flowers have reached the desired degree of openness.

What, then, does one do about creating mixed arrangements?
Okay, so not all flowers react to preservatives in the same way. Some like sugar, some do not. There are some groups of flowers, such as the summer bellflowers (genus Campanula), that are highly sensitive to bleach and for which it is better to stick with fresh water and not use any preservative at all. For long-lasting tropicals-like bird-of-paradise (Stelitzia reginae), Tahitian ginger (Alpinia purpurata), most orchids, and flamingo flower (Anthurium andraeanum)—preservative is not used because it does not add significantly to the longevity of flowers already capable of lasting more than three weeks.

Commercial sources of preservative do offer specialty formulas-to use with bulbs, to use at harvest, to open buds, as pretreatment before shipping-and these may be quite helpful on huge flower farms storing thousands of flower stems a day. For amateur florists and small producers, when in doubt use fresh clean water, changing it as often as needed and recutting stems at an angle daily to remove blockages at the site of the last cut. After years of reading science experiment reports from my students, it is clear to me that maintaining clean water and high water levels in containers (be they vases or liners filled with foam) are the real keys to flower arrangement longevity.

Therefore, if you generally do use preservative but are going to create an arrangement using flowers that may be sensitive to some component or other, rather than using a weak solution of preservative, use none. Properly condition all of the flowers you want to use according to their needs, then simply plan to keep their plain water fresh once the bouquet is created.

## Evil ethylene

Ethylene is a gas by-product of the ripening and decay of organic compounds found in living things. All types of fruit, and most vegetables, produce great volumes of
ethylene, which acts like a hormone to trigger maturation and death. The higher the ethylene volume in an environment, the more quickly decay occurs. Flowers have various sensitivities to ethylene, but suffice it to say, all flowers last longer if they can be kept away from high concentrations of ethylene.

Ethylene exposure will cause flower buds to drop prematurely or not open, and will cause open flowers to lose their petals or become limp. Ethylene and flowers do not mix.

Do not store flowers in coolers and refrigerators that also contain fruit and other types of food, even if the food is in closed containers. A refrigerator originally used for food but now being used for flowers should be thoroughly cleaned and aired before the flowers are stored in it. Storing staff lunches or fruit for gift baskets in the floral cooler is a bad habit for a floral shop to get in to. Flowers and fruit displayed together in arrangements should be placed where there is good air circulation, so the ethylene concentration cannot build up around the bouquet. Lovely as this combination is, using fruit and flowers together diminishes the overall life expectancy of an arrangement.

Avoid buying flowers showing physical injury to the foliage, or plan to remove this foliage, as even decaying leaves on the flower stem will produce ethylene and reduce flower longevity. Keep storage buckets and vases clean, so bacteria and fungal organisms, which also create ethylene, are kept to a minimum. Cigarette smoke contains ethyl-ene-another reason smoking around flowers is just plain wrong.

## Summary tips

Avoid using scissors or dull clippers to cut flower stems; scissors pinch the stem rather than giving a clean, sharp cut.

Recut all stems at an angle with a sharp knife after harvest; angling the cut exposes a greater area of the stem for water uptake.

Immerse stems in deep water as soon as the angled cut is made; a newly cut stem begins to dry over immediately, reducing tube (xylem) openings for water uptake.

Allow flowers to draw water in a dark, cool place (certainly away from direct sun) prior to arranging, for several hours or overnight.

Remove damaged and excessive foliage, and remove any foliage that will be underwater once the flowers are arranged. A few flowers, such as lilacs and sunflowers, will last much longer if all of their foliage is removed.

When harvesting, take a container of water with you and plunge freshly cut flowers into it immediately. Recut all stems at an angle and edit foliage when completely finished harvesting.


Well-conditioned flowers at the Hilo, Hawaii, Farmers Market offer shoppers a world of possibilities.

Whenever possible, harvest flowers in the early morning. The next best time to cut is in the early evening, just before and after sundown. Avoid midday harvesting.

Rinse the fresh angled cut of stems that exude milky sap when harvested, to prevent fouling the water.

Split woody stems vertically with a clipper for 2 to 3 inches above the cut during conditioning. When arranging this material in floral foam (Oasis), scrape off the outer bark for 1 to 2 inches above the cut, thus exposing the living cambium layer to fresh water. Hammering stems creates too much debris in the water and should be avoided.

If you try using a new flower with preservative and the flower dies quickly, try it again in plain clean water. Some flowers, such as most members of the Campanula genus, will have a much longer cut life when displayed in vase arrangements without preservative.

During conditioning and after arranging the flowers, change the water as often as necessary and use a preservative where appropriate. When you notice the water is fouled, change it, recutting all stems before replacing them in the freshened water.

Revitalize some flowers that have been out of water and become limp (flaccid) by completely immersing them horizontally in warm water after giving them a fresh angled cut. This works for tulips and roses, among others.


## Classic Flowers

Some tulips last so long you could dust them off, and others you can't trust overnight.
-Constance Spry, Flower Decoration

IN THIS CHAPTER we will consider the special charms and foibles of some of the larger groups and genera of commonly grown cut flowers. These are plants that have been used in floral design for many years. Often the old wives' tales told of them go back centuries, and the old wives are long gone. In most cases modern floriculture has taught us that some of the conditioning myths that have been passed down are simply plant torture and nothing more.

Lilies, daffodils, tulips, roses, peonies, hydrangeas, and flowers native to tropical places are all experiencing a renaissance of sorts as we enjoy this expanded age of gardening. Horticulturists are trying to turn tropical flowers into domesticated garden plants in temperate climates and are, conversely, trying to breed peonies that do not require a period of cold dormancy for warmer climates. One never knows what will happen next around here. Regardless, there is too much to be said about any of these classic plants to confine their mention solely to the plant directory, although you will find them listed there as well.

## True lilies: It's all in their bulbs

True lilies are distinct plants with characteristics demonstrably different from other flowers grown from bulbs, such as tulips, narcissus (daffodils and jonquils), and the ornamental onions (Allium). Lilies do not have a protective papery sheath holding and protecting the interior layers (in tulips this is called the tunic). Lily bulbs have overlapping scales exposed to invasion by fine clay particles in unamended soil, particles that can hold water, rotting the bulb. This explains why true lilies love quickdraining sandy loam. They should be planted in beds where gardeners will not tread over them while they are dormant, which would work heavy clay down into the deep soil layer where the bulbs are.

True lilies form roots along the buried section of stem that emerges from the bulb and grows up through the soil with the flower buds atop-known as stem roots. There are also roots at the base of the bulb, gleaning water from the earth, and these lowest roots also adjust the depth of the bulb by contracting to pull the bulb lower if the clumsy gardener has not placed the bulb to its liking. (Don't you wish all plants were self-correcting?) The stem roots, growing between the bulb and the soil sur-
face, absorb nutrients and brace the heavy flower stem. Thus most lilies have two sets of roots that perform separate functions, with the deepest roots providing water from down where moisture levels are relatively consistent, and the upper stem roots spreading laterally to provide stability. Pretty smart.

But the real brains of the operation is the bulb's basal plate. This is the woody disk at the base of a dormant bulb that generates the contractile roots and holds all of the scales in their upright, overlapping configuration, like an artichoke's leaves. The flower stem pushes its way up through the scales directly from the basal plate. Also, the basal plate houses the plant's unique DNA. Whether the lily you grow is a species or a hybrid, the basal plate contains the bulb's identity, passing it along to the scales, to the baby bulbs (bulblets) that form from the plate, to bulblets that form at the junction of the stem roots and the flower stem, and to the tiny bulbs (called bulbils) that form above ground at the leaf axils in some species. The basal plate also provides the genetic information in the pollen on the anthers and the eggs (ovules) in the ovary. In short, the basal plate tells every part of the lily how to look and what to do.

Thus, when buying lilies, you should know that getting big bulbs is only part of the successful equation. Always examine the basal plate of the bulb you are selecting. In dormant bulbs it should be dry and woody. If it is spongy or has brown pithy areas, it is afflicted by basal rot (usually a botrytis fungus), and the whole bulb should be discarded. The contractile roots that may have been left on the bulb should also be firm and dry. Darkened wet roots on newly purchased bulbs should be pulled off; they are starting to decay and that decay can spread.

## Nearly a million ways to propagate lilies (or so it seems)

Lilies are adept at reproducing themselves through asexual propagation (no pollination), so you can get the same plant over and over by essentially cloning it rather than planting seed. Seedlings may reveal unflattering latent or recessive traits in self-pollinated hybrid plants and may produce flowers vastly different from their cross-pollinated parents. (This is a form of gambling to which some folks are addicted.) Instead, try the following methods of propagation.

Scales: Each scale of a lily bulb is mainly a carbohydrate storage unit, used to energize the basal plate during times of stress. There are strong concentrations of DNA at the base of each scale, and when scales are removed and planted, they will form bulbs that will flower in two to four years and be identical to the parent bulb. A few scales (three or four) can be removed from the outside of healthy newly purchased bulbs and planted into 4 -inch pots on their own, without hurting the mature bulb's performance when it is planted in the ground.

Bulblets: When you see little leaves emerging from the soil around your lilies, it means identical twins to your original bulbs have begun forming underground. They may arise from the underground stem and will be identical to the parent.

Dig the original mature bulb when it is dormant and the ground is still rather dry, and these little bulblets can be harvested and planted; then the original bulb can go back in its hole.

Bulbils: In several North American species and their nearest hybrids, tiny bulbs can easily be seen forming where the leaves meet the stem (the leaf axil). Late in the summer, these bulbils will form a little leaf and will eventually drop from the plant to start a colony, unless you get there first. Remove the bulbils and pot them into 4 -inch pots of mixed sand and either peat moss or coco-fiber. These new bulbils are small at first, and you can put three to four in a pot. They will bloom in two to four years and look just like a chip off the old block.

## WARTS AND TEPALS: FLOWER TERMS AND FUN FACTS

Lily flowers do not have a green outer whorl encasing their petals like roses do. This missing structure is the calyx. Because there is no calyx, lily petals are called tepals instead of petals. We can thank (or curse) taxonomists for this.

The spots on lily flowers are called warts. If you touch them, you can feel that these are raised bundles of cells with concentrated pigment. 'Casa Blanca' lilies have self-colored warts (white on white) and so are said to be unspotted. Occasionally an Asiatic hybrid will form warts at the tepal edge, producing a dark outline much desired by breeders.

Because they are often pollinated by the wind, lilies have what are called versatile anthers to carry their pollen. This means that the anther is tenuously attached to the flower, the better able to wave in the breeze. There is one anther for every tepal of a lily flower. Remember that lily pollen is extremely staining to skin and fabric, and the anthers are normally removed when the flowers are used for cutting. Whether you leave the pollen on your garden lilies is entirely up to you. If they bloom near a path, you may want to save yourself some dry-cleaning bills by removing the anthers. Try not to damage the stalk (called the filament) that the anther is hanging onto, as this takes away from the grace of the flower.

Did you know that the Pacific Northwest has a higher concentration of native lily species than anywhere else on earth? Do not collect lily bulbs or seeds from the wild, though, as many are endangered due to human greed and loss of habitat.


In Cheryl Kamera's cutting garden on Whidbey Island, Washington, Asiatic lilies have pride of place.

The relatively new Oriental hybrid Lilium 'Barbaresco' has become a popular cultivar for cutting. Pike Street Market.

Lily flowers come in five basic shapes, always with six tepals. (Double lilies are rare and expensive but certainly not unknown.)

1. Cup shaped, upward- or outward-facing
2. Open-bowl shaped, upward- or outward-facing
3. Turk's-cap shaped, flower faces downward- or outward-facing, tepals swept back toward the stem, curling back on themselves
4. Trumpet or funnel shaped, tepals long and flared open at the tips
5. Bell shaped, pendant and downward-facing



## Lily nomenclutter

First there were the species-those lilies that came as standard equipment on this planet, before gardeners started growing and hybridizing them-and then came the Asiatics (hybrids from species native to Asia); next came the Oriental hybrids (bred from lilies native to Japan and China). "But wait," you say, "aren't Japan and China in Asia?" Confusing. Now that the trumpet species and cultivars have been interbred with the Oriental and Asiatic groups, the distinctions are getting very blurry indeed.

Here are the characteristics in a nutshell:

## Asiatic hybrids

wide range of colors (orange, yellow, pink, red, white)
little or no fragrance
dark brown or black warts, if any

Asiapets (Asiatic hybrids $\times$ trumpets, formerly "LA hybrids")
sometimes fragrant
limited, pastel color range (thus far)
primarily grown for cut flowers

## Oriental hybrids

from lightly scented to drive-you-from-the-room fragrance
summer blooming (July to August, some into autumn)
limited color range (white, with pink or yellow wash on the nectary groove [central groove of each tepal], burgundy shades on white background, with warts usually of a contrasting color)
can grow very tall (range is 3 to 8 feet)

## Orienpets (Oriental hybrids $\times$ trumpets)

uniformly quite fragrant
wider range of colors (includes Oriental hybrid colors plus gold and copper)
flowers can be larger, shapes more varied
greater number of flower buds per stem
July to August flowering

## Trumpets

limited color range (white, yellow to dark gold, mauve)
long flowers with flared tips
uniformly fragrant (Coppertone tanning lotion!)
can be tall, often need staking even when shorter
late June to July flowering

## Lilies as cut flowers

When harvesting lilies, a gardener needs to decide whether the plant will be treated as an annual, in which case the whole length of the stem can be cut to the ground, or as an herbaceous perennial, when only half of the stem length should be taken. Lilies you expect to return to the garden year after year need the leaves on the stem to continue creating food for the bulb even after the flowers have been removed. If you do not care if the plant reblooms next year, you can be more savage.

Once the stem has been cut, only the leaves that would be underwater should be removed. The upper leaves remaining on the stem will provide nutrients for the unopened flower buds and will help them mature normally as the cut stem ages. In many flower shops you will see all of the leaves below the terminal flower buds removed, but this is a misguided practice. The remaining buds will not develop proper color; if they do open the flower will not approach the typical size; most likely the buds will drop.

Lilies, especially the Asiatic and Oriental hybrids, are quite long lasting; each open blossom should last at least four to five days, and new buds will be opening as the older flowers fade. The entire stem can last for more than two weeks, as long as the water is kept fresh. Removing the anthers increases longevity and prevents the pollen from staining the flowers or anything else.

Last, lily stems can be cut anytime after the lowest bud, which will be the first to open, is showing its true color. It is better to wait until this first bud is cracking, meaning the tepals are separating along their seams and tips. You can easily tear the tepals if you try to separate the seams by hand. If you need to force lilies open for a special event (white lilies of any type are notoriously slow to mature), place the stems in a solution containing two tablespoons of regular granulated table sugar (sucrose) per quart of warm water. Place the vase or bucket of lilies in a plastic bag so the lilies are completely covered and cinch with a twist-tie to create a warm humidity cloud around the stubborn lilies. Lilies can be kept in this sweetened solution overnight if necessary, but do not leave them in sugar water for more than twenty-four hours. If the buds are still not open, replace the sweetened water with plain warm water, changing it every few hours until the lilies finally open.

## Consider the narcissus

It fills me with a sense of wonder to think a flower so entrenched in our collective psyche could be available to us in such a wild abundance of variations, and from a fairly limited gene pool of just fifty species. Of course the color palette is limited: white, cream, all shades of yellow, orange, peach toward-but not quite at-true pink, with the occasional green or red eye. (My comment about peach and pink will ignite a blaze of protest from the daffodil cognoscenti. I am ready for it. Being a clematis
collector myself, I know what misstating and misunderstanding colors is all about, blue in clematis being a relative thing.)

Let us be clear: all daffodils and all jonquils are in the genus Narcissus.

## A system of narcissus classification

The American Daffodil Society has devised a system for classifying members of the genus Narcissus. For this purpose, the flower is divided into two regions, the perianth (petals) and the corona (cup). Together they are the corolla (entire flower). The perianth is described with a color code or codes identifying first the edge of the petal, then its middle, and last the interior of the petal next to the corona. The corona is described with a color code or codes identifying first the interior, or eye-zone, then the mid-zone, and last the outer rim.

Here are the color codes:
W-white or whitish G-green

| Y—yellow | P—pink |
| :--- | :--- |
| O—orange | R—red |

This format is followed in describing the classification of a narcissus:
1-division designation (1 to 13)
2-color code or codes of the perianth followed by a hyphen
3 -color code or codes describing the corona

For example, 'Angel's Whisper' is from division 5 and has a yellow perianth and a yellow corona, so its classification is written as $5-\mathrm{Y}-\mathrm{Y}$.

These are the divisions:

Division 1, Trumpet: One flower per stem, with corona as long as or longer than the perianth segments.

Division 2, Long Cup: One flower per stem, corona more than one-third but less than equal to the length of the perianth.

Division 3, Short Cup: One flower per stem, corona not more than one-third the length of the flower segments.

Division 4, Double: Flowers have a clustered cup, petals, or both. There can be one or more flowers per stem, and some double forms are very fragrant.

Division 5, Triandrus: Usually more than one flower per stem, head drooping, perianth segments often reflexed and of a silky texture.

Division 6, Cyclamineus: One flower per stem, perianth significantly reflexed (swept back) and corona straight and narrow.

Division 7, Jonquilla: Usually several flowers per stem, flowers distinctively fragrant, stem is round and the foliage reedlike.

Division 8, Tazetta: Usually three to twenty florets per stout stem, sweetly scented, with a short cup. Perianth segments very rounded and sometimes crinkled.

Division 9, Poeticus: Usually one flower per stem. Very white petals, short cup edged in red. Fragrant. Latest group to bloom. From Narcissus poeticus.

Division 10, Bulbocodium Hybrids: Small flowers resemble a hoop petticoat, perianth segments tiny, totally overshadowed by the large cup.

Division 11, Split Corona: The corona is split for at least half its length. This group is further divided into (A) Collar Daffodils, having corona segments opposite the perianth segments, with corona in two whorls of three, and (B) Papillon Daffodils, having corona segments alternate to the perianth segments, with corona in a single whorl of six.

Division 12, Other Cultivars: Daffodils not falling into any of the previous categories.

Division 13, Species: All species, wild selections, and reputedly wild hybrids.

## Daffodil longevity

How long any narcissus lasts in a vase is dependent on how it is conditioned. The rinsing process described in chapter 3 is essential to the success of this genus as cut flowers. All narcissus have a thick clear sap, the consistency of heavy syrup, that is sour and unpleasant to taste, and mildly toxic. Most wild animals do not eat either the bulbs or the flowers. Even slugs will not eat daffodils until the flowers have been open for several days or are heavily rained upon, when the alkaloids in the corolla have started to degrade.

The rinsing process washes away the running sap, prevents the stem's xylem from drinking this poisonous substance, and allows the cut stem to hydrate properly. Rinsing enables us to use narcissus in arrangements with any other type of flower, including those, like tulips, that would otherwise be sensitive to the toxic sap.

Narcissus should be picked when the flowers are still tight and fairly green, and their necks have turned to an outfacing position instead of pointing straight up. Then we can enjoy the entire maturation process, watching the color develop and the


Narcissus 'Waterperry' needs little enhancement and is shown to great effect in the home of Mike and Linda Darcy.
corolla unfurl. The overall vase life should be ten days if the flowers are purchased or harvested at the right stage and properly conditioned.

If you buy daffodils in full bloom, expect a much-diminished show.

## Selecting and growing narcissus

In climates of zone 9 or lower, where the ground stays cold throughout the short winter days, narcissus bulbs should be planted in the autumn. Their roots will grow in most soils-they are quite adaptable in this regard-and the top growth will want full sun when it emerges in early spring. The very earliest to bloom, such as 'Tête-à-tête' and 'February Silver' are tolerant of deciduous shade situations, where the sun reaches the ground in the winter and spring while they flower, before tree leaves block the sun. The large standard daffodils will also naturalize in this respect, but I find these flower better (bigger blooms) in a low-water, full-sun situation.

Narcissus bulbs have a dark brown papery covering and are fairly large, often having more than one "nose" or growing point. Each nose will produce at least one leafless flowering stem, which will emerge from the bulb at the same time the foliage is developing.

As with lilies, we need to remember that the generation of next year's flower is dependent on the maturation of this year's foliage, so do not harm the foliage as you are harvesting the flowers. If you want a few of the straplike leaves to enhance the cut flowers, just be sure to never take more than half of the foliage emerging from one bulb. If you leave a few flowers in your daffodil patch, deadhead the spent flowers but leave their stems-this too will produce carbohydrate for the bulb. Allow the flower stems and foliage to die back at their own pace. This phase of a daffodil's life cycle can look unsightly and is the reason daffodils are often grown in their own garden area or interplanted with other perennials that will hide old foliage with their new leaves. Twisting the declining foliage into a knot interrupts the flow of nutrients to the bulb, and we must overcome our urge to tidy the leaves in this way.

A close perusal of the classification system given earlier reveals a wealth of variation in bloom time, stem height, and flower shape. Here are a few of the narcissus I know to be either reliable, long lasting, pleasantly fragrant, or pretty, if not all of those things. Please refer to the system of classification to decipher the letters in parentheses.
'Actea': (Y-YYR) This is the earliest of the "pheasant's-eye" type to bloom, and although listed as a mid-to-late-season bloomer, it consistently blooms in my garden in early-to-mid season instead. Has a round profile and is quite showy. Poeticus division.
'Ambergate': (O-O) The orange-on-orange daffodils are still rather rare, and this long-cupped beauty plays to the back of the house (as the theater people say). Blooms late.
'Clare': (Y-Y) I bonded with this little bulb the first time I saw it in daffodil judge Jean E. Driver's garden. It is a jonquil type with wonderful poise. Even though it is only an inch wide, it has great presence-looks a person right in the face. Fragrant, too. Mid-to-late-season bloom.
'Eastertide': (Y-Y) A handsome, sturdy double flower, with the fractured yellow trumpet evenly infiltrated by equally bright petals. This is a large flower on a strong stem. Blooms in midseason; Double division.
'Fragrant Rose': (W-GPP) In addition to being delightfully perfumed-as the name suggests-this is also, to my eye, the narcissus closest to truly being pink-also as the name suggests. Blooms mid-to-late season. Long Cup division.
'Geranium': (W-O) Carries multiple flowers on each stem, making fragrant clusters of orange and white. Excellent in the ground or in containers for a grand spring show. Tazetta division; blooms midseason.
'Mary Copeland': (W-O) Double daffodils can look sloppy and just plain odd, but this tidy example from 1913 is a symmetrical burst of white petals interspersed with fractured remnants of its orange trumpet (can have flashes of gold). The whole is swathed in a cloud of lovely perfume. Blooms in midseason, from the Double division.
'Minnow': (W-Y) Although this is in the Tazetta division with some of the tender narcissus, 'Minnow' is tough, flowering at less than ten inches tall and thus perfect for nosegays. Blooms midseason.
'Misty Glen': (W-GWW) This pristine flower is in the Long Cup division. What is most impressive is how long each flower lasts, both cut and if left standing in the garden. Blooms mid-to-late season.
'Mrs. R. O. Backhouse': (W-P) This is the eldest (1921) of the allegedly pinktrumpeted daffodils, still widely grown because it is reliably long-lived with a fine flower. Blooms mid-to-late season; Long Cup division.
N. jonquilla 'Simplex': (Y-Y) This is a selection of Narcissus jonquilla with many of the fine characteristics of the best jonquils: it has a fruity fragrance, rushlike foliage, round flower stems (rather than oval with a raised ridge down each side), and the ability to flower well in warm-winter areas. Early-to-mid-season flowering, in the Jonquilla division, of course.
N. poeticus var. recurvus: (W-YRR) This is the latest-blooming daffodil of them all, capable of flowering to the end of May. If I could have only one narcissus, this would be it. This is the true "pheasant's eye." Lovely naturalized in meadows.
N. tazzetta var. orientalis: ( $\mathrm{Y}-\mathrm{Y}$ ) Also known as the Chinese sacred lily, this tender narcissus is easily forced for bloom at the Chinese New Year. Prettier fragrance
than others of the Paperwhite strain of the Tazetta division. Multiple flowers per stem.
'Professor Einstein': (W-R) Although this long-lived bulb is said to have a red cup, I find it to be more orange than red. It blooms in midseason, and the trumpet is somewhat flattened, giving this daffodil a distinctive appearance. Oddly, it is in the Long Cup division.
'Proxy': (W-YRR) Similar to N. poeticus var. recurvus, but with larger flowers. Blooms very late, in the Poeticus division.
'Thalia': (W-W) Some find the scent of this clean white flower (usually with at least two blossoms per stem) to be the best of the genus. It is too intense for me. The fascination of this exquisite flower, however, is not in dispute. Triandrus division; blooms mid-to-late season.
'Waterperry': (W-YPP) This jonquil-type flower (with multiple flowers per stem) has the charming habit of changing its trumpet color as it matures, so a whole row of 'Waterperry' is visually active. Named for the Waterperry School of Gardening in Oxfordshire. Blooms midseason.

## Wild about tulips

Tulips are my favorite cut flower.
When my father gave me a bouquet of red tulips for my tenth birthday, he unknowingly sparked an ardent love of this boisterous flower. In her remarkable book The Tulip, Anna Pavord describes almost all the things we want or need to know about them: their checkered history, infinite variety of color (everything except true blue), and remarkable ease of cultivation. However, few other flowers are as beset with myths and mistakes regarding their handling as a cut flower, something that Ms. Pavord neglects to address in her otherwise thorough book. So at great risk to my sanity, I will attempt to confine my comments here to their use as cut flowers.

## Classifications of Tulipa hybrids

For the most part, we Americans have not the vaguest idea how to help tulips give their best. First, let us consider their many types. In 1996, the Royal General Bulb Growers Association of the Netherlands adopted a classification system for the different species and cultivars of tulips. These are the most significant divisions when it comes to tulips' use as cut flowers:

Single Early: Single-flowered cultivars, limited color range, short-stemmed, easily forced, early flowering.

Double Early: Double-flowered cultivars, short-stemmed, limited colors, easily forced.

Triumph: Single-flowered, stems of medium length, flower in midseason. These cultivars were originally created by crossing the Single Earlys with the Single Lates and therefore have a wider range of color than the Single Earlys.

Single Late: One flower per stem, long-stemmed, late flowering. This group now includes those tulips in the superseded Darwin and Cottage groups. Wide range of colors.

Darwin Hybrid: Single-flowered, long-stemmed, flower in midseason. Result of crosses of the old Darwin group and Tulipa fosteriana.

Lily-flowered: Single flowers, one per stem, flowering in mid-to-late season, flowers have pointed, recurved petals. Stem length varies.

Parrot: Single flowers with fringed, curled, and twisted petals. Mainly late flowering, with stems of variable length. Longest lasting of the cut tulips.

Double Late: Also known as peony-flowered. Much more double than the Double Earlys and available in a wider range of colors. Late flowering and long-stemmed.

Rembrandt: Cultivars with "broken" flower colors, striped or marked with brown, bronze, black, red, pink, or purple on a red, white, or yellow background. Breaking from a solid color is caused by a virus spread by aphids. Usually longstemmed. The broken color becomes genetically stable when the broken tulip is used in hybridization. Once a tulip bulb becomes infected, it will always produce broken flowers. In Holland, it is against the law for broken tulips to be sold. Outlaws, how sexy!

Fringed: Single-flowered cultivars, petals finely fringed at the edges, late flowering, variable stem length, range of colors widening. In the best cultivars, the fringe is a different or lighter color than the body of the petal.

Viridiflora: Single-flowered cultivars colored with some green on their petals even when fully mature. Late flowering; stem length varies.

Other species: This class consists of all other species and their cultivars. These are often cultivated in small quantities but deserve special attention due to their unique characteristics. Many are excellent rock garden plants.


Tulipa 'Light and Sun' (orange) and T. 'Calgary' (white) exemplify all that is addictive about tulips: their color and form. At Wooden Shoe Bulb Farm, Woodburn, Oregon.

## Tulips as cut flowers

As Constance Spry implies in the quotation introducing this chapter, not all tulips are created equal. For use as cut flowers, it is important to know which will last longest in a vase, when these should be harvested, and how they should be treated. Unlike almost all other cut flowers, tulips continue to grow after they have been cut-if you do not believe me, see for yourself. Most will grow at least $1-1 / 2$ inches after they have been arranged in a vase. Tulips are highly phototropic; like sunflowers, they strive to face the strongest source of light as long as their stems are able to bend toward it. This makes them delightfully unruly, nearly lawless, and irresistible.

Tulips should be harvested (or purchased) while the flowers are still predominantly green, with just their edges touched with enough color to give you a clue of what is coming. When purchased, the foliage should be so fresh the leaves squeak when rubbed together. Because tulips do grow after being cut, when they are bunched into plastic sleeves, the petals will hang up against the plastic and be bruised or broken by the resistance they encounter as they rub along the plastic as they elongate. Noticing petals that appear pulled down in a bunch of tulips tells you that they are not fresh and have been bundled long enough to have grown.

Tulips do not require floral preservative, although they are not harmed by it except in high concentrations. A leaf or two left on the upper part of the stem will produce enough sugar to help the flower open properly and attain its maximum color saturation. If you see "bulb formula" on a packet of preservative, it means the recipe has low or no sugar. Use this at your discretion.

In a perfect world, you will take home your green tulips and arrange them immediately in a vase or wet foam, knowing they will drink a lot during their cut-flower life and committing yourself to maintaining the maximum amount of water in the container you choose.

In an imperfect world, you may be forced to buy limp tulips to get the color you want, or you may run one too many errands on the way home and find that the tulips are limp when you get there. There is hope. Fill your bathtub or a sufficiently large dishpan with enough warm (not hot) water to submerge the whole bunch of tulips by laying them flat (horizontally) in the water. Recut the stems. The whole flower stem, blossom, leaf, and cut stem end should be underwater. Make sure the tulips are lying with their stems straight-if the flower stem is curved as it drinks, it will stay rigidly curved. You may need to gently shake them (like waking a baby) to release air bubbles caught in the foliage, or weigh down the tulips with a heavy plate (which one does not do to a baby) to make sure they are absorbing water through all of their parts and not floating. After thirty to sixty minutes, the tulips should be thoroughly firm, having even regained some of their squeak. Then proceed.

To start with, cut the tulips in such a way that they seem too short. They are going to grow perhaps two more inches, so if you leave them too long at the start, they will get floppier sooner. By the next day, these tulips will look more in proportion in their array, and they will have turned to find the strongest light source in the room, either
a reflective white wall or a window. It is what they do, and no hocus-pocus will stop them.

Over the days the tulips will ripen their color and continue to grow, eventually opening their flowers flat during the day and closing up at night. The petals will enlarge, and finally the whole flower will be too big for the stem to hold up; then the tulips will start to drape in a languid, "We don't care anymore," Greta Garbo kind of way. The petals will no longer close at night, and the flower will finally fall apart. From a newly purchased or harvested bunch of still-green tulips to shattering flowers will be a ten-day journey. Enjoy the ride.

## Myths and mistakes

Putting pennies in the water of tulips is supposed to help their stems stay straight and rigid. It is the copper sloughing into the water that theoretically accomplishes this. Not true. Pennies and their small copper have no effect.

Some florists have been known to pierce the stem of a tulip with a straight pin, poking a hole right below the flower. Again, the point (so to speak) is to facilitate the straightening of the stems. This piercing has no effect, except the possible negative one of giving airborne pathogens a place of entry until the stem's thin sheath can repair itself.

We often see tulips displayed in their plastic sleeves in buckets at grocery stores and corner flower kiosks with nary 2 inches of water in the bottom for five to ten bunches of ten stems each to drink. If we question the clerk, he will tell us that tulips do not need much water while they are being stored. This is untrue, though it does allow the clerk to avoid having to carry heavy buckets around. Because tulips are able to absorb some water through the outer sheath of their stems (there are growing cells throughout the stem layers-tulips' innards are essentially all cambium, with the xylem and phloem running through it, and water reaches the vascular system from the sides as well as the cut ends), they condition best in the deepest water possible. There is no shortcut for this. Do not listen to the clerk at the grocery store.

Major flower growers treat tulips as annuals, harvesting them haphazardly, sometimes leaving the top of the scalped bulb attached, as well as the length of white stem that was underground. The stem should be cut shorter, up to where it is green, and any remaining bit of bulb should be removed. The green stem drinks; the bulb will not. Any leaf with its origin underwater should be removed, but all other leaves should remain attached to the cut tulip stem, as they help the maturing flower develop its best possible color.

In the home garden, where you want the tulips to return every year (unless you are profligate), always cut the flower stems above the bottom two leaves. As these remaining leaves mature and die they feed the bulb for the next year. The dormant bulbs want little or no summer water. Another way to help tulips to be more perennial is to plant them more deeply in the soil. Eight inches deep is better than 6 inches


So-called French tulips have bigger flowers and longer stems than most garden tulips, and they last longer. At the home of Mike and Linda Darcy.
deep when it comes to tulip planting. Let the ground get cold before planting new tulips-wait until November if you can.

## French tulips

What, then, is a "French tulip"? This term has no botanical standing, but in the cut-flower trade it refers in a general way to any tulip with a cut stem more than 18 inches long and a flower more than 3 inches long. Some of these cultivars, such as 'Maureen' (with an elegant egg-shaped white flower), used to belong to the Cottage category of cultivars, but these have been absorbed into the Single Late category. Not all of the Single Lates are tall enough or big enough to qualify as what a florist expects to receive after ordering French tulips from a supplier. Cultivars commonly called French are 'Mrs. J. T. Scheepers', which is bright yellow and has a huge flower; 'Dordogne', of a soft creamy orange color; 'Menton', similar to but pinker than 'Dordogne'; and, although its flowers are small, 'Queen of the Night', lumped into this dubious group because of the length of its stems.

Sun Valley Bulb Farm of Arcata, California, has bred a line of large-flowered tall tulips that they are calling their Redwood Grove series, which were bred to be of the French standard, and they have subsumed 'Maureen' into their tribe. The color range for this group follows the lead of 'Menton' and 'Dordogne', soft pinks and peach.

Other than brilliant yellow and purple-black, there are as yet no vivid colors in this group. As tulips go, these big flowers with their long, baseball bat-like stems are quite long lasting.

## Selecting tulips for their vase life

Certain groups of tulips last longer than others. The Parrot and Viridiflora groups, which can take many days to develop their strongest colors, are especially long lasting, often exceeding ten days. Parrots are bizarre to some, with their scalloped and ragged edges. No matter how vivid their color will become, they hang on to random green patches for many days, hence their longevity. Viridiflora means green flower, and all of this group maintain a green stripe on the outside of each petal, helping them look showy and fresh.

The Fringed group, named for the $1 / 4$-inch-long edging of fine fringe surrounding each petal, also have a good vase life, with large blossoms on tall, slender stems.

Some of my favorites that have been successful at the Clackamas Community College cutting garden plot are these:
'Estella Rijnveld': (Parrot) This flashy, fanciful flower is wildly serrated, and the color is red and white like peppermint candy.
'Groenland' (syn. 'Greenland'): (Viridiflora) This is one of the original greenstriped tulips; in this case, bright spring green divides the rose-pink petals.


Parrot tulips are one of the longest-lasting tulip types. 'Flaming Parrot' is pictured with Narcissus poeticus var. recurvus at the home of Mike and Linda Darcy.
'Maja': (Fringed) The soft yellow color of this thickly fringed tulip is creamy and refined. The flowers are large.
'Queen of the Night': (Single Late) Mentioned earlier, these flowers are amazingly dark, making a perfect small cup. They are among the latest tulips to bloom.
'Shirley': (Triumph) The white flowers of 'Shirley" are indeed a triumph of subtlety. They appear creamy white to start with, edged on each petal by the thinnest possible line of purple. As the flower ages, this widens and bleeds into the white background, giving the mature flowers a flamed-in-purple look.
'Union Jack': (Single Late) This tulip is what 'Estella Rijnveld' would look like if she were not a Parrot type. The flower is a large chalice of pure white randomly flamed with true red.

## Ravishing roses

Whether you grow modern Hybrid Tea roses or old garden roses, you will want to get the best out of them when you harvest for the house, and in addition to all of their foibles as garden plants, roses have very specific needs when they become cut flowers. Rose addicts generally fall into two camps: those who love the barely opening bud and those, like me, who swoon at the feet of a fully double, completely open blossom. Both styles have special requirements for their handling.

The roses arriving from florists are generally greenhouse types that would not survive long in gardens colder than zones 8 to 9 . Even in the balmier regions of California these roses are grown under glass to completely control their environ-ment-after all, this is a cash crop. It is hard for U.S. rose growers to compete with growers in South America. Roses love light, and at the right elevations at the equator, the flowers of a cultivar like the red rose 'Forever Yours' will have gigantic flowers atop stems like Louisville Sluggers. Aside from the politics and environmental considerations surrounding imported flowers, one cannot deny the amazing size of South and Central American roses.

Here are a few of the greenhouse rose varieties I know to be remarkable:
'Black Baccara': This is as close as the breeders have come yet to a naturally black rose. The outer guard petals are deeply dark, but as the blossom unfurls, it reveals interior petals more burgundy red. I once did a stunning bridal bouquet for a young woman in love with red, including open blossoms of 'Black Baccara', 'Charlotte', and 'Opium' roses, and the blended shades of red were divine, as all had the same dull sheen of old velvet.
'Blue Bird': Rich lavender in color, this is a much improved version of good old 'Sterling Silver', which, after all these years, is still grown by a few California
growers. The lavender roses tend to have a fulfilling fragrance. Unfortunately, for generations lavender roses have been known to attract mildew diseases, both in the greenhouse and the garden. More than fifty petals.
'Charlotte': If you want a truly red rose, 'Charlotte' is hard to beat. Mild fragrance, but a satiny sheen to the opening interior surface of the petals loads these flowers with drama. This is a rose blossom that does not get huge, which can be a good thing. The bigger the bud, the higher the price.
'Cool Water': Another improved lavender rose, this one has paler color than 'Blue Bird', and very round buds. The color is highly affected by climate, and you would not know that a stem of this cultivar grown in Oregon was the same as a stem from Ecuador.
'Katrina': If you like pink roses, this is one to special order. 'Katrina' has long elegant buds of creamy pink, with the color intensifying at the petal edges. This is a long blossom, and slow to open.
'Opium': The shape of this rose is boxy rather than elongated, which is an indicator both that the open petals will be slightly ruffled at their edges and that there will be many of them. 'Opium' is a rich dark shade of red, striking the middle ground between true red 'Charlotte' and dark 'Black Baccara'.
'Sahara': This rose is the color of sand, beige and cream and even slightly peachy, and exquisite. The flowers unfurl from the tips outward, revealing a strongly spiraled center. The blossom opens fairly quickly but will hold itself at perfect maturity for at least a week. Thick, old rose fragrance. If I were getting married again tomorrow, this is the rose I would have, combined with 'Queen of the Night' tulips. Oh, yummy.
'Skyline': This is my favorite yellow cut rose. The color is buttery and soft. 'Skyline' has lots of petals and stays beautifully in the plump bud stage for several days before opening. Light fragrance.

## What is fresh?

Roses should be shipped after as little handling as possible. Although many growers do it, the guard petals of the roses should not be removed before shipping, as this exposes the inner petals to bruising that would otherwise be absorbed by the guard petals-that is why they are called "guard petals," you see. Assuming the grower wants to make busywork for the hired help, the roses are shipped after having the guard petals peeled away, which means that when the retailer grooms them on arrival, even more petals must be removed. If you can see the stumps of removed petals at the base of the blossom, you're buying a flower that has had up to a quarter of its petals removed before you ever get it home.

This reduction in petal numbers makes the flower seem softer if you give the widest point on the bud a squeeze between thumb and forefinger. A fresh plump rose, with its full complement of petals, will feel tight and firm; even if it has started to open it will resist you when you apply pressure. An old or peeled rose will feel squishy.

Another reason to leave the guard petals on is to help the flowers unfurl properly. When roses open unassisted, the petals meet resistance from these outermost-and often imperfect-guard petals, which causes the inner petals to fold and bend in the curvaceous way that is so enthralling. If the guard petals are removed, then the inner petals meet no resistance, and they tip out from the base as they open, the petals staying rather flat and unexciting. And yet, we get in the habit of removing these guard petals instead of recognizing their several important functions. (If you grow exhibi-tion-quality roses in your garden and you take them to be shown, you will be thrown out on your ear for obvious removal of guard petals, and most especially if you leave a removed petal's stump showing. And rightly so.)

A rose that has taken a long plane flight will dehydrate, just as you and I do. If the rose is not properly rehydrated with a long drink of preservative solution in warm water, it will look as though it has sunken cheeks when you buy it. Beware of roses that look this way-they have been tight-packed in their bunches of twenty-five stems for too long and will not rejuvenate properly or last as long as a fresh rose should.

## Underwater or not

Roses should be recut at an angle at the retailer's, and if you have purchased roses by the stem, you should recut them at an angle again right before you place them in water. Cut-put into water-quickly, quickly. Do not give that cut end more than a heartbeat to dry and callus. You will not find a flower more sensitive to being out of water than roses are. When you buy roses by the stem, any good florist will put water tubes on their cut ends, even if you are only traveling a few minutes. A wet paper towel does not cut it. Roses do not know how to drink out of wet paper. Do you?

There is debate about angled cutting and quick immersion versus cutting the stems underwater. Underwater cutting on a large scale is often done with cleavers that are insufficiently sharp, and the cut stem ends add debris to the water. In addition to being hypersensitive to being out of water, roses are incredibly fussy about unclean water. (Why do we even try to please them?) Also, cleavers produce a blunt cut, and if the rose stem hits the bottom of its vase, it is not getting enough water.

In my experience, the best treatment of roses is to give them a sharp angled cut right as they go into fresh water.

In a flower shop, if you have access to the roses, look at the cut end: is it an angled cut and does the cut surface look fresh, or is there a blackened outline at the edge of the cut surface where debris and decay have entered the xylem? This tells you that it has been awhile since the florist last groomed this rose, and it has been sitting around the shop for at least two days.


The fragrance of roses makes them ideal for nosegay-style bouquets. Pictured here are 'Reine de Violettes' and 'Robin Hood'. At Kinzy Faire.

Another facet of the handling of cut roses is the presence of their leaves. Overzealous flower groomers will remove all of the leaves from cut roses, and this is a mistake. Of course any leaf that will be underwater should be removed, but all the rest of the foliage, say, on the top half to third of the stem, should remain. These leaves, assuming they are entire and healthy, will continue to feed the flower and enable the petal color to develop in full measure as the flower opens. This is true of roses you pick from your garden as well as roses you buy.

In my earlier discussion of tulips, I mentioned the horizontal soaking technique for flowers in distress. The exact same method works for roses that have a limp neck, as long as you catch them in time, say within four to eight hours of the bud nodding. To review, fill the bottom of a tub with warm water deep enough to accommodate the number of roses you need to submerge. Recut the stems and lay the whole thing, flower and all, in the water, making sure they do not float. A half hour should be long enough to stiffen the rose necks.

If you prefer the look of open roses and you need tight buds to open for a party soon, recut the roses and place them in hot water with a full dose of preservative. If they are then placed near a heat source, so much the better. However, roses coaxed into bloom in this insistent manner will not last as long as roses kept in cool fresh water to open at their own pace. This is a classic trade-off.

So there you have all I know about handling greenhouse roses. Much of this advice applies as well to roses from your garden, whether they are old garden roses (which I recommend if you have an integrated garden), or a rose ghetto with nothing but Floribunda and Hybrid Tea roses mulched with bark dust.

## Roses for your garden

Having been fairly disrespectful of modern roses as garden plants thus far, I do embrace their value as cut flowers. The Hybrid Tea roses we grow in our gardens tend to have better fragrance than their greenhouse counterparts and will occasionally produce more than one rose per stem, making them look more casual. Let me recommend a few English, Hybrid Tea, and Floribunda (cluster-flowered) roses for cutting:
'Betty Prior': (Floribunda) Single row of petals, bright pink.
'Chrysler Imperial': (Hybrid Tea) Elegant big red flowers, handsome buds.
'Double Delight': (Hybrid Tea) Part of the delight in question is the fragrance. White flowers lightly or heavily tipped in red, red tints expanding as the flower opens.
'Europeana': (Floribunda) Neon red-screaming.
'Fair Bianca': (English) Fully double, fresh whipping cream color. Deep musky fragrance.
'Granada': (Floribunda) The color of a tequila sunrise and full complex perfume.
'New Dawn': (Climber, Hybrid Tea) Silvered pink oval buds, produced in masses.
'Prairie Moon': (Hybrid Tea-Griffith Buck) Ultra winter hardy, fifty petals of buttercream yellow.
'Prospero': (English) Fully double, dark purple flowers, strong fruity fragrance. Glory in a blossom.
'Sheer Bliss': (Hybrid Tea) Refined flower, cream touched by varying degrees of pink, lovely fragrance. Exquisite buds.
'Sunsprite': (Floribunda) Ruffled, cheerful bright yellow flower, lemon notes in the scent.
'The Pilgrim': (English) Dense, fully double flower, strong but not strident yellow, good fragrance.

## Proud peonies

The thing to remember about peonies, the cultivars of Paeonia lactiflora that we use for cutting, is that they thwart being tricked into blooming out of season, and also they must be planted shallowly, with their growing eyes just at the soil surface, or they simply will not flower. The impression here is of a stubborn plant, but peonies are bone-hardy, long-lived, heirloom-quality plants. Too, it seems I forget from spring to spring how beautiful their scent is.

There are so many tropical plants that cold-climate gardeners yearn to grow, but their energies might be put to better use growing peonies, which are hardy to zone 4 and will not flower but just fade away above zone 8 . So ha! to all of you bananamaniacs. A northern gardener can wallow in peonies.

In the United States peonies became a stalwart of the Midwest cut-flower trade in the early 1900s when it was discovered that not only do they relish the climate, but peonies can also be cut at the "soft marshmallow" stage, with the first colored petal sneaking out of the calyx, and held out of water for up to two months in a moist cooler at $38^{\circ} \mathrm{F}$. The regular use of refrigerated trucks meant stored peonies could be shipped well after their natural period of bloom was over. Eureka!

But their natural period of bloom is fairly short-really just May and June-and then dependent on the weather. If we think of Mother's Day (the second Sunday in May) as the height of their season, then hot weather in late May will cook the petals, and rainy weather will send the heavy flowers into the mud. Then begins the long wait until spring in the Southern Hemisphere, when peonies will be seen again-much more expensively-as jet-setters from Chile and New Zealand. Research is being done in Alaska to see if they can develop a market for their peonies, which bloom one


The swooning romance of peonies. Adelman's Peonies, Portland Farmers Market.
to two months later than in the lower forty-nine states-much closer than Aukland. Given how long peonies can be stored, Alaskan peonies could straddle the seasonal gap from July to September.

Peonies for cutting gardens prefer full sun, where they bulk up. You need not divide them regularly unless you want to propagate the roots, which are similar to dark-skinned yams, with red growing buds at one end. And as stated, make sure these eyes are very near the surface when you plant them; do not forget where they are, which would be easy, as these are herbaceous perennials that die back in the winter. Once you have cut away the dead foliage, it might be easy to forget those latent buds and pile on the winter mulch. Peonies are durable when it comes to cold weather, and they do not need the mulch.

When harvesting your peonies, be mindful of the plant's future. Do not take away more than half of the total number of flower stems at full length. It is okay to cut the flowers from the remaining stems, just leave the foliage (this means shorter flower stems for arranging). The foliage is attractive all summer, and many cultivars have leaves of ruby red in the autumn. By then it is safe to remove these stems and use them in bouquets.

Peony flowers can have a single row of petals; be semidouble, as in two or three rows of petals with stamens clearly visible when the flower is fully open; be the Japanese type, notable for the flattened, showy petaloid stamens inside a single ring of petals; or be of the bomb type, with hundreds of petals (has anyone counted them?) that literally explode from their buds with silky texture and vivid color.

The color range of peonies includes white ('Duchess de Nemours'); white with peppermint specks ('Festiva Maxima'); pale yellow ('Alice Harding'); coral-to-peach ('Coral Charm'); all shades of pink ('Angel Cheeks' pale, 'Felix Crousse’ bright); Chinese red ('Buckeye Belle'); true red ('Red Charm'); burgundy-to-purplish ('Irwin Altman'). For cutting, the semidouble, Japanese, and bomb forms are the longest lasting. Buy them when they are just opening and enjoy them for ten days.

Favorites for cutting, in addition to those just mentioned:
'Bouquet Perfect': Large outer petals enclose a center shaped like a very full carnation; vivid pink throughout.
'Bowl of Cream': A fluffy double, color true to its name.
'Eventide': Big semidouble flowers, medium pink.
'Gardenia': Full semidouble white flowers; dark stems.
'Gay Paree': Shocking pink exterior row, flattened staminode petals that are pink inside and yellow outside so that the flower looks like it is lit from within. Pretty scent.
'Miss America': Double, pure white, with wonderful poise. Looks like a water lily.
'Moonstone': Bomb type, pale pink opening to white.
'Myrtle Gentry': Bomb type, pale pink, grow this for the scent.
'Old Faithful': Bomb type; red, red, red.
'Pink Hawaiian Coral': Double, sunset-coral color.

Peonies dry beautifully. Harvest them for drying when they are half to just fully open. Make small bunches and hang them in a warm dark place. The natural color of the flower will darken a few shades, making the burgundys nearly black. If the flower has been open too long, it will shatter when you dry it. Dried-flower wreaths with peonies on them command higher prices.

## A hydrangea renaissance

Martha Stewart is, in part, responsible for the justified return to popularity of hydrangeas, both as a cut flower and as a stalwart summer-blooming woody shrub. When your cutting garden is becoming too shady for roses, you can replace them with hydrangeas and be just as happy. A partial-shade cutting garden can be built around this versatile plant.

Generally speaking, there are two types of hydrangeas mainly used for cutting: the mopheads (Hydrangea macrophylla [Hortensia Group]) and the peegee hydrangeas (H. paniculata 'Grandiflora' and near relations), although other kinds are sometimes seen, and many more are sure to follow as Japanese forms of Hydrangea serrata prove their worth in the trade. The lacecaps (Hydrangea macrophylla var. normalis [Lacecap Group]) are widely grown in gardens but do not have the vase life or impact in arrangements that the mopheads do, and they dry poorly. The conversation here will confine itself to using the mopheads and peegees as fresh cut flowers and drying them, as there seems to be an infinite market for them, and the mophead group comes in the widest array of colors.

I spoke of tulips as being unruly, and so are hydrangeas, but for different reasons. Although the peegees are fairly stable as to their color-opening cream and fading to pink-the mopheads are anything but. The soil pH tells them what color to be, even if they are genetically predisposed to be pink or blue. Acidic soil-called sour soil—with a pH less than 7 (which is neutral) will give you hydrangea heads shading toward blue, and pink hydrangeas will shift to lavender. Alkaline soil-known as sweet soil—with a pH higher than 7 (the pH scale ranges from 1 through 14), makes blue hydrangeas lean toward pink, equaling more lavender shades. It is possible to have both pink and blue on one plant, depending on where the roots wander and which fertilizers have been used in the garden.


Hydrangea macrophylla (Hortensia Group) 'Ayesha' is useful both in the garden and in the vase. At Kinzy Faire.

This makes hydrangeas a challenge to grow, as it takes several years for the plants to settle into your soil and show you what their true color will be in it. Again, enjoy the ride, as the plants may produce some gorgeous transitional colors, never to be repeated. Once a plant is well established, you can easily-but not quickly-modify the color. If you want a pink hydrangea to be pinker, give it calcium carbonate, or gardener's lime, to further sweeten the soil. For bluer blues, use aluminum sulfate.

Overall, mophead hydrangea colors (and this goes for lacecaps, too) range from purple through any shade of blue; lavender, which tends to be a transitional color; dark to bright pink and cream with a pink outline; reddish-I say it this way because sometimes a hydrangea beginning its season some other color ages to red; and white, the white being more stable, although as the blooms age the white becomes green or pink, depending on the sun exposure.

## Working with mopheads

What we speak of as mopheads are intricately branched panicles of bloom, domeshaped more or less, composed of florets dominated by the bracts surrounding the tiny, buttonlike true flower, which is teensy and often sterile. There are four bracts per floret, which look like four petals. These may be pointed, rounded, or pinkedhaving closely serrated edges. Each floret is about an inch across, but that would be an average: some cultivars have huge florets. In one case, the cultivar Hydrangea macrophylla (Hortensia Group) 'Ayesha', each bract is cupped, which gives the whole inflorescence a markedly different look from any other hydrangea. Similar to it is the Japanese introduction Hydrangea macrophylla (Hortensia Group) 'Uzu', slightly cupped and often of a more pastel color.

When the mopheads start to expand their flowers (most do this in July), the dome is tight and the color may be intense at the bract edges but greener in the center. The color darkens to the center as the bracts mature. You may find that in this nearly ripe state you like the color best, but this is not the point in their development when hydrangeas should be picked. You can try cutting the stems long, back into the old wood, or soaking the young flower head in cool water before recutting the stem and placing it in warm water. You will gain some longevity for the stem if used fresh, but in this still-developing phase, it is not possible to get good results if you attempt to dry the flowers.

In every respect, it is better to wait to harvest hydrangea domes until the bracts are completely expanded, their texture when touched is firm and even leathery, and that tiny middle button, the true flower, has popped open, revealing the stamens and pistil. At this stage, the mophead is ready to be cut. It is still a good idea to cut the stem below the green new growth, where bark has formed over last year's new growth. This may leave you with more stem length than you may need initially, but do condition the stem in cool to slightly warm water in a dark place (having removed all of the leaves) with the stem at its full length. Since you are working with a woody


Hydrangeas are comely focal points in bountiful summer bouquets. At Kinzy Faire.
stem, either split the end vertically as described in chapter 4 or peel back an inch of the bark adjacent to the cut end, revealing the cambium.

The deciduous leaves of hydrangea are large and coarse, with varying degrees of serration. The variegated selections and sports of Hydrangea macrophylla var. normalis 'Mariesii Variegata' make excellent cut foliage, but in most other cases, the foliage of cut hydrangeas is strictly expendable. This is another group of flowers, like Syringa (lilacs), where the drinking stem sends water to the leaves at the expense of the flower head, and the sage advice is to strip all of the leaves from the flower stems as soon as they are picked.

Most hydrangea flower heads continue to subtly change color as they age. If you move to a garden that is new to you with hydrangeas already installed, only pick a few flowers each time you harvest, from July to September, so that you can evaluate color every two weeks or so and see when you like the progression the best.

Now you have a hydrangea dome you can work with, and it will last more than two weeks in water or floral foam. In the ground or in a vase, hydrangeas love water, so keep vases full.

Recommended cultivars from the Hortensia Group:
'All Summer Beauty': Wants to be pink but easily made blue.
'Alpenglühen’: Mature plants have red flowers; a good plant for smaller gardens, as it stays bushy.
'Bottstein': In naturally acid soils this compact shrub has mopheads of rich purple.
'Enziandom' (syn. 'Gentian Dome'): Brilliantly blue in acid soil. Why grow it any other way?
'Frillibet': Pale blue with attractively serrated bracts; can be made to show pink.
'Gertrud Glahn': Often seen, along with 'Mathilde Gütges', as a forced plant in pots for Mother's Day but makes a 5 -foot-tall plant in the garden. Light blue or light pink.
'Mathilde Gütges': Colors are intense, either royal blue or cotton candy pink.
'Merritt's Supreme': Huge panicles, with each floret having extra sepals. Can reach a lovely shade of purple-blue.
'Nigra' (syn. 'Mandshurica'): Can be pink or blue, but the flower stems are black-ish-red, giving the plant a distinctive look.
'Parzifal': Either purple (in sour soil) or bright pink (in sweet soil).
'Sabrina': Compact and charming, the flowers are creamy with dark pink sepal edges.
'Soeur Thérèse': Pure white, aging to pink. Needs partial shade.

## Hydrangeas with a point

The panicles of peegee hydrangeas are pointed (hence the species name, paniculata). These can be more than a foot long, and their creamy color makes these much sought after for late-summer and autumn weddings. They age to celery green and then pink. The florets are smaller, and the tiny true flowers are under them rather than in the middle of the bract structure. In some forms the sterile florets with bracts are so densely packed together that the true flowers cannot be seen, and sometimes the whole is looser and has more textural impact.

The stems of the Hydrangea paniculata forms are woody all the way up to the flower head and should be conditioned like other shrubs. The denser the flower head, the better it will dry. Here are the best forms for either use:
'Dolly': Does not show much color change, staying creamy white, on straight stems.
'Grandiflora': With its universal common name, peegee, this cultivar continues to be the standard against which other cut hydrangeas are judged. The panicle can be more than a foot long. Prune hard in early spring to produce the most floral volume later.
'Phantom': This form has long fat panicles, which turn pale pink and are greener to start with than peegee.
'Pink Diamond': The panicles turn much darker pink than others in this group and hold the color well when dried. Can be 10 feet tall.

## Durable and driable

There are many ways to dry hydrangeas, but remember that you must pick mature mopheads. If you want a quicky wreath, make it with fresh hydrangea heads on 4-to- 5 -inch stems, wrapping each onto the wreath frame with wire. Lay the finished wreath flat to dry in a warm dark place, and after a week or so the flowers will have dried in place and the wreath can be hung.

If you want to create arrangements with dried hydrangea, I recommend air-drying the stems in an upright position rather than hanging them upside down. There are two equally successful ways to do this: either stand the stems in a tall bucket with only an inch or two of water, which you never replenish, or unroll some chicken wire between two old chairs or sawhorses and arrange the hydrangea heads so their stems hang down through the holes while the head is supported by the wire. In both cases the flower heads continue to use the water left in the stem, drawing it up naturally, and maintaining their volume and color.

## Tropical flowers: Some like it hot

Tropical flowers (those plants growing in zones 9 and higher, just to be arbitrary) are a law unto themselves. Just as their needs in a garden are different from those of plants in temperate climates, so are their requirements to be successful as cut flowers. To some folks, tropical flowers are an acquired taste, and often those living in tropical climates think of these plants as weeds. This is because many of these plants have gone wild in areas where they are not native. The Hawaiian Islands are full of plants that are commonly identified with the island culture but are nonnative-the gingers, heliconia, bird-of-paradise.

Except for parts of the southwestern and southeastern United States, and, of course, the state of Hawaii and the territory of Puerto Rico, most of the U.S. cannot grow these plants outdoors; they are treated as houseplants. Tropicals are best allowed outside in the summer to encourage blooming. As cut flowers the tropicals and their foliage are widely grown where they can be and shipped all over the world. Boxes are packed especially for tourists to send to friends and family back home, who usually have not one clue what to do with them.

Common tropical cut flowers include these:

| Alpinia purpurata | Tahitian ginger |
| :--- | :--- |
| Anthurium andraeanum | flamingo flower |
| Calathea crotalifera | rattlesnake flower |
| Etlingera elatior | torch ginger |
| Gardenia jasminoides | gardenia |
| Heliconia caribaea | lobster claw |
| Heliconia psittacorum | parakeet flower |
| Heliconia rostrata | hanging heliconia |
| Strelitzia reginae | bird-of-paradise |
| Zingiber zerumbet | shampoo ginger |

## Treatment of tropicals

I find it useful to keep three main dictates in mind when working with tropical flowers:

1. No cold storage.
2. No preservatives.
3. Recut stems and add fresh water often.


Rattlesnake flower is a strong player in this welcoming front door display designed by Robin Miller, at her Hilo home.


Rattlesnake flower in full bloom in a garden near Hilo, Hawaii.

When unpacking tropicals after they have been shipped, rinse off their packing material—often shredded newspaper. For ginger, anthurium, and most orchids, fill a large bucket or tub with room-temperature water and soak the flowers headfirst for about fifteen minutes before turning them right-side up and recutting their stems. Tropical flowers (ginger, heleconia, anthurium, orchids, bird-of-paradise) are used to a humid environment, so dunking and frequent misting go a long way toward refreshing them. Both bird-of-paradise and anthurium have shiny surfaces maintained by ample moisture-if they are dull, they are old or have been mishandled.

## Tropical style

As for design, I am of two minds about tropicals: I like to see displays where the audacious flowers are enhanced by abundant complimentary foliage. I also like a minimalist approach, where the context is part of the ensemble and just one or two unblemished blooms easily command attention. Tropical flowers seem uniquely able to blend into settings with Oriental sensibilities, where one properly placed flower carries the weight of many.

Constant debate goes on about the aesthetics of blending tropical flowers with nontropicals. Frankly, if I think the mingle of colors and textures appealing and the overall effect appropriate to the context, I find no fault with the blending of garden flowers with tropical flowers. Using fussy fillers seems unnecessary, but again, given the combinations used and their context, I try to be open to any design, even if it is not what I might create if given the same materials. (Although I draw the line at baby's breath used with bird-of-paradise. I do try to be tolerant of wacky cut-flower medleys for the sake of my students. I am less magnanimous with my customers.) But the world is rife with people who need to maintain order, and for them the blending of temperate and tropical is simply not on.

The tropical color palette is dazzling. When decorating a home full of brightly colored art or with strong wall colors, meeting the challenge with a neutral answer rarely gives dramatic results. Bold colors should be used with conviction. In a home surrounded by a vivid garden, if one wants a sense of unity between home and garden, the indoor displays must have presence.

Look carefully at the well-grown tropical garden and note the contrasting colors found within the foliages and flowers themselves-the markings on croton leaves (Croton variegatum), the pink and orange on a catteleya orchid. We speak disparagingly of "colors not found in nature." But they are-and usually blended on the face of one petal.

Even monochromatic arrangements are more punchy when using tropical flowers, usually because the textures contrast in stark and beautiful ways. Anthurium are smooth and shiny; Tahitian ginger is clublike and full of curvy bracts; rattlesnake flower, becoming papery; mixing these forms effectively gives pastel or monochromatic tropical displays more presence than they might otherwise have. Truly, this is no different from designing with temperate garden flowers: when working with a one-color limitation, it is the clever interplay of texture that brings the bouquet to life.

Challenge yourself to work with more colors and textures.


# Basic Bouquets 

## A flowerless room is a soulless room, to my way of thinking; but even a solitary little vase of a living flower may redeem it.

-Vita Sackville-West, Some Flowers

The nosegay is a basic style of floral design: easy, versatile, pretty, and most important, fragrant. Created at Kinzy Faire.

KEEPING FLORAL ARRANGEMENTS simple is the best way to build your confidence as you begin to design with your own cut flowers. The more mechanics you assemble into an arrangement (floral foam, chicken wire, floral tape and the like), the more you have to hide your tracks to make the complex construction appear effortless and natural. Taking a simple composition of one or two types of flowers with one or two types of foliage in your hand, tying it with jute twine, and selecting an appropriate vase will always result in an outcome with more charm than an overly ambitious and obvious fabrication. Flowers in containers should look magical, and the hand of the designer should appear light and easy, if it appears at all.

## The nosegay

The nosegay (Okay, Class, got all of that puerile sniggering out of your system?) is an authentically antique form of arrangement meant to deliver what it advertises: a little posy of flowers as important for its scent as for its beauty. The name "nosegay"since you were wondering-comes from pre-Victorian London, where magistrates, court officials, and other persons of wealth, both men and women, would fashion something pleasant-smelling to carry in the crowded streets in an era when personal hygiene resources were severely limited. Should a person with a particularly fetid aroma approach, the bearer could bring the nosegay to the nose and inhale, where it acted as a filter. The nosegay was worn from a loop on the belt or carried.

In Victorian times, nosegays started to be made for transmitting the language of love, although their use in this way in other cultures predates the Victorian age in England. Flowers were included not for their beauty or their fragrance, but for their meaning. The name "nosegay" changed to "tussie-mussie," which better suited the delicate sensibilities of the prim Victorians, who would have shied at having a bouquet named after a body part, even one as relatively tame as the nose.

It has only been in more recent times that the nosegay, while still giving a nod to fragrance, has become simply a lovely gift.

The nosegay is a stepping-stone to bigger and better bouquets. Generally, nosegays have a round outline when viewed from above and are domed when seen in profile.

We do not need to be slaves to this description; it is just the basic shape from which to work. Tendrils and fluff floating beyond these perimeters are certainly allowable.

Once you know how to make a passable nosegay, you can expand it or pare it down to suit your needs. Whether you include elements of floral language should depend on knowing if the recipient will get the message.

## Building the basic nosegay

Here are three basic ways to start a nosegay:

1. Start with a flower head that is already shaped in the basic nosegay form, such as hydrangea or Sedum 'Autumn Joy'.
2. Start with the type of flower you have the most of and form the blossoms into a dome.
3. Start with one perfectly splendid flower, which you will keep at the apex of the dome while building the rest of the nosegay around it (as best you can).

Even before attempting any of these methods, because you are building this bouquet in your hand, you will want to have all of the stems-flowers, fillers, fruit, and foliage-ready. The circle you make by touching thumb with forefinger is your imaginary vase opening. As you build your nosegay, the stems will be below this circle and the nosegay will rise above it. All the stems hanging below your thumb and forefinger should be clean-because any foliage left on the stems would be beneath the water surface when the nosegay is placed in its vase.

The nosegay is best built in one hand while being added to by the other. Whichever is your less nimble or "off" hand becomes the "vase hand." Its job is to create the circle and hold the flowers, while your other hand adds elements. With one hand holding your burgeoning bouquet, you should never stop in the middle of production to do a task requiring both hands. Laying down a nosegay midway through is a big risk-you may not get the flowers back the way you had them. I always try to be sure everything is in readiness, so that once I launch into making a nosegay, I can proceed uninterrupted to its completion.

If you cook, think of this as making a stir-fry in a wok. There is a lot of cutting and chopping to do beforehand, and you do not put the heat on until all of the ingredients are arranged around you. This is the most time-consuming part of the process. Once you start cooking, a stir-fry is prepared quickly. Nosegays are the same.

The cooking analogy ends here. Although most floral instruction books speak of recipes for floral design, I take a more improvisational approach. You never know exactly what your garden will present. If you go to gather flowers believing you must have three of this and five of that, you may be disappointed. Instead, you may find


Nosegay construction method 1 starts with one head of hydrangea.


More flowers are added with the hydrangea holding them in place.
it more helpful to think of color and/or shape elements rather than specific types of flowers. For instance, rather than insisting on three stems of pink sweet william (Dianthus barbatus), you must be willing to assess your options in case you find only one of good quality. One pink rose, one sweet william, and one pink annual pincushion flower (Scabiosa atropurpurea) will give you three forms in pink, and perhaps a more interesting final result. Be open to making midharvest adjustments.

No matter which of the three basic nosegay construction methods you chose, it all goes together in roughly the same way:
first, big flowers
second, filler flowers and delicate, easily broken flowers
third, foliage collar


The nosegay is tied, keeping the flowers together.


All stems are cut at an angle for maximum water uptake.

The Dutch, or Biedermeyer, style of nosegay features flowers in concentric circles differing by color or flower type, like a bull's eye. Depending on your own creative style and process, this concept may help you as you build your nosegay or it may be a more structured approach than you like. I have gotten used to a more random, scattershot approach. Either produces a pretty result.

If you tend to like foliage interspersed throughout bouquets rather than segregated as the finishing collar, that is okay. If you want the fillers added as a dense collar around the edge of an assortment of flowers, that is okay, too. Try not to limit yourself with too many rules.

Once you have completed the nosegay to your satisfaction (starting over is not unheard-of, and there is no shame in it), it is time to bind the bouquet with a tight wrap of raffia, jute twine, or other natural fiber, tying tightly at the point where your thumb-and-forefinger circle was. Starting with a length of twine at least 12 inches long
and using the same two digits to hold the stems and the twine, leave a 4 -inch-long tail dangling next to the nosegay's clean stems. Wrap the remaining longer portion tightly around the bundle of stems at the point where it is encircled by your fingers, perhaps three to five times. When you have another 4-inch-long tail of twine left, make a knot with the tail you started with and cut off any extra twine (stubs should be less than an inch long on either side of the knot). Cut the stems at an angle (either all at once or quickly one at a time) and place the finished posy in a vase.

## What size?

How big should the completed nosegay be? That depends on the nosegay's function and intended context. If you started the process with a vase in mind, your finished nosegay should be in proportion to it. Perhaps you plan to give the nosegay as a gift, for the recipient's own vase; if so, make the nosegay to your own internal specifications or what you think the recipient might like. If you are making a nosegay to be carried, starting with one head of hydrangea as a framework might result in too small a bouquet. Three hydrangea heads might work better; five might be too big, especially once other flowers are added.

Nosegays are easy, and frequent practice will enable you to clap one together whenever it is needed or the mood strikes you.

## Hand-tied bouquets

Hand-tied bouquets are nosegays writ large. They are built in the hand (as nosegays are), hence their name. In this case, though, when you have added so many stems that the circle of thumb and forefinger can no longer hold them, you will open the circle as needed; expand your hand. You will have a larger end result and are not bound by the general shape of the nosegay form.

If you want the bouquet to be half-round, perhaps because it will have its back to a wall, then build it that way. You can easily make a bouquet to be viewed all around by swiveling your wrist as you add flowers, thus seeing the creation from every side as you go. You also have the option of adding taller elements to the completed arrangement once it is in its vase. This works well for folks with small hands, who may not be able to hold and add to a massive bouquet; stop when your hand starts to hurt!

I usually start a hand-tied bouquet in one of two ways: I either begin with several large framework flowers, such as hydrangeas or sedum (as for nosegays), and add more flowers at staggered heights, adding all of one kind at a time, or I start with a framework of foliage, mixed varieties if possible, to give me a grid of stems to hold flowers in place as I add them. Sometimes I have such a beautiful bouquet of mixed greens in my hand that it is almost a shame to add distracting color!


Hand-tied bouquets are like nosegays, only much larger and with a looser form. At Kinzy Faire.

Learning to make a hand-tied bouquet takes practice; I am always working at increasing my proficiency and think nothing of starting over. It would be helpful if my fingers were more nimble so that I could turn the bouquet in my hand.

Hand-tied bouquets are finished just as nosegays are, with a final binding tie of raffia or other natural fiber around the point where your hand was holding the mass together. If you know that the bouquet you have made will fit tightly in the vase you have chosen-perhaps a container with a constricted neck-you may not need to tie it, as the stems will not have room to shift once you have cut them and released your hand as the bouquet goes into the water. Use your judgment on this.

## Arrangements using floral foam

In both nosegays and hand-tied bouquets, the hand is the holding agent, so to speak. A holding agent is anything we use to keep flowers in place once they are arranged. A brass pin-holder, with hundreds of metal points aimed to pierce stem ends, is a holding agent. A glass or metal grid with holes to accept stems (also known as a "flower frog") functions as a holding agent. A snarl of pliable twigs is a holding agent. Marbles, smooth rocks, and colorful shards of glass are all holding agents.

The über holding agent is floral foam, also known by the original brand name given to it, Oasis. First widely used in the 1950s, floral foam is derived from cellulose (wood fiber) and behaves something like good potting soil. It is blended to absorb many times its weight in water yet stay rigid enough to hold stems exactly in place, and at the angle required, when the stems are inserted into the foam.

In many ways floral foam is like soil: it is exceptionally light when it is completely dry; it is porous; water poured onto the dry foam tends to pass right through, showing none of the capillary action (lateral movement) you might expect; capillary action is efficient when the foam is watered from the bottom; last, dry pockets of air remain in the foam when it is forced into the water instead of absorbing it at its own rate. And also like soil, if used floral foam has been allowed to dry completely, it is nearly impossible for it to reabsorb water evenly again; there will be air pockets left after water is reintroduced.

What does all this mean for a flower arranger? It means that floral foam must be handled as it was intended to be, and there is no room for variation. The water absorption process cannot be hurried-although there are "instant" grades of foamby pouring water over the block of foam or holding it underwater.

Here is how to prepare and use floral foam:

1. Fill a clean tub, dishpan, bucket, or sink with cool water before adding the foam.

Do not skimp on the water.
2. If you will be using flowers that benefit from floral preservative, dissolve or mix it into the water now, before soaking the foam.

3. Cut the dry foam into the basic size you will need and reserve the unused dry portion for future use. Some foam is made with scoring grooves for easily cutting the brick into halves or thirds.
4. Place the foam with its broadest surface on top of the water, where it will float for a moment before starting to darken and sink. Instant-type foam will begin absorbing water instantly (conveniently enough), the brick appearing to pull itself down into the water. Instant foam is fully saturated in less than five minutes. Standard-grade foam takes up to twenty minutes. Note that it is not efficacious to push the foam into the water. This results in uneven water absorption, leaving unseen pockets of air.
5. Once the foam is completely sunken, if you will not be using it immediately, add more water to the tank so that the foam will remain fully saturated.
6. When you are ready to construct the arrangement, pull the foam from its vat and cut it to the proper shape for the container or liner you will be using. The foam should not extend more than two inches above the lip of the container/liner and

Floral foam must be allowed to sink into water at its own speed. Forcing it underwater leads to uneven absorption, leaving unseen air pockets. At Kinzy Faire.
should not completely fill the liner; we must be able to stick a finger into the liner to make sure the finished arrangement has ample water. Not only should the foam remain saturated, the container should have plenty of "free water" (water not bound by foam).
7. If necessary, use waterproof tape to strap the foam into its liner. We want the final production to be secure, especially if it will be moved.
8. Begin inserting flowers, making sure that each stem (leaves, flowers, fruit) penetrates at least half the depth of the foam, no matter what its angle of insertion. Flowers in less than an inch of foam will suffer first if the surface water evaporates or the water level in the container goes lower than the level where the cut stem end is.

Some designers build arrangements using foliage first. Others start with flowers. There need not be hard-and-fast rules about this. Speaking for myself, I begin with a basic framework of foliage that will start me toward my goal of covering the foam. I also add the tallest and heaviest components at this point, so that I have a sense of the ultimate size and shape. If I plan for a strong focal point, I add it early, too. After basic greening and the addition of the major defining elements, I begin adding the rest of the flowers, usually all of one type at a time. Filler flowers are best added after the larger flowers because they are often brittle and could be easily broken if larger elements were inserted later. I complete the bouquet by turning it every which way to make absolutely certain that the foam cannot be seen from any angle, or from the back if I am doing a half-round bouquet. This gives the arrangement a professional finish.

Just to restate what should be obvious: the floral foam should not show at all when the arrangement is completed.

To maintain the foam-built floral arrangement, add water daily-yes, daily-to the liner. Make sure you can feel water in the container right up to its brim. Do not display the arrangement near a heat source or in a sunny window, unless briefly. Flowers in foam are more easily heat-stressed than flowers in vases.

When the life of the arrangement has ended and the spent flowers and foliage have been removed, the used foam should be thrown out. If it has not been saturated with floral preservative containing bleach, it can be composted. There are two reasons for this: as mentioned before, once dried, used foam will not reabsorb water evenly, and used foam, even when kept wet, cannot be resterilized. New foam is sterile, having no alien plant debris or pathogens living in it. Do not reuse floral foam.

When floral foam was first widely used, roses were extremely sensitive to the chemical composition. Eventually a more benign formula was discovered. Of course, not all flowers are equally adept at pulling water out of foam. In the plant directory, the relative ability is indicated for each plant. There are types of flowers that simply do not tolerate foam, such as most of the genus Campanula, and should not be used in it.


A basic structure of foliage is added to an arrangement after the foam is taped into place. At Kinzy Faire.

A modest portion of Dorothy
Rodal's container collection.
The Rodal garden.

## Concentrating on containers

You cannot be too thin, you cannot be too rich, you cannot have too many floral containers. Anything that holds water, or can be made to hold water, can be used as a container for flowers. And you really cannot have too many. Even having dozens upon dozens, I can still go outside and pick a bouquet, condition it, and then find I really do not have a vase to suit either the flowers or the context I have envisioned.

Seek containers constantly. It is helpful to keep a cache of vases for giving as gifts, because it may not always be appropriate to give a hand-tied bouquet without one. It is fine to take a hostess a beautifully wrapped bouquet without a container; one should not, however, expect a friend in the hospital to fend for a vase, and the nursing staff has much more important things to do. So always have vases you are willing to part with on hand. Some sources are thrift stores, garage sales, and flea markets, in addition to retail stores and even grocery markets. Look for containers as travel souvenirs. Gourmet shops often sell cooking oils, vinegars, and other condiments in jars and bottles that prove more valuable to me than their contents. Cleaned plastic yogurt and cottage cheese containers are handy to keep as liners for baskets.

Look for simple glass shapes to start a vase collection: cylinders (square and round), bubble bowls, bud vases, footed urns, ginger jars.

In addition to vases and baskets complete with liners, here is a partial list of other possibilities:

| bottles of all shapes and colors | boxes and chests |
| :--- | :--- |
| baking pans (loaf pans, muffin tins) | papier-mâché liners |
| creamers and pitchers | metal cones |
| jugs, vats, and buckets | glass blocks |
| goblets and tumblers | And from the natural world: |
| hubcaps | sections of bamboo |
| canning jars | bark or wooden bowls |
| jardinieres | carved rock |
| hollow candlesticks |  |
| glass battery cases |  |
| umbrella stands |  |



Hellebores are shown to best advantage in an old-fashioned "pansy-ring"container. At Northwest Garden Nursery.


Water tubes sustain the flowers in this "Hawaiian Punch" arrangement. Vignette by Robin Miller, Wendy Street, and the author, at the Miller home.


Fruits and vegetables make excellent containers. Fruit can be cored and a water tube inserted. These plastic tubes come in several sizes and are fitted with a rubber cap with a hole in it, big enough to insert a stem. The stems of flowers aside from heavy drinkers like roses last well in water tubes for eight to ten hours before the water must be refilled, ample time to decorate a table for a party.

Water tubes can also be used to tuck flowers into unexpected places. An arresting harvest display can be made from a perfect unfolding cabbage-or better, a Savoythat has had plump roses tucked amongst its leaves. This is not an idea original to me, but the concept can be expanded upon. Like gardeners, florists are notorious plagiarists, and fortunately no one has succeeded in patenting plant or flower combinations yet.

Another use for natural materials, especially leaves and bark, is to wrap them around plain glass containers. Ti leaves and eucalyptus bark are great for this, and of course we can also use fabric. If you have two sizes of cylinder vase with differing diameters, they can be nested, with the inner vase holding flowers, and the empty space between inner and outer vase filled with fruit slices, or dried or fresh bean pods, or beads and colored rock.

One can never have too many containers-you never know what you will need. Pictured is a portion of the collection of Wendy Street, in her home in Portland, Oregon.


The container is an integral part of the arrangement; here a poi-making bowl is put into service for flowers. Arrangement by Wendy Street, at the Miller home.

The holding agent can become part of the arrangement when you are using clear glass containers. If you are using rocks, marbles, or tumbled glass for this purpose, do not place all of the material into the vase at once, because you will have to jam the stems into the marbles (for instance) to hold them in place, bruising the cut ends and creating debris. It is preferable to add a few rocks (or whatever), then a few stems, more rock, a few more stems, in stages until the arrangement feels complete. It will be difficult to change the water in such a bouquet, so the best advice is to keep the water level high and to use preservative.

Containers must be clean when an arrangement is installed in them, just as flower storage buckets must be clean. Wash vases thoroughly after each use and rinse vases that have been sitting around before reusing them.


# Special Occasions 

Flowers always make people better, happier and more helpful; they are sunshine, food and medicine to the soul.
—Luther Burbank, My Beliefs

Housewarmings are the perfect occasion for splashy entry displays.
Designed by Robin Miller, at her new home.

MOST OF THE FLOWERS we grow for cutting or buy to arrange are given away, either directly to a recipient-friend, family, business acquaintance-who is ill or bereft or celebrating or merely having a bad day, or indirectly, because we are decorating our house or a more public space for the enjoyment and honor of others, the guests. We give bouquets to hosts at parties or the simplest get-together, and we decorate the bedroom for out-of-town guests, arranging for hotels to do this when our guests are not staying in our homes.

The presence of fresh flowers in a room or at a party is an indication of welcome and respect, of affection and thoughtfulness, of shared sorrow or remembrance. Flowers weighted with such messages need to set the right tone: festivity, tradition, simplicity, and exuberance. And again we turn to context and the specific occasion to help decide the style of the bouquet. Knowing how flowers are going to be used in a home makes them easier to give appropriately.

There are an infinite number of occasions that need to be noted by the presence of flowers, but there is no reason to bankrupt yourself to set the floral tone you want. Flowers expressing enthusiasm and love can come from your own backyard anytime with forethought and careful planting. Blend your own flowers with a few from a florist to create the sentiment you want to evoke and to celebrate family gatherings.

This chapter proceeds both as a celebration of celebrations and as a methodical visit to the four seasons. Let us examine our options for expanding happy events and traditional holidays with the inclusion of festive flowers.

## Winter and its holidays

Because I come from a family of collectors, married into a family of the same, and have friends who amass all manner of stuff, giving containers and flowers that reflect their tastes is easy. Sometimes narrowing the field of options is the most difficult step, and in the winter, it is the limited selection of flowers available that guides my decisions. Flowers given at this time of year are more cherished. Their exuberant use at the holidays, styled to fit the surroundings, adds visual joy to the season of giving.

In the Hardiman household, Fred and Lucy consistently follow a Victorian theme for their winter holiday party, in keeping with the vintage Queen Anne-style home


Botanical art on china reflects the colors in the flower arrangements for a holiday tea at the Victorian home of Fred and Lucy Hardiman, in Portland, Oregon.
they have lovingly restored. Taken in small vignettes, all of the Christmas decorations might seem over the top, but the whole ensemble is lively and festive, heaped with family traditions. Lucy's collection of "smokers," European carved wooden figures that can be used to burn incense, stand amid evergreens, pinecones, and scattered brass candlesticks on a buffet. Heirloom vases and pitchers are filled with flowers, berries, and evergreens for the living room, and for the dining room's groaning board. A blooming plant, perhaps an orchid or a pink Cyclamen persicum in a simple terra cotta planter, bedecks the guest room turned cloakroom, which also houses a small fresh tree decked with ornaments in a gardening theme. The big tree in the living room is the focal point, covered by Fred with hundreds of lights and Lucy's collection-long in the acquiring-of sparkly blown-glass ornaments. The tree glows, almost levitating it is so bright. Flowers joining it in the room must be equally luminous. There is always space set aside for a blue-themed Chanukah scene, with a menorah, a dreidel, and Chanukah Chicken cookies (a loopy and extremely local custom started by our pal Nancy Goldman and abetted by Fred and me), to include and acknowledge the presence of Lucy and Fred's Jewish friends and coworkers.

The dogs are not forgotten: both the Hardiman


Wearing floral collars, Quimby (seated) and his gal-pal Tilly (floor) are ready to receive guests at the Hardiman holiday house party.
dog, Quimby (Quimberstrumpus rubra-furia), a straw-berry-blonde golden retriever, and my dog, Tilly (Tillianthemum robusta), half golden retriever and half black Labrador, are bathed and brushed and adorned with lei (the plural of lei) woven in the traditional Hawaiian haku style around their necks, which they have both worn for special events all of their lives. They have grown accustomed to being randomly (in their minds) decorated. Dogs who are used to wearing a collar will be willing to hear a lei as long as it is compact, not too fragrant, and does not restrain their freedom of movement. Once the party starts and the dog is being praised, he or she will be willing to wear flowers all the time. Other dogs not thus dressed may become jealous and bite at this decoration when they realize that the bewreathed dog is beautiful and getting loads of attention.

Even the powder room is included in the floral decorations with a small nosegay near the sink, and Fred's office gets an appropriately masculine dab of evergreens and berries. Last, a gardenia floating in a bowl in the bedroom soothes Lucy to sleep after the last guest has departed.

Lucy has Blue Willow china (Fred's preference), as well as Portmeirion-inspired botanically themed dishes, which she uses interchangeably throughout the season. When hosting the holiday luncheon or tea for her busi-


Chanukah is also celebrated at the Hardiman holiday house party.


If you need an excuse to have flowers in the house, winter holiday entertaining is all the reason you need! Hardiman holiday house party.
ness associates in her garden design firm, a less overtly Christmas, more plant-focused theme prevails, but wandering gold ribbon and terra cotta containers touched with gold spray paint remind guests that this is a festive occasion, too. Foliage combinations form the heart of the arrangements, with berries of various kinds for color and just a few flowers, usually white, enhancing the botanical illustrations on the china.

When the Hardimans use the Blue Willow dishes on Christmas Eve, creamers and stout pitchers are filled with foliage and flowers in a grouping at the table's center. These leave room for passing bowls of Dungeness crab halves, followed by empty bowls for collecting the shells, and ending with a huge bowl of salad. This is a Northwest food tradition followed in many households, since this delicacy is, miraculously, at its cheapest this time of year.

In my mother's home on the Oregon coast, the panoramic view of the sea dominates any and all decorations during the day, but once the sun sets, the family set of Cowslip Spode china dictates the color scheme. Because the pattern is colorful, a more varied holiday theme can be followed than the typical holiday red and hunter green. In fact, the red of the flowers is decidedly burgundy-magenta, the green is bright, and there is yellow and a touch of forget-me-not blue. Because of frequent travels to Hawaii by various members of my family, the presence of small pink anthurium and yellow orchids in the centerpiece is welcome. We eat crab at Christmas, too!

The Christmas tree in this coastal setting is, after years of collecting, covered with filament and feather-tailed bird ornaments, many of them clipping upright onto the branches instead of hanging down. Again heirloom vases are called into service to dress the tables around the tree, and there is always at least one poinsettia, usually of a color other than red. Amid the other family traditions is Mom's practice of trying the next new poinsettia cultivar.

## Project: Creating a winter welcome

When you decorate the outside of the house for the holidays, you can make simple but effective outdoor arrangements using cut foliage and berries, secured in moist potting soil in pots that might be standing idle since the removal of the past summer's annuals. No pot should think it is getting the winter off! Once the nights are cold, these pots can help to create a welcoming scene around your front entry or grouped together on a back deck or patio where flowering potted plants would be placed in spring.

The construction steps are simple: tamp fresh potting soil into a pot with a drainage hole, up to one finger-joint below the rim (slightly more than an inch for most folks). The soil should be moist, and outdoor pots to be displayed under cover will need to be watered well once a week. Start adding plant material to the pot, using the tallest elements first, working back to front for a pot displayed with one side to a wall or from the middle outward for pots to be seen from all sides. Leaves and

Even in the winter, porches and dooryards can be decorated with welcoming and durable arrangements created in soil instead of foam. At Garden Fever, Portland, Oregon.

needles should be removed from the bottom 6 to 8 inches of evergreen stems before the stems are inserted to that depth into the potting mix, simply because foliage takes up a lot more room in the soil than clean stems do. Add berries and ornamental grass seed heads-and any other potentially fragile stems-last, so they are not damaged by heavier stems. You will know you are finished when all of the soil is covered and it is difficult to find room in the pot for one more stem. The accompanying list suggests plants that could be used for such a project.

## Fruit:

Callicarpa bodinieri var. giraldii ‘Profusion’
Cotoneaster (any evergreen species)
Gaultheria mucronata
Nandina domestica
Rosa species
Skimmia japonica
Symphoricarpos albus
Symphoricarpos 'Mother of Pearl'
Symphoricarpos orbiculatus
Viburnum tinus

## Seedheads/flowers:

Allium (species with persistent seed heads)
Celastrus scandens
Cbasmanthium latifolium
Crocosmia hybrids
Eryngium $\times$ tripartitum
Helianthus annuus
Hydrangea macrophylla (Hortensia Group) ornamental grasses (late flowering)
Pblomis russelliana

## Broad-leaved evergreens:

Ceanothus 'Point Reyes'
Garrya elliptica
Laurus nobilis
Mahonia aquifolium
Viburnum tinus

## Conifers:

Abies grandis
Abies procera
Cedrus deodara
Chamaecyparus pisifera 'Golden Mops'
Cryptomeria japonica ‘Elegans’
Pinus contorta
Pinus strobus

## Deciduous shrubs:

Cornus alba
Cornus alba 'Midwinter Fire’
Cornus sericea 'Flaviramea'

[^0]| beautyberry | purple |
| :--- | :--- |
| cotoneaster | orange/red |
| pernettya | white/pink |
| heavenly bamboo | red/orange |
| wild rose | red/orange |
| skimmia | white or red |
| snowberry | white |
| hybrid snowberry | pale pink |
| coralberry | rosy purple |
| laurustinus | blue |

ornamental onion tan
bittersweet orange
northern sea oats bronze
montbretia orange/rust
sea holly
common sunflower
mophead hydrangea
Jerusalem sage dark brown
prostrate ceanothus
silk tassel bush
bay laurel
Oregon grape
laurustinus
grand fir
noble fir
deodar cedar
threadleaf cypress
Japanese cedar
lodgepole or shore pine
eastern white pine
red-stem or red-twig dogwood stems
red-stem or red-twig dogwood stems
yellow-stem or stems
yellow-twig dogwood
smokebush leaves
oakleaf hydrangea leaves
curly willow stems

As a last step for this type of project, add outdoor lights or weatherproof rib-bons-metallics work best-to add some flash. If you have interesting seedpods (iris, poppy pods, pinecones), these can be touched with a metallic spray paint or glitter or-heavens!-both, before being added.

An outdoor arrangement like this can last a month or more and can be built around a winter-flowering shrub permanently planted in the pot, such as a Camellia sasanqua or Lonicera fragrantissima, as long as the inserted foliage will not harm the roots of the plant, and the plant is winter-hardy enough to live in a pot year-round. Whether there is a live plant in these winter arrangements or not, as spring approaches, the evergreens-be they broad-leaved or coniferous-can be exchanged for early-flowering branches or pansies and primroses, becoming an announcement of the changing season.

## Spring and renewal

Learn to love daffodils and tulips if you do not already. As mentioned in chapter 4, they have special needs as cut flowers, but these needs are not complex; it is just that both types of flower have little foibles that must be understood to make the most of them. And together they are the harbingers of spring, enhancing each other and lifting our spirits.

In the Mike and Linda Darcy household, each season is thoroughly recognized and celebrated, and now a third generation, the grandchildren, will breathe new life into Easter. The ample garden-where the Easter Bunny has been busy-is the focus for the children, but the inside of the house is also decorated with elegant and bountiful bouquets for the adults to appreciate. Linda is a tireless collector of flower containers and decorating accessories. She and Mike are both avid gardeners; hence there are always many appropriate vases, bowls, watering cans, and jardinieres to choose from when ornamenting the dining and living areas of the house.

Even before Easter, Mike and Linda host a party to kick off the gardening season, and depending on the calendar, many of the garden-party flowers will often still be vaseworthy for Easter. Having a large and varied supply of their own plants, selected to give the garden both foliage and floral interest year-round, enables the Darcys to save money on store-bought holiday and special occasion flowers, and to be much more inventive. The only time flowers need to be purchased is when cutting enough of something would diminish the garden's show more than Mike and Linda are willing to tolerate.

Unlike the vintage Hardiman house mentioned earlier, the Darcy home, while not brand new, is modern, and the public areas are all on one level. It has an open floor plan that enhances entertaining, with lots of windows inviting the garden into the house and assuring ample natural light. Interestingly, the house has two dining rooms, as well as a spacious living area and a family room beyond the kitchen. Because the kitchen is small, the strategy of heavily decorating the living and dining areas, and


Flowers can be both elegant and effusive. Easter at the home of Mike and Linda Darcy.

## SIZING UP A CENTERPIECE

The hot tip for measuring the proper height of a centerpiece is to sit at the table, put an elbow on the table with your hand in the air formed into a fist, and place your chin on your knuckles. If you have to strongly lift your chin to reach your fist, your chair is too low. Assuming your chin rests right on your hand without your having to tip your head back, measure the distance from your elbow to your mouth. This distance is the height allowance you have for an arrangement on that table. In my case, the distance is about 15 inches.

Surprising as it may be, one can get away with a multidimensional centerpiece bouquet that is not squatty. I am always made uncomfortable by sitting down to a table banked high with food that has been given a floral focal point that looks like a sinkhole. Some hosts and hostesses are so fearful of a centerpiece impeding the course of convivial conversation that they cannot imagine a decoration more than 4 inches high. What a waste of space! One does want to see the flowers over the food, and measuring with chin on knuckles indicates how high the centerpiece can be without becoming a barrier. Of course, on a really wide table or a round table more than 60 inches across, you should not be talking across the distance anyway, unless you are making a pronouncement you do not mind everyone hearing.
serving beverages in the family room, effectively draws guests away from the tight hub of the kitchen. Mike will not allow the words "kitchen remodel" to be uttered in his hearing.

During fine weather, parties at the Darcys' are further decongested by the recent installation of a courtyard surrounded by the largest and most intensely planted part of the garden. This means there can be more than one beverage station, and the food is served on long tables on the terrace, deck, and lawn. One would think isolated cliques would stagnate in various areas, but with gardeners wanting to see all parts of the garden, a crowd of hort-heads mingles and keeps moving!

## Project: Useful snarls

One of my favorite ways to display tulips is in "bubble bowl" vases. These wide-mouthed, nearly spherical containers may at first glance seem better suited to floating stunning single blossoms, but there is a quick and easy way to turn them into efficient vases for centerpieces. Rather than trying to fill the container with masses of foliage to hold flowers in place, or building a hand-tied bouquet and cutting the stems to stabilize the arrangement, I like to use a trick I learned from Liz Eiseman, with whom I worked for several years. Using pliable stems such as those of curly willow (Salix babylonica var. pekinensis 'Tortuosa’) or red-stem dogwood (Cornus alba), I wind the leafless branches and twigs around my hand to make a loose coil or snarl. I then stuff this into the bubble bowl, sometimes adding more than one snarl to create a grid of sorts, sufficient for holding ten stems of tulips, a touch of contrasting foliage, and a filler or two.
(Of course, spring is not the only time of year when such a mechanism can be effective, and any pliable woody plant with colorful stems can be used as the holding agent. However, all of the foliage must be removed from the stems.

The delightful thing about this style of floral design is that your holding agents, the branches, become an integral part of the finished bouquet, adding their color and smooth texture to the ensemble. The shape of the finished product is heavily dictated by the form of the vase-it will be mainly dome-shaped and not terribly tall, enabling this style of vase arrangement to work well as a centerpiece that does not block anyone's view.


A snarl of curly willow holds tulips, epimedium, and variegated hydrangea foliage in place in a wide-mouthed container. At the Darcy home.

## Summer's flowers and fruit

When your own garden cannot produce enough flowers for a truly stupendous party without itself being too much diminished, how nice it is to turn to the farmers' markets for an extra bunch of this or that, or to find a type of flower that is pleasantly early or late for its season, making an unexpected appearance. Thanks to farmers' markets, beautiful arrangements are assured with flowers picked at the perfect time that have not been stressed by being shipped great distances.

Summer is when the annual plants step to the forefront of our gardens. Whether you grow them in rows in a cutting garden, sprinkled throughout perennial borders to invigorate the summer doldrums, or in mixed containers as color spots on terraces and patios, many annuals yield excellent cut flowers. The stalwarts of the basic summer planter-marigolds, petunias, lobelia, alyssum, coleus, creeping zinnias-all make reasonably good cut flowers, although not phenomenally long lasting.

In mid-to-late summer we start to see the beginning of the harvest from those plants that provide berries and fruit for cutting. This group includes the berried St. John's worts, such as Hypericum xinodorum 'Elstead', and the first clusters of grapes on Vitis vinifera 'Purpurea'. Branches of apples or pears carrying immature fruit are wonderful in summer bouquets. Even the vegetable garden can be utilized, including leaves of Swiss chard (excellent in water but not long lasting in foam) and the flowers and ripening pods of scarlet runner beans. The seedpods of the wild perennial sweet pea (Lathyrus latifolius) are in several ways more appealing to cut than the short-lived flowers-you keep this determined weed from spreading by seed, and the attractive slender pods have a much longer vase life than the flowers do. I also suggest growing the hyacinth bean (Lablab purpureus) both in the vegetable garden and as a decorative element in a mixed perennial border.

The hyacinth bean is named for its large flowers, but these are rarely harvested to use fresh because the following bean pod, which is shiny and dark purple, is so very showy. When growing this plant from seed, be aware that not all of the plants will be equally decorative, due to natural genetic variation. The seedlings that will produce the most prolific purple pods will often show purple coloration on their stems and purple veining on their leaves. These are the plants to keep. Thin out those young plants that are all green, as their eventual pods will be dull in color (sometimes not even purple at all). The cut pod stems will last more than two weeks in fresh water and do not like cold storage. The pods develop at the height of summer's sun and heat, and if held in a cooler will quickly mildew.

Summer is the main wedding season, so it follows that it is also the season of anniversary celebrations. Summer parties are often held outdoors either at homes or at commercial spaces featuring well-tended gardens. Some think that special occasions held in gorgeous gardens do not need the further adornment of floral arrangements, but why should this be? Why not add to the opulence and festivity of an event by having floral bouquets at key locations-a nosegay in the powder room, a bombastic


Summer's bounty of flowers and seedpods, ready to bring the season inside.
bouquet on a buffet table, a standing champagne cooler bursting with flowers marking the entrance to a pathway, or a welcoming display on a guest book table.

Not every garden has an adorable handcrafted chapel on the premises, but at Kinzy Faire, the garden of Penny Vogel and Millie Kiggins, Millie has built a memorial chapel honoring her grandparents, who were the original homesteaders of the property outside of Estacada, Oregon. When the garden has guests the chapel doors are open, and the tiny church (seating fifty if all are good friends) houses the garden's guest book, which you are expected to sign if you want to be invited back. The Victorian table is an ideal spot for a summer bouquet, arranged in colors that are enhanced by the warm tones of the wooden walls. All of the flowers and foliage can come right in from the surrounding garden (after proper conditioning, of course).

## Project: Letting flowers go to your head

Summer is the time when hydrangeas are at their peak, and this versatile flower can be used in many ways. For example, hydrangeas can make easier the construction of Hawaiian haku-style lei, mentioned in the winter section, which humans (as opposed to dogs or, as you will see, donkeys) usually wear as head wreaths or hatbands. Because the hydrangeas will, over time and if not excessively jostled, dry in place, they also make the lei surprisingly semipermanent.

An authentic haku can start with a base of raffia, jute twine, or other natural fiber that flowers are woven or braided onto (if serious sturdiness is needed, a taped-wire base can be substituted), or the flowers can be woven directly together. Make a loop in one end of the base, the starting point. If you are making a hatband, pull the base strand around the crown of the hat, give yourself another 2 to 3 inches of length, and cut the base strand. Make another loop at the end of the base strand, and you will know to stop when you reach this loop.

Making any lei is a lot like cooking a stir-fry (or making a nosegay): you want all of your bits of hydrangea, rosebuds, annual statice, dusty miller leaves, orchids or plumeria-whatever you are using-ready for use. Once you start the construction process, you will not have both hands free until you have finished, and laying aside the half-started haku so that you can remove calices and extra stem-length from flowers or harvest more buds may cause the haku to loosen and unwind, and you do not want to have to backtrack once you have started, especially if you are working with a pattern of flowers. Each flower or bud or leaf added to the haku should have not more than a 2 -inch stem to bind into the lei. Stems shorter than 1 inch are difficult to keep in place.

Starting just below the loop, hold a small branchlet from a mophead-type hydrangea against the base twine, and wrap a separate piece (I like to use raffia) around the twine and the stem two or three times, pulling fairly tight. Hang onto this start of the lei with your off hand (your left hand, if you are right-handed), using your thumb, index, and middle fingers to hold the tension on the raffia piece you are using for


A festive bouquet graces the hand-built chapel on the grounds of Kinzy Faire that houses the garden's guest book.
wrapping, which will be hanging loose as your more dexterous hand (your left hand, if you are left-handed) picks up another flower. Add the second flower, making sure to cover the stem of the first flower with it, and wrap its stem two or three times. Each new addition should cover the stem of the last flower added. With practice, it becomes easy to use your free hand to gather several flowers at a time, making a fuller and more intricate lei.

If you are making a long haku-style lei, one piece of raffia will not be enough to do all of the wrapping onto the base. If you must add another raffia piece, do so when you still have 3 or 4 inches of the first piece unused. Lay this "tail" of raffia along the base strand and lay a tail of equal length from a new piece of raffia next to it (so that the length of the new piece lays over the already bound portion of the lei). Holding the base and both tails, wrap the new long piece over the combined tails once or twice and add your next flower. As you continue to add flowers, you will wrap over these remaining short tails, seamlessly binding them into the haku.

When the lei is as long as you want it to be, make a loop in the end of the base piece, if you have not already done so. It is much easier to make the end loop before you start adding flowers, and even if I am making an open-ended lei to wear as a stole, I determine a terminal length and make an end loop. When the lei flowers reach the loop, make two or three knots into the loop using the remainder of the free piece of raffia used for wrapping, but still leaving your loop. You're done! Attach more raffia, pretty yarn, or lengths of ribbon to both loops (beginning and end) and use these to tie the lei in place on your hat or around your head, or around the head of a friend!

The first haku lei I ever made took me ninety minutes, and I had an intense cramp in the broad muscle of my left thumb. Now I can make one in fifteen minutes with no cramping. Using branchlets of hydrangea makes haku-style lei making quicker and also easier on the hands.

The Hawaiians have a wonderful tradition of giving lei for any occasion. Any flower, be it Hawaiian native or wild-growing introduction, can and will be used. Unusual vines, seeds, foliages, and even seaweed are strung, woven, or braided to make lei, and everyone-men and women, young and old-wears them. Many years ago I attended a luau at the home of Oregon's Hawaiian florist Mark Vossbrink and found a bedsheet spread on the lawn where guests entered his garden, with prepared flowers of every possible type and color heaped in the middle. Each new arrival was asked to sit at the edge of the sheet, where we were handed a lei needle and precut length of heavy cotton thread to string a lei. When the lei was finished, each person placed it around the neck of the person who had entered the party immediately after her or him. As each of us made our lei to give away, we were wearing the lei we were given by the guest ahead of us. Isn't that the best icebreaker in the world?


Making a woven lei is easily demonstrated but can only be truly learned by repeated practice. At the Summer Farm School, Vancouver, Washington.

All of the children pictured made their own lei. Only the donkey had help. At the Summer Farm School.

## Autumn and the mingling of textures

Although not an autumn person myself, I have come to appreciate the abundance of textures uniquely available in the fall season's cutting garden. Some of the indefatigable late-spring-into-summer-blooming herbaceous perennials, such as Scabiosa caucasica and Echinacea purpurea, are finally starting to wear out, but perhaps it is time to let these plants form a few of their remarkable seed heads. By contrast, the Michaelmas daises (the true asters) are just coming into their own. Seedpods form on Crocosmia $\times$ bybrida 'Lucifer', and the last Oriental hybrid lily to start blooming in my garden, Lilium speciosum 'Uchida', opens its first flower on Labor Day. The tomatoes seem to ripen all at once as the children head back to school, and I count Labor Day as the first official day of autumn.

Although they start blooming in midsummer, I think of autumn as dahlia time. In September and October, and well into November in a mild year, the dahlias are at their peak when other plants are preparing for winter. Dahlias always seem to find winter a rude shock, oblivious to the foreshadowing of the first hard frost by the shortening of the days.

Being a spring person, I find the resurgence in the fall season of spring flowers, which bloomed in May or June and are now putting on a second show, doubly valuable. Perhaps this is why the partnership of roses and clematis in the garden so delights me. The roses 'Robin Hood' (from the Hybrid Musk Group, vast clusters of small cerise florets) and 'Madame Isaac Péreire' (a Bourbon type, with dense, fully double blossoms in rich pink) both bloom even better in the autumn than they do in the spring. 'Madame Isaac', by the way, is extremely fragrant, and folks who study such things say that she is one of the best-a true rose scent with a touch of ripe raspberries. Both roses make terrific cut flowers, dramatic in blossom style, depth of color, and longevity.

As for clematis, I have discovered that many of those best for cutting, such as the herbaceous perennial (nonvining) Clematis $\times$ durandii, reflower amply in September and October if they are hard-pruned (cut back to less than 2 feet tall) when they go into a resting phase after their spring flowering season. With an application of mild fertilizer and consistent watering, you will be pleasantly surprised when the plant comes galloping back into bloom for autumn arrangements. In coastal areas with long growing seasons, such clematis may, with proper care, enjoy three cycles of bluepurple blooms. When picked with long stems, these are immensely satisfying cut flowers.

Autumn is yet another season of parties, culminating with that gastronomic extravaganza, Thanksgiving. Even though the first day of winter is December 21, for me-and I suspect many others-winter begins on Thanksgiving Day. The various farmers' markets seem to end their season with a last burst of colorful produce, and some of it is ideally suited for Halloween and Thanksgiving displays. Little gourds and mini-pumpkins combine with fruit for evocative still-life vignettes-not really cut flowers, but arrangements nonetheless. Small versions of larger fruit, such as 'Lady'

apples and 'Seckel' pears, are ideal for piercing with small wooden sticks to insert into floral foam-based bouquets. Wood swells when inserted into wet floral foam, so wooden "picks," larger than toothpicks, are regularly used for the purpose of anchoring heavy items, like fresh fruit, in arrangements. Yes, using fresh fruit does introduce a source of ethylene gas directly into arrangements, but for the sake of decorating a Sunday brunch table, rules are made to be broken.

Autumn can be more about combining textures than colors. The ornamental grasses are still available with either fluffy or spiky seed heads. The herb garden is rife with foliage in shades of gray with nubby or fuzzy surfaces-the lavenders, santolinas, and sages. Seed cases of Pblomis russelliana (Jerusalem sage) have turned dark brown and lost their leaves, revealing the stark architecture of the whorls on square stems. The viburnums are in their glory, with shiny round berries in sunny yellow (Viburnum opulus var. xanthocarpum), brilliant orange (Viburnum opulus var. compactum), and steel blue (Viburnum tinus). Add to any of these the candy-pink crenalated petals of spidery Guernsey lilies (Nerine bowdenii), blooming exuberantly in the autumn, the final papery zinnias and mellowed hydrangea heads, for arrangements suggestive of

Pumpkins make ideal containers for arrangements marking autumn's holidays. These were designed by students at Clackamas Community College, fall term 2004.
foggy mornings and cool slanting rays of afternoon sunshine. The slow decline of the seasons is nothing if not stately.

## Project: Out of our gourds

Using pumpkins and gourds as containers for floral arrangements is certainly not a new idea, but by using flowers from your autumn garden to fill them, you can make your own artistic statement-something more inventive, and certainly cheaper, than a perfect triangle of jarring orange mini-carnations with an accenting sheaf of wheat. We can do better.

Select a pumpkin of appropriate size for its context. I prefer to have the stump of the cut vine still attached, and although I avoid pumpkins that appear bruised or wounded, I do not mind if their life experience has left them less than symmetrical, or with variations in skin texture, even dimples. A large pumpkin filled with autumn foliage and several kinds of berries makes a "We celebrate Halloween here!" statement on a table outside your front door, surrounded by jack-o'-lanterns down the front steps. Smaller pumpkins make appropriate floral containers for someone stuck in the hospital over Thanksgiving, or for a hostess gift.

When using pumpkins for centerpieces, you should prepare oblong specimens by cutting a shallow slice from whichever side you determine to be the bottom, so it will lie flat on a little platter, and the vine stump can be left in place. Then cut an oval out of the rounded up-facing side, remove the innards, and insert a liner with wet foam, all insuring the final height of the arrangement will not be too tall for its purpose.

Cinderella's coach-shaped pumpkins are another favorite choice for centerpieces. Here are the steps:

1. Clean the outside of the pumpkin.
2. With a sharp knife, cut a circle around the vine stump through the skin and pulp layer, at least 4 inches in diameter. Once you have cut the circle, use the knife to pry up this lid. Do not pull on the stump, as this pressure may break it. Once you have the lid separated from the pumpkin, cut off the pulp and seeds hanging from it, so the bottom is a clean firm surface.
3. Finish cleaning the inside of the pumpkin with a tablespoon, or, if you are hardier than I, with your fingers (eew!).
4. Once the inside is clean, fit a liner with wet floral foam into it. If the lip of the liner rests on the edge of the opening, that is perfect. Do not force it down into the pumpkin.
5. Add water to the liner.
6. Decide where you want the lid to sit, at a jaunty angle near the opening. Take three toothpicks, or three 2-inch-long pieces of 18-gauge wire, and insert half of their length into the pumpkin under where the lid will sit. Using a fair amount of quick force, jam the lid onto the picks or wires so it is firmly attached.
7. Now you are ready to create your arrangement, starting with some foliage to partially cover the foam. Remember, no foam should show when the arrangement is completed.

If you choose to use a large gourd, be aware that the skin will be much harder to cut into than that of a pumpkin. It may take a drill to make a pilot hole for your knife, or, if you are planning to fill many gourds for one event, use a jigsaw. Gourds are tough.

Even though the decaying gourd or pumpkin will emit ethylene gas, such an arrangement will usually last at least a week. And you have a container you can compost!


# Plants for the Cutting Garden 

 Flowers, Fruit, and Foliage
## CULTURAL AND CONDITIONING REQUIREMENTS FOR HUNDREDS OF

 PLANTS, PLUS TIPS FOR PURCHASING THEM AT THEIR BEST
## KEY TO PLANT INFORMATION

USDA plant hardiness zones are based on average annual minimum temperature. To see the U.S. Department of Agriculture Hardiness Zone Map, go to the U.S. National Arboretum Web site at http://www.usna.usda.gov/Hardzone/ushzmap.html.

## Part of plant used

墨 flowers, fresh and/or dried
(4) foliage, fresh and/or dried

5 fruit, berries, seeds, or seedpods, fresh and/or dried

Height: height of plant at harvest
Fragrance: described if present, not shown if negligible or no fragrance

Garden availability: bloom time or ideal cutting season(s)

## Culture for cutting

PS: partial shade
FS: full sun
DS: dry soil tolerated or preferred
MS: moist soil tolerated or preferred
AvS: average garden soil, annually amended with organic matter, reasonably well drained, with a pH of 6.4 to 6.7

Harvesting, conditioning, vase life
AM: harvest in the morning
AT: harvest any time of day
SC: standard conditioning, meaning removing all underwater foliage and then soaking in deep cool water or preservative solution in a cool dark place for a period of not less than one hour and up to overnight

SC (woody): standard conditioning for woodystemmed plants, meaning removing all underwater foliage and exposing the cambium either by splitting the stem vertically after it is cut at an angle or by shaving off the outer bark for 1 to 2 inches above, but adjacent to, the angled cut (not by smashing the stems with a hammer), and finally giving a good soaking in water as in standard conditioning

SC-WW: condition in warm water rather than cool water

PF: preservative ( P ) and floral foam ( F ) can be used, as they are tolerated by the flowers and/or foliage

NP: no preservative, as the plant does not tolerate preservative solution

NF: no foam, as the plant does not last well when inserted into saturated floral foam

Acanthus mollis bear's breech
hardy perennial zones 7-10
Part of plant used: 墨 fresh, dried
Height: 5 ft. +
Flower stems, resembling delphiniums in general form (tall upright spires rising well above their foliage on terminal racemes), composed of tubular white flowers surrounded by two tough papery bracts, green with purple tint. Bracts persistent, making stems easy to dry.
Garden availability: summer
Culture for cutting: PS, MS
Shiny, rich green lobed leaves may sunburn in exposed sites without enough water. In zones 7-8, hard winters may kill the plant to the ground; deep roots will rejuvenate. Evergreen in mild winter areas.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when more than half of the true flowers (the white part) are open. Acanthus flowers are long lasting in a vase, to three weeks or more (only slightly less in foam). The dramatic presence is seen to best advantage when used at full height.
Buying tips: Purchase when the white true flowers are soft to the touch, not papery or starting to shrivel. Make sure the flower stems are firm.

## Achillea yarrow

A. filipendulina, A. millefolium
hardy perennial zones 3-9

Heicht: 2-4 ft.
Fragrance: sharp, herbal
Yarrow produces flower stems carried above mounds of ferny-textured foliage that can be silver-gray ('Coronation Gold', 'Gold Plate') to green (Achillea millefolium cultivars). Flowers make dense corymbs, flat topped or slightly dome shaped, with florets like tiny daisies. Cultivars 'Coronation Gold' and 'Gold

Plate' are brilliant yellow aging to gold, turning brown if left uncut. Acbillea millefolium cultivars (such as 'Cerise Queen', 'Paprika', 'Summerwine', and 'Terra Cotta') rebloom if their old stems are removed. Achillea millefolium stems tend to branch, increasing their versatility. Achillea filipendulina forms produce a larger, bolder, solitary corymb.
Garden availability: late spring through autumn Culture for cutting: FS, DS

Yarrow is easily grown from seed.
Harvesting, conditioning, vase life: AM, SC, PF Harvest yarrow when the color is bright and all of the tiny florets are fully open, especially if you plan to dry it. Handle with gloves if you have sensitive skin. Lasts seven to fourteen days in fresh water, somewhat less in foam.
Buying tips: Purchase when flower color is bright and stem foliage appears fresh. Shriveled stem foliage indicates late harvest or long postharvest storage.

Aconitum monkshood, wolf's bane A. xcammarum 'Bicolor', A. carmichaelii, A. napellus
hardy perennial zones 3-7 (A. napellus zones 5-8) Part of plant used: fresh Height: 4-6 ft. All forms are poisonous in all their parts. The inflorescence can be a branched panicle (Aconitum $\times$ cammarum 'Bicolor', A. carmichaelii) or a tight raceme (A. napellus) resembling its relative, the delphinium. The best forms are rich purple-blue, with florets comprised of a hooded upper sepal brooding over an otherwise delphiniumlike flower. In $A$. xcammarum 'Bicolor' the florets are white, outlined in blue. Buy plants in bloom to be sure you are getting a strong blue border; this will vary if plants have been grown from seed.
Garden availability: summer into autumn, with a crop guaranteed from midsummer through frost if you grow several species and/or cultivars
Culture for cutting: PS, MS
Harvesting, conditioning, vase life: AM, SC, PF


Acanthus mollis



Achillea millefolium


Harvest monkshood when the bottom three to five florets have opened. Aconitum lasts longer in arrangements than delphinium-expect ten daysand is a good substitute when a dark blue spire is wanted. Handle with gloves if you have sensitive skin.
Buying tips: If the lower flowers are starting to shatter, do not purchase. Once such shattering starts, the end is near. If the stems are wrapped in plastic, check the water for sepals floating there or notice if spent sepals are loose in the wrap.

## Adiantum maidenhair fern A. formosanum, A. pedatum

perennial fern zones 8-11
Part of plant used: fresh Height: $2-3 \mathrm{ft}$.
Maidenhair fern is an elegant addition to arrangements whether casual or formal; especially fine in wedding work, far less dated than Asparagus setaceus. The fronds are broadly branched, bright green; the stems and twiglets are blackest black. The char-treuse-on-black tracery gives this Victorian parlor plant a distinctly modern sensibility. In North America, garden-grown plants of our native maidenhair, Adiantum pedatum, can also be used in floral work, but this fern is less long lasting.
Garden availability: year-round
Culture for cutting: PS, MS
Adiantum formosanum can be wintered in a cool greenhouse in cooler climates, keeping the fronds from being disfigured by harsh weather. This is a woodland fern that likes mist in the air.
Harvesting, conditioning, vase life: AM, SC (see below), NP Harvest fronds when they are unfurled and the leaf segments are papery but still bright green and soft to the touch. There is debate over whether this fern actually drinks water through its stem after it is cut. If you must store it, loosely wrap your fronds in black plastic or cover the whole bucket of cut fern
with a plastic bag, preserving a humid environment around the segments. Once arranged, fronds last up to six days, longer if you mist them once or twice a day.
Buying tips: Avoid stems with leaf segments that are dry and brown on the edges or with margins starting to roll.

## Agapanthus campanulatus lily-of-the-Nile

hardy perennial zones 7-10
Part of plant used: fresh, fresh
Нeight: 3 ft. +/-
Flowers are comprised of an umbel of blue trumpets (there is a white form) on individual stalklets of even length, usually 3 to 4 inches. Umbels are composed of dozens of florets, rarely all open at once. My favorite cultivar is Agapanthus campanulatus 'Storm Cloud', a lustrous dark blue.
Garden availability: midsummer to early fall
Culture for cutting: FS, DS
Agapanthus grows from thickened roots (often lumped with bulbous plants); protect from excessive winter rain, which causes root rot.
Harvesting, conditioning, vase life: AM, SC, NP Harvest agapanthus stalks when the first florets start to open. Considerable debate exists over the efficacy of floral preservative. My feeling is that clear water kept fresh is best. Because not all florets open at once, it is necessary to groom the umbels, pinching off spent flowers. The whole umbel should last two weeks.
Buying tips: Agapanthus stored too long drops its buds. Do not buy stems presented in mesh sleeves; these prevent us from seeing if buds are dropping. Nor should the umbels show a majority of peduncles (flower stems) that have lost their flowers or buds.

## Agrostemma githago corn cockle

hardy annual
Part of plant used: 恶 fresh Height: 3-4 ft.
Poisonous in all of its parts. Blossoms are solitary, five-petaled up-facing trumpets, bright rose pink or, less often, white. Stems branch readily, with linear silver-gray leaves. All parts are downy up to the calyx. The flowers look fragile but are not. Each pink flower has a lighter throat, showing a pattern of silver markings in the eye zone. Does not dry well.
Garden availability: late May to late August from one early spring sowing (before the last frost), if deadheaded

## Culture for cutting: FS, AvS

This is a common component of wild European meadows and fallow fields. It germinates enthusiastically in freshly cultivated grain fields, hence the common name.
Harvesting, conditioning, vase life: AM, SC, NF Harvest when at least two flowers are open per branch. Commercial growers pull up the whole plant at harvest rather than just taking side branches that are in flower. Home growers get more flowers per plant by taking off the lateral stems as they flower, waiting to pull up the entire plant until there are no further flowers to come. Although the petals seem thin, they are amazingly sturdy, lasting more than ten days in water. This is a gravely underrated cut flower.
Buying tips: Check that the foliage is silvery and fresh. Storage in plastic wrap at cold temperatures produces shriveled and blackened leaves.

Alcea hollyhock
A. rosea, A. rugosa (syn. Althea rugosa)
biennial (A. rugosa is a short-lived HP)
zones 3-9
Part of plant used: fresh Height: $5 \mathrm{ft} .+$ Hollyhocks are flared trumpets of white, yellow, pink,


Alcea rosea
rose, near-black burgundy, and, rarely, peach. Double forms, looking like tissue-paper constructions, have the same range of colors. Terminal racemes of 3-inch-wide, short-stalked flowers are interspersed with smaller versions of the basal leaves.
Garden availability: mid-June through July or early August
Culture for cutting: FS, DS
Both biennial and perennial hollyhocks are susceptible to leaf rust (a fungal disease), which can be kept under control by removing all basal foliage once the flower stalks are more than 3 feet tall. Destroy discarded foliage; do not compost it. Alcea rugosa,
in butter-cream yellow, is more perennial and rust resistant, with a productive life of three years before the plant's base becomes woody. If you plant mixed colors of the biennial forms, you may have seedlings of interesting intermediate colors.
Harvesting, conditioning, vase life: AM, SC, PF Harvest hollyhocks when the bottom third of the florets have opened. Once the stem is cut, more florets will open; the entire stem should last ten days.
Buying tips: Beware of dropped buds and/or spent flowers.

## Alchemilla mollis lady's mantle

hardy perennial zones 4-8
Part of plant used: fresh Height: 2 ft . + Lady's mantle, with its frothy inflorescence of tiny chartreuse flowers, is used as a filler. Do not underestimate the value of the downy, scalloped leaves with their pinked edges. These make a lovely collar for a nosegay-style arrangement.
Garden availability: mid-May through June
Culture for cutting: FS, MS
Although lady's mantle will bloom in partial shade, the flower stems are more abundant and taller in the sun. Needs ample water to prevent sun-scorch on the foliage. Reseeds abundantly. If you resent the seedlings, keep the flowers cut for your vases. After flowering the whole plant can be sheared to the ground and will produce a new crown of foliage with scant rebloom.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when fully open. The bubbly flower heads can last two weeks in water or foam. This is my favorite filler for roses.
Buying tips: Turns toasty brown when its long life is over. Check the stem foliage to make sure it is uniformly green; do not buy stems that seem limp.


Allium 'Purple Sensation'

Allium ornamental onion
A. aflatunense, A. caeruleum, A. christophii, A. giganteum, A. moly, A. nigrum (syn. A. multibulbosum), A. 'Purple Sensation', A. tuberosum, A. unifolium
hardy perennial bulb zones 4-10 (most species)
Part of plant used: fresh, dried
Height: 8-48 in.
Fragrance: Cut end smells like onion; flowers sometimes have a light sweet scent (Allium unifolium).
All the alliums are technically edible, but ornamental sorts are grown for the flowers. Blossoms of these and the culinary species can be dried if harvested when newly open. In most forms the flowers are a nearly spherical globe of tiny florets. Colors vary from white to pink and purple, yellow, and blue (Allium caeruleum).

Garden availability: from April (Allium cbristophii) through September (A. tuberosum), depending on the species you are growing
Culture for cutting: FS, DS to AvS
Alliums resent excessive watering after they have flowered.
Harvesting, conditioning, vase life: AM, SC, PF Harvest allium when the flower head is one-third to one-half open. Dry immediately or use fresh. Because allium will make the water smell like you live in a diner featuring grilled onions, change the water daily or use floral preservative to suppress the odor. Keeping the water clean is key to longevity for all alliums. Vase life ranges from ten days to three weeks.
Buying tips: Buy allium at the same stage at which you would pick it if you were growing your own. Avoid buying stems that have become stinky-these have not had proper care and will not last well.

## Alpinia purpurata Tahitian ginger

evergreen perennial
Part of plant used: 墨 fresh
Fragrance: flowers not fragrant; roots fragrant, eaten as a spice
The flowers of Tahitian ginger are composed of elongated torches of red or pink bracts, 6 to 12 inches long; the small true flowers emerge from between the petal-shaped bracts and are white. The stems have small versions of the leaves.
Garden availability: nearly all year, with blooms slowing during periods of cool nighttime temperatures
Culture for cutting: FS/PS, AvS (add humus)
In humid tropical gardens, Tahitian ginger needs rich soil and ample water.
Harvesting, conditioning, vase life: AM, SC (dunk), F, NP
Ginger should be dunked headfirst for fifteen minutes in room temperature water when it is shipped dry. All stem leaves should be removed, as they will


Alpinia purpurata
not last nearly as long as the flowers, which should last for more than two weeks in plain water or foam. Buying tips: Avoid stems with bracts that are browning at the edges or generally look dry. Ginger lasts best in distilled water.

Alstroemeria Peruvian lily
A. aurea, A. ligtu hybrids
hardy perennial zones 7-10
Part of plant used: 墨 fresh Height: $3 \mathrm{ft} .+$ Members of the genus Alstroemeria are not true lilies. They produce casual clusters of flowers atop stems


Alstroemeria aurea and hybrids
covered with lance-shaped gray-green leaves that roll over, exposing their bottom surfaces. The inflorescence is a loose cluster of four to eight six-sepaled flowers ranging in color from white to yellow and gold, pink and peach, orange, brick red, and lavender to magenta-purple. The base color is accented with tiny brushstrokes of burgundy, although in pale colors this detailing can be yellow instead. New color forms are constantly flowing into the market.
Garden availability: late May through autumn, with proper harvesting
Culture for cutting: FS, AvS
Alstroemeria are less invasive if the soil occasionally becomes dry. Roots are tuberous and brittle; the plants resent frequent moving. Buy the biggest plant you can afford, then try not to change your mind about where you place it.
Harvesting, conditioning, vase life: AM, SC, PF Select Peruvian lily stems for cutting when one or two florets are open and all primary buds show color. Harvest stems by yanking them firmly out of the ground. This reveals about 6 to 8 inches of
whitened subterranean stem. The jerking of the stem tells the roots a stem has been removed; the roots will replace it. Cutting the stem does not send the same message, and with plants where all harvesting is done by clippers, there is little rebloom. Remove all of the foliage below the flower cluster. The stem foliage does not last nearly as long as the flowers. If you keep the water fresh, all secondary buds in the cluster will open, and the entire stem will last as long as four weeks.
Buying tips: Avoid stems with foliage left on and turning brown. Some misguided growers, notably in South America, think they improve the size of the primary flower if they remove the secondary buds from the cluster (called disbudding), but the difference in size from a nondisbudded flower is practically nil. The stem you buy may last only a week or two if the secondary buds are absent. Do not buy alstroemeria unless all of the secondary buds are visible on the stem. These open if their environment is kept fresh, allowing the stems to last "a freakishly long time" (to quote Amy Burbach, owner, Laurelhurst Florist).


Amaranthus caudatus

Amaranthus caudatus amaranth, love-lies-bleeding
annual
Part of plant used: fresh, dried Height: 3-6 ft.
Amaranth has either upright or draping stems topped by panicles of tiny flowers forming an erect or tasseled inflorescence. Flowers can be red (love-liesbleeding), green (Amaranthus caudatus 'Viridis') or warm brown (A. caudatus 'Hot Biscuits'). Flowers can be dried but become quite brittle, so in making wreaths it is best to use the flowers fresh, allowing them to dry in situ.
Garden availability: for plants grown from seed, early June through autumn

Culture for cutting: FS, AvS
Amaranths are easily grown from seed. Keep the plants well watered during hot weather to retard seed production and ensure continued flowering.
Harvesting, conditioning, vase life: AM, SC, PF Love-lies-bleeding is an arresting flower whether in its erect or draping form. Harvest any time before the tiny seeds start to drop. The fresh flowers should last ten days or more.
Buying tips: If the foliage has been removed and the flower stems are limp (as opposed to draping but firm), they have been stored too long. Warm water may revive them.

## Ammi majus false queen anne's lace

hardy annual
Part of plant used: fresh Height: 3-4 ft.

## Fragrance: slight

This graceful annual filler flower should not be confused with the invasive biennial Daucus carota (queen anne's lace, wild carrot), which is also not a North American native. Ammi majus has creamy florets carried in airy branched umbels. The species A. visnaga has a denser, and greener, umbel.

Garden availability: starting in June and continuing, if early sowing is done when the ground is just above freezing and successive sowings are continued to keep the crop coming, as the plants will not rebloom once they have been cut
Culture for cutting: FS, AvS
If I can grow this from seed, anyone can. Plant in situ. A row of this in the cutting garden is abundantly useful.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the primary umbel has been open for several days and the side branches are starting to open. This stem should last ten days in clean water. Ammi lasts much longer than wild carrot. If, as you harvest ammi, you notice the primary umbel is starting to shed petals, disbud it, encouraging the side shoots to open quickly. However, side
shoots taken off of the main stem to use in shorter bouquets should be fully open, as they will not open properly on their own.
Buring tips: Ammi majus is now grown in South America, making it randomly available year-round. It is shipped in plastic sleeves; check to make sure there are no signs of shedding in the sleeve or the storage water. $\operatorname{Limp} A$. majus responds quickly to a perk-up solution of warm water with floral preservative.

Ampelopsis brevipedunculata porcelain-berry vine
woody deciduous shrub (vine)
zones 5-8
Part of plant used: fresh Height: 15 ft . +
Clusters of this grape relative are unbelievably colorful. Each round berry is about $1 / 4$ inch in diameter, and the bunches contain a dozen or more. Individual berries progress as they age from pale greenaqua through blue to navy blue and bright purple; all colors appear in a cluster at the same time. In arrangements, viewers will want to touch the berries to make sure they are real.
Garden availability: late August through October
Culture for cutting: FS/PS, AvS
With porcelain-berry vine, the more sun, the better the crop. I grow this plant twining into a sweet cherry tree, making the most of bee pollination. In some areas this vine can be invasive. I find that foraging birds prevent unwanted seedlings from appearing. Birds love to eat the berries, so plan to protect your crop if you do not want to share. The vine clings by tendrils, as grapes do, and is heavy.
Harvesting, conditioning, vase life: AM, SC, NP, NF
Stems of this vine containing berry clusters are typically used in 2-to-3-foot lengths. Cut stems last seven to ten days in clean water.
Buying tips: Rarely seen for sale. Cut stems of berries that have become dull have been stored too long at cold temperatures.
Amsonia hubrechtii blue star flower
hardy perennial zones 5-9
Part of plant used: fresh Height: 3 ft .
Clusters of small pale blue florets are carried in panicles. A long-lasting and handsome filler.
Garden availability: May, June, and July; stems left on the plant will produce slender green seedpods, which are also decorative when used fresh.
Culture for cutting: FS, AvS
The plants become drought tolerant once established. Easily propagated from seed.
Harvesting, conditioning, vase life: AM, rinse (see below), NF
All amsonias have milky sap; be careful handling the freshly cut stems if you have sensitive skin. Store separately when the flowers are first cut, then move to fresh water once the milky sap has stopped oozing (after half an hour). In fresh water the flowers last ten days.
Buying tips: Rarely seen for sale-too bad, as there are not many pale blue fillers, and this is a good one.

## Anemone coronaria DeCaen Group windflower, poppy anemone

hardy perennial (tuber) zones 8-10
Part of plant used: fresh Height: to 18 in.
Single to semidouble daisylike solitary flowers with plump petals and green or black centers. Colors include white, true red, medium to dark blue, deep purple, and seed-grown variations, some having a picotee edge. Flowers have wonderful substance, and can be up to 3 inches across. These are jolly flowers.
Garden availability: Spring, anywhere from April through June. Tubers can be held in cold storage and forced into bloom to extend their season.
Culture for cutting: FS, DS (sandy)
Grows from an irregular tuber that should be soaked in warm water for several hours before
planting. Grow where the soil does not freeze deeply, or in a frost-free cold frame.
Harvesting, conditioning, vase life: AM, SC, PF Anemones have foliage-free stems with a greenfringed bract below the flower, making them easy to harvest. Pluck the blossoms when they show color but have not yet opened flat. Place in warm water if you need them to open quickly.
Buying tips: In dark-centered forms, watch for deposits of pollen dusting the bract, a clear indication of age. Also, the petals should appear thick, not sheer.

## Angelica gigas angelica

biennial zones 4-9
Part of plant used: ${ }^{\text {sed }}$ fresh Height: 4-6 ft.
Striking flowers are tight-domed umbels of maroonpurple florets with matching dark stems and buds. Leaves are bright green.
Garden availability: late summer into October
Culture for cutting: FS, AvS
Grows easily from seed.
Harvesting, conditioning, vase life: AM, SC, PF
Harvest when the primary flower umbel has been open for several days and the side shoots are also starting to open. Lasts for more than ten days. Great in big arrangements, or place many stems in a wide, tall glass cylinder so the handsome stems become part of the arrangement.
Buying tips: Rarely seen for sale-too bad, as this is a quite long-lasting and theatrical cut flower.

## Anthriscus sylvestris 'Ravenswing' cow parsley

hardy perennial (some may claim that the plant is biennial, but my original plant is now nine years old) zones 7-10
Part of plant used: fresh Height: 3 ft . +
Closely related to the salad herb chervil. Nori and Sandra Pope at Hadspen Garden Nursery in England noticed dark-leafed seedlings, selecting them
for their lacy, milk chocolate-colored foliage and stems, topped by Ammi majus-like umbels of cream and pale-pink florets.
Garden availability: May through June; foliage not as long lasting as flowers
Culture for cutting: FS, AvS
Although the plant tolerates shade, the foliage gives best effects and the flowers are more prolific when grown in full sun. Remove any seedlings with lightgreen foliage (about 25 percent of them will be green). Wonderful in cottage gardens interplanted with old roses and trumpet lilies. Easy to grow from seed; put a row in the cutting garden.
Harvesting, conditioning, vase life: AM, SC, PF It stands to reason that if a plant makes a great filler in the garden, it will be equally divine in arrangements. At harvest, cut the flower stem without damaging the separate basal foliage so your plant stays strong through the summer.
Buying tips: Buy young plants or grow from seed. You will not find this for sale as a cut flower, unless a precocious florist is growing her own crop. If so, this is a florist you should patronize exclusively.

Anthurium andraeanum flamingo flower
evergreen perennial zones 10-12
Part of plant used: 黑 fresh Height: 2-4 ft.
Showy flower composed of a brightly colored glossy spathe, usually with a pink, yellow, or cream spadix, showing the most color of any arum. The spathe may be heart shaped, similar to a butterfly wing, or cupped like a lone tulip petal, in colors ranging from red to burgundy, terra cotta, peach, white, purple, and all shades of pink; any color might have green markings, paint spatters, outlines, or highlighted veins. Flower is held on a strong, slender, naked stem.
Garden availability: flowers during any warm weather, slowing if nights are cool
Culture for cutting: FS/PS, AvS (add humus)
Needs rich soil and a consistently humid environ-


Angelica gigas


Anthriscus sylvestris 'Ravenswing'


Anthurium andraeanum,
arranged by Robin Miller
ment. In drier areas with ample warmth, it needs regular water. Does not tolerate frost.
Harvesting, conditioning, vase life: AM, SC (dunk), F, NP
These flowers are shipped all over the world. After unpacking the flower, dunk it in room temperature water for fifteen minutes before recutting the stem and standing it in a vase. Lasts more than two weeks in water or foam.
Buying tips: The glossiness of the spathe is your guide. It should look like patent leather. Blemishes should be avoided.

## Antirrhinum majus

snapdragon
hardy annual
(can be a short-lived perennial in zones 5-7)
Part of plant used: 量 fresh Height: $3 \mathrm{ft} .+$ -
Fragrance: light fragrance reminiscent of grape KoolAid powder notable in the most vivid colors, the reds and burgundies
Snapdragons feature handsome spears of two-lipped flowers, which get their name from the way the flower's mouth can be made to open and shut when pinched at the corners. Colors encompass anything but blue or royal purple and include bicolors. The Rocket Series makes tall, sturdy cut flowers, available in most of the common colors.
Garden availability: late May through summer and fall
Culture for cutting: FS, AvS
Cool nights produce stronger stems with more florets per stem. Hot weather stems are weaker, the flowers more sparse. Plants need regular feeding with "blossom booster" fertilizers. When its base becomes woody, the plant is nearing the end of its productivity and should be replaced.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when a third to a half of the florets are open. Keep the water clean. Cut stems should last ten days. All but the smallest flower buds open after


Antirrhinum majus
cutting, although the florets will be paler than those opening in the garden.
Buying tips: Avoid stems when the lower, open florets are starting to collapse and shed. Pale or yellowing stem foliage and poorly colored florets indicate excessive storage.

Aquilegia McKana hybrids columbine
hardy perennial zones 3-9
Part of plant used: 黒 fresh Height: 2-3 ft.
Columbine comes in every color and combination of


Aquilegia McKana hybrids
colors. There are double columbines, but members of the McKana Group have large single flowers in a wide array of colors, on branching stems producing five to twelve flowers each. This hybrid strain boasts longer spurs on the petals. Aquilegias do have interesting seedpods, reminding me of jesters' caps, and these dry well.
Garden availability: midspring (in my zone 8 garden, typically late April) through midsummer, usually for six weeks

## Culture for cutting: PS/FS, MS

Aquilegias are woodland and meadow wildflowers. Two North American species have contributed to the complex genetic mix of the McKana Group. Vigorous and adaptable.
Harvesting, conditioning, vase life: AM, SC-WW, NP, NF

Large-flowered columbines are surprisingly tough cut flowers and tolerate packaging and shipping better than we might expect. They rehydrate easily in warm water. Harvest the stems when only one or two flowers are completely open and the rest of the buds are still green, ensuring a vase life of seven to ten days for the whole stem.
Buring tips: Avoid stems with the oldest flowers shedding. If stems seem uniformly limp, they have not been sufficiently rehydrated after shipping.

## Arbutus unedo strawberry tree

woody evergreen shrub
zones 7-9
Part of plant used: fresh fresh
Height: $5 \mathrm{ft} .+$
Handsome medium-green smooth leaves can be harvested as a long-lasting foliage any time of year except when the growth is immature. Gets its common name from the cheerful fruit, round ( $3 / 4$ to 1 inch in diameter) and nubby-textured, yellow when immature, red when ripe. Clusters of fruit tend to show both colors, and the whole plant looks like a party as the fruit ripens.
Garden availability: foliage year-round, fruited branches from late summer into winter
Culture for cutting: FS, AvS (acidic)
Shelter from drying winter winds, as wind-scorch will disfigure the leaves.
Harvesting, conditioning, vase life: AM, SC (woody), PF
The foliage stems of Arbutus unedo can last more than three weeks in water, as can stems with fruit. Flowers are similar to Pieris japonica but picking them removes future fruit.
Buying tips: Make sure fruit is firm and leaves are shiny. Rarely seen at wholesale markets for reasons unknown to me, as this is a common and forgiving landscape plant.
Armeria maritima sea pink, sea thrift
hardy perennial zones 3-9
Part of plant used: fresh Height: 12 in.
Armeria is often seen in rock gardens because of its dense, mounding growth habit. Flowers: a spherical inflorescence composed of $1 / 4$-inch-wide florets, each cup shaped. Colors: white to pale, bright, or dark pink. Each inflorescence is 1 to $1-1 / 2$ inches around.
Garden availability: Late spring and summer; harvesting prolongs the flowering period.
Culture for cutting: FS, DS
Armeria adapts well to the front of a mixed perennial border. Grow a row in a cutting garden. The cultivar 'Bees' Ruby' is the best for cutting, but all variants of the species are good, with flower scapes held well above the foliage.
Harvesting, conditioning, vase life: AM, SC, NF Cut stems of armeria, which are easy to harvest because they are leafless, when about half of the tiny florets are just open. Cut each stem as long as possible. Great in nosegays. Vase life is seven to ten days.
Buying tips: Check that each floret is fresh. Stored flowers show browning florets while there are still unopened buds, causing the whole to look shabby. Sea thrift is sometimes mistaken for allium by poorly trained staff. The cut stem does not smell like onion, and the flower head, while truly round, is much more dense than that of allium.

## Artemisia ludoviciana 'Valerie Finnis' <br> mugwort

hardy perennial zones 4-9
Part of plant used: fresh, dried Height: 30 in.
Fragrance: The crushed foliage smells pleasantly of lavender. Other artemisia smell medicinal or even repulsively of tar.
There are many, many varieties of artemisia available. For cutting I prefer Artemisia ludoviciana 'Valerie Finnis', a variety distinguished from the species by
having a finer fragrance and sharply cut margins on its bold silver leaves. It is named for the late Valerie Kinnis, a remarkable teacher at the Waterperry Garden School in Oxfordshire, which has an impressive display garden and nursery.
Garden availability: late May until the plant goes dormant in late fall
Culture for cutting: FS, AvS
Spreads somewhat vigorously, although this variety does not compete successfully with other species of artemesia in my experience. As it nears its mature height, it will try to bloom, but the inflorescence is unattractive and most gardeners cut the flower clusters off, making bushier plants and more stems of useful leaves.
Harvesting, conditioning, vase life: AM, SC, PF Although it will wilt at the tips when first cut, this artemisia will perk up if given a long drink of deep cool water (minimum of four hours) in a dark place. Some varieties of artemesia have a milky sap, but this species has a rust-to-gold-colored sap that does not bleed out. Avoid contact with the sap if you have sensitive skin. Lasts ten to fourteen days in water or foam.
Buying tips: Rarely seen for sale, as growers/wholesalers do not realize how easy it is to rehydrate the cut stems. Best if shipped in water.

Arum italicum 'Pictum' lords and ladies
hardy perennial zones 7-9
Part of plant used: fresh Height: 18 in.
Arrow-shaped leaves of this potentially invasive ground cover are marbled with pale green and cream veining. Effective used with tropical flowers. In late summer and fall the stems show their bright orange densely packed fruit. Fruit-bearing stems are not strong; they are fine for vase arrangements but usually too weak to insert into firm grades of foam. The flowers are nondescript. No part of this plant is edible.

Garden availability: January until the plant goes dormant in midsummer and develops fruiting stems

## Culture for cutting: PS, MS

Arum italicum 'Pictum' spreads vigorously. Do not plant it if you do not have a confined area for it. More leaves are produced in shade, but more flower stems (and thus berry stems) are produced with more light. This is handsome foliage, so I vote for more shade.
Harvesting, conditioning, vase life: AM, SC, NF Leaves should be cut with as much of their stalk as possible and stored in cool water until used. Vase life is seven days or slightly longer. Fruited stems are not as long-lived when cut.
Buying tips: The leaves are easily torn by plastic storage sleeves, so this arum is rarely seen at markets.

Aster Michaelmas daisy
A. novae-angliae, A. novi-belgii, A. pilosus var. pringlei
'Monte Cassino'
hardy perennial zones 4-8
Part of plant used: fresh Height: $3 \mathrm{ft} .+$
The asters in the Michaelmas daisy group are used for their multibranched stems of tiny (up to 1 inch in diameter) daisy-shaped flowers. These take the place of more common filler flowers, such as baby's breath (Gypsophila paniculata), both in the garden and in vases. In Aster pilosus var. pringlei 'Monte Cassino' the flowers are white; other named forms may be purple to lavender, periwinkle blue, pale pink, and vivid rose.
Garden availability: late summer through autumn Culture for cutting: FS, AvS

Asters tending to get tall and floppy can be staked or cut back by a third of their height in early June; for floral design, long stems are better. The mounds of foliage emerge in March, and flower stems start elongating by mid-May.
Harvesting, conditioning, vase life: AM, SC, PF Harvest 'Monte Cassino' when at least four or five of the terminal daisies are open on each branchlet.


Aster pilosus var. pringlei 'Monte Cassino'

If there are lateral branchlets that must be removed because they would be underwater, set them aside for use in short bouquets.
Buying tips: If buying a bunch of five to ten stems in a plastic sleeve, observe the lower stems carefully: are the leaves brown or worse? Are the central discs of the little daisies turning brown instead of being bright yellow? 'Monte Cassino' starts to look wretched quickly if it is not fresh. When you are buying single stems, make sure the leaves on the main stem are still green.


Astilbe 'Fanal'

## Astilbe hybrids

hardy perennial zones 4-9
Part of plant used: fresh Height: 18-24 in.
Fragrance: light, pleasing scent
Astilbe is used for the foamy inflorescence of teensy florets carried by the thousands on wiry robust stems. The colors can be creamy white, pale pink to peach, rose, lavender-rose, and true red. It has a reputation as a great cut flower and is often seen on the covers of bridal magazines because of its soft texture.
Garden availability: late May through August, depending on variety
Culture for cutting: PS, MS (acidic)

In boggy soil astilbe can tolerate full sun.
Harvesting, conditioning, vase life: AM, SC-WW, NF
Harvest when three-quarters of the inflorescence is open. Picking the stems earlier in their development contributes to chancy results, which you may experience anyway. (I have to admit astilbe has me somewhat flummoxed.) About half of the time, if astilbe is not absolutely fresh it starts to go limp at the tips of each branchlet and is very hard to revive. If astilbe must then be stored, cover completely in a plastic bag to retain humidity around the flowers. Even fresh picked, it may last seven hours or seven days.
Buying tips: What can I tell you? It is a gamble. If the color is bright and the texture fluffy, give it a chance. If it has leaves that are shriveling, the color seems dull, and tips are droopy, give it a miss. Astilbe can be purchased forced into bloom out of season, but its longevity as a cut flower is compromised.

## Astrantia masterwort

A. major, A. maxima
hardy perennial zones 4-8
Part of plant used: 黑 fresh, dried Height: 2-3 ft.
Masterwort flowers are little tufted florets surrounded by serrated bracts. Each branched stem will have half a dozen or more of these engaging little flowers. The common color is white with a greenish hue. New cultivars are shades of pink to red, with great variability in seed-grown plants. Astrantia maxima is taller than the hybrids of Astrantia major and always the color of Pepto-Bismol, a strangely attractive chalky pink. The flowers feel papery to the touch. I wonder that they are not more often seen in mixed dried bouquets.
Garden availability: continuing from late May for as long as the plants are deadheaded
Culture for cutting: PS/FS, MS


Astrantia major 'Hadspen Blood'

Flower production increases dramatically in full sun with ample water. The plants produce a low mound of foliage that the clean flower stems rise well above. Good forms of Astrantia major to grow are 'Buckland', 'Hadspen Blood', 'Ruby Wedding', and 'Shaggy' (syn. 'Marjorie Fish').
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when the primary flowers are completely open and the secondary flowers are well on their way. Cut the flower stems down into the mound of foliage, giving yourself as much length as possible. In clean water and preservative, astrantia will last up to two weeks. Holds well for several hours out of water in head wreaths, corsages, boutonnieres, and similar festive pieces.
Buying tips: If any small leaf-bracts are left on the stem, make sure they are not yellowing. Note whether the stems are presented for sale in clean water.

Atriplex hortensis orache
hardy annual
Part of plant used: © fresh Height: 3-4 ft.
Although orache is typically used as a food plant (for its spinachlike leaves), in the late 1980s the inflorescence became available as a cut flower, adding a sense of wild informality to summer bouquets. Because it is closely related, both genetically and physically, to the weed known as "curly dock," this was one of the first plants I and my comrades referred to as Roadsideia vulgaris until we knew what it was. The inflorescence can be burgundy or dull chartreuse in color, usually picked when just forming its seeds, which are $1 / 4$-inch-round fleshy discs. The Plume Series is a mix of the two colors. I am not describing this very well, but it is the coolest stuff.
Garden availability: June through frost if plantings are staggered
Culture for cutting: FS, MS

The seeds of this species can be planted in the fall for wintering over or in early spring before the last frost date.
Harvesting, conditioning, vase life: AM, SC, PF We actually harvest this plant in the fresh-seedpod state rather than while it is truly in flower. Cut the stem as long as you need it to be. Lasts up to three weeks in clean water.
Buying tips: Avoid stems with discolored foliage and seed discs shedding.

Aurinia saxatilis perennial alyssum, basket-of-gold
hardy perennial (ground cover) zones 4-8
Part of plant used: fresh Height: 12 in.
Fragrance: mild but sweet, similar to its annual relations
There is hardly a yellower yellow anywhere in the plant world than the sulfur clusters of this lax ground cover. Perennial alyssum has dense panicles of tiny five-petaled florets, the sum total being an inch across and as deep, on stems that continue to lengthen as they flower.
Garden availability: spring through midsummer
Culture for cutting: FS, DS
Pruning keeps the plants from becoming leggy; harvest with impunity. Often seen draping down retaining walls.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest with as much length as you can. Choose flower clusters half open. These last seven days in peppy little nosegays.
Buying tips: Rarely seen for sale, except already added to premade nosegays at farmers' markets.

## Ballota pseudodictamnus ballota

woody evergreen shrub zones 7-9
Part of plant used: fresh Height: 2 ft .
This "petting zoo" plant is fuzzy in all of its parts,
except for the minute and totally inconsequential flowers. Tremendously underutilized in arrangements, the light celadon green ballota has creamy fuzz overlaid on its nappy stems, nappy rounded leaves, and nappy calices.
Garden availability: any time of year the plant is in active growth
Culture for cutting: FS, AvS
Ballota forms a lax mound, and its plush covering tells you it is well adapted to hot sites. This horehound relative looks right at home in an herb garden.
Harvesting, conditioning, vase life: AM, SC (overnight), PF
Fresh new growth quickly goes limp at the tips after harvesting, so condition overnight. Responds rapidly to any amount of pruning, so cut the stems as long as you need them to be. Lasts seven to ten days.
Buying tips: Rarely offered for sale-folks do not know what they are missing.

Bellis perennis English daisy
hardy perennial zones 4-8
Part of plant used: 黑 fresh Height: 10 in.
Frag rance: light
English daisies are ideal for short, nosegay-style arrangements. These can be simple daisies with a yellow central disk or very double buttons ( $1-1 / 4$ to 2 inches wide) with the disk obscured. Colors range from white through every shade of pink, to maroon and red, and white with a picotee edge of more vivid color. These plants flower through mild winters and are frequently seen in container plant compositions with pansies and primroses and early small bulbs.
Garden availability: spring into summer in mildsummer areas; in hot-summer areas, flowering may resume with cool autumn weather
Culture for cutting: FS, MS

Bellis is easily established from seed and can be invasive unless rigorously deadheaded (all the more reason to harvest the flowers). Seedlings allowed to "go native" revert to smaller daisy-formed flowers. Harvesting, conditioning, vase life: AM, SC, NP, NF
Students who have experimented with English daisies were surprised to find they last seven to ten days in fresh water.
Buying tips: Rarely offered for sale.

Boltonia asteroides boltonia
hardy perennial zones 4-9
Part of plant used: sesh Height: 4-6 ft.
Boltonia features tall upright multibranched stems with panicles of starry white daisylike flowers, very similar to Aster pilosus var. pringlei 'Monte Cassino' but capable of being much taller. While the white form is most common, there are also a pale-pink and a pinkish-lavender form.
Garden availability: midsummer to midautumn
Culture for cutting: FS, AvS
As you might guess from the species name, Boltonia asteroides is very similar in habit to asters such as Aster novae-angliae. Field-grown crops need to be staked to keep the tall stems from falling about. In a mixed border, boltonia makes a perfect filler (just as it does in a vase) wedged in between shrubs. Grow from seeds or divisions.
Harvesting, conditioning, vase life: AM, SC, PF Boltonia lasts well in fresh water or foam for seven to ten days.
Buying tips: Avoid if the tiny central disks are brown, or if the little petals are starting to curl under.


Brassica Color-Up Series

Brassica oleracea ornamental cabbage, kale
hardy annual
Part of plant used: 䵢 fresh fesh Heigt: 18-20 in.
Sounds weird to say, but the whole plant, except for its roots, is used as a leafy "flower." Amazingly, this robust foliage color-spot for the winter garden is now available as cut stems selected to grow tall, with the tuft of leaves (smooth or curly edged) at the top. Foliage is creamy white or bright lavender, having a variable green margin. Brassica looks sensuous with open roses and double tulips-"petally" flowers, creating lush, Dutch masters-style arrangements. I just hate these plants as winter interest annuals, yet I love them as cut flowers. (Pretty much how I feel
about ornamental grasses, too.) It does not do to hold one's prejudices too tightly.
Garden availability: autumn and winter
Culture for cutting: FS, MS
Grown from seed sown in spring, the cabbage has formed loose heads by late summer and early fall; the center of this foliage rosette starts to color vividly. Lower leaves brown and drop away, forming a heavy stalk that makes a strong cut stem. Colors brighten with low night temperatures. Look for seed strains such as the Color-Up Series, bred to have a smaller head and thinner stem.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the stem is tall and the foliage color well developed. Pull off lower leaves that are in decline. Groom to make the stems as smooth as possible, removing stumps from old leaves. Keep the water fresh. Lasts seven to ten days. Preservative will help suppress any odor, but refresh the water often anyway.
Buying tips: Make sure the stems are in clean water and avoid limp foliage rosettes or those showing brown patches. If you can smell cabbage, beware.

## Brunnera macrophylla

Siberian forget-me-not, Siberian bugloss
hardy perennial
zones 3-8
Part of plant used:
Нeight: 18 in.
Many folks, not just me, are predisposed to like any plant with forget-me-not-like flowers, especially if they are the charming shade of blue the common name evokes. Think nosegays. After the plant flowers, the heart-shaped, slightly fuzzy leaves enlarge, with stems long enough to allow their use as nosegay collars; especially attractive in the variegated forms.
Garden availability: beginning in early spring (March/April), with flower and leaf stems elongating as the season progresses.


Brunnera macrophylla 'Jack Frost'
Culture for cutting: PS, MS
Brunnera is considered a ground cover; uncut flower stems will spread seed. One can amass quite a patch. Likes woodland soil, rich with organic matter.
Harvesting, conditioning, vase life: AM, SC, NP, NF
Harvest the flowers (which have few leaves) with as much length as possible and refrigerate overnight. It is wise to wait a few weeks after the first florets open to start harvesting the flowers, so the panicle has stretched, more open florets are showing, and the flower stems are firm.
Buying tips: Rarely seen for sale.

Buddleja butterfly-bush, summer lilac B. davidii, B. globosa
woody deciduous shrub zones 7-9
Part of plant used: ${ }^{2}$ fresh Height: $8 \mathrm{ft} .+$
Fracrance: strong scent of honey, heavy and sweet
In some areas Buddleja davidii has found itself on noxious weed lists, with good reason. This plant seeds itself far and wide-more reason to use its blossoms as cut flowers. Buddleja will repeat-flower if deadheaded. Flowers are pointed panicles, in shades of purple, magenta, pink, and white, all with a tiny orange eye in each tubular floret. Buddleja globosa carries its florets in balls, forming loose, oddly textural panicles in bright yellow, with the orange eye.
Garden availability: Buddleja globosa starting in June with little rebloom; B. davidii beginning in late June or July and continuing until frost if harvested

## Culture for cutting: FS, MS

Plants in partial shade will be leggy and shy. But-terfly-bush flowers on new wood, so it is wise to hard-prune (back to 2 or 3 feet) in late winter or early spring-whenever leaf buds break dormancy. Unpruned plants become big and awkward. Pinching the shoot tips encourages branching and makes a bushier shrub.
Harvesting, conditioning, vase life: AM, SC (see below), NF
Buddlejas have a bad rap as a poor cut flower. Proper conditioning is the key to success. Water the shrubs in the evening in hot weather and harvest the fully hydrated flowers early the next morning. Cut to have at least 6 inches of woody stem at the base, even if this makes the stem longer than you will want it to be. The panicle should be half open and the lowest flowers should not yet have started to fade; the remainder will open. You can always make a stem shorter. Remove the bark from the cut end up to 1 inch, revealing the green cambium underneath, and remove all of the foliage. Put the stems in deep cool water overnight, or if you have refrigeration, chill four to six hours instead. Should
last a week if you keep the water fresh.
Buying tips: If the bottom florets of the panicle have started to brown, or if the tip is drooping, you have before you old and/or poorly conditioned buddleia.

Bupleurum rotundifolium hare's ear
annual
Part of plant used: fresh Height: 24-30 in.
Bupleurum's flowers are reminiscent of the euphorbias, with umbels of lime to yellow bracts surrounding tiny yellow true flowers (to $1-1 / 2$ inches wide) with multibranched stems. The leaves clasp the stems entirely and are often bluish-green. Lovely and serviceable as a substitute for lady's mantle when the season of that flower has finished.
Garden availability: late June through the rest of the growing season, with successive sowings
Culture for cutting: FS, MS
So easy to grow from seed that even I can do it.
Harvesting, conditioning, vase life: AM, SC, PF Cruel, really, how we treat some annuals: for this one, pull up the entire plant and cut off the roots, leaving the stem as long as you need it to be, when all of the flowers are open or nearly so. Tall, wellgrown plants will have many branches, and a full arrangement can be made from the careful use of just one plant. Notice that unlike the euphorbias it so resembles, bupleurum does not have milky sap. Lasts up to two weeks: a durable filler.
Buying tips: Avoid stems with foliage that is browning or droopy. Bupleurum out of water will go limp but revives easily with a fresh angled cut and a long drink of tepid water (an hour or so).

## Calendula officinalis

 pot marigoldhardy annual or short-lived perennial
Part of plant used: fresh Height: 15-24 in.
Fragrance: aromatic foliage
Calendula has double daisylike flowers (averaging 3 inches wide) available in cream, bright yellow, mellow yellow, pale to dark orange, and orange with red tips. Flowers are sometimes darker at the center. The flower petals can be used in salads if organically grown.
Garden availability: early spring if the plant has lived through a mild winter; midsummer for newly sown plants
Culture for cutting: FS, AvS
Self-seeded plants tolerate poor soil. Seeds are best planted in situ in early spring. Select taller cultivars for cutting such as 'Art Shades', 'Lemon Queen', Pacific Beauty Series, 'Touch of Red'. Deadheading promotes continued flowering.
Harvesting, conditioning, vase life: AM, SC, NF Calendula petals should be flat and held straight from the flower center. Pick when centers are still tight but outer rows of petals are nearly perpendicular to the ground. Long lasting in fresh water, ten days or more.
Buying tips: If the outer petals are starting to roll in on themselves, forming quills, pass them by. Yellowed foliage means the flowers have been stored awhile.

## Callicarpa bodinieri var. giraldii 'Profusion’ beautyberry

woody deciduous shrub zones 6-8
Part of plant used: fresh Height: $8-10 \mathrm{ft}$. Beautyberry is grown for the vibrant purple fruit produced on one-year-old growth. Tiny flowers bloom at the leaf axils, followed in late summer by clusters of fruit (each berry can be up to $1 / 4$ inch in
diameter), which brighten in color as days shorten and nights get cooler. Showiest in early winter when the leaves have fallen, exposing the berry clusters separated by lengths of bare stem.
Garden availability: late September through the winter, until the berries brown and shrivel or the birds eat them
Culture for cutting: FS, AvS
Although considered a large shrub, beautyberry is kept manageable by frequent harvesting of the berries, stimulating bushy growth rather than long ungainly stems. The great gardener Vita SackvilleWest recommended growing this plant in multiples for better berry set. I have two plants and can vouch for this advice.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Foliage not as long lasting as the berries. Remove the leaves if they are still hanging on at harvest. Remember the color continues to intensify as night temperatures drop, so do not pick all of the berries when they first turn purple. Should last ten days or more.
Buying tips: Does not ship well. Often dries out, which is most noticeable in the little stems that hold the berries to the woody main stem. If they are shriveled, they will shortly shed the berries.

Callistephus chinensis China aster
annual
Part of plant used: 黑 fresh Height: $2 \mathrm{ft} .+$
Fragrance: pleasant citrus scent
Flowers can be buttons, daisy-shaped, cushions, or shaggy spiders. Colors include yellow and peach in the Matsumoto strain but are more often purple and lavender, light and dark pink, white, and red. Sometimes a yellow central disk is visible. My favorite is 'Liliput Blue Moon', a purple button with a light edge. Deeply cute.

Garden availability: late June, if seeds are started early in a cool greenhouse and then moved outdoors
Culture for cutting: FS, AvS
Sow seeds under glass in early spring, planting out after your last frost. May need staking.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the outer array of petals (on double forms) is fully open. With daisy types wait until the petals have fully expanded. China asters tend to branch. For short stems, remove and use the shorter branches. The plant will then modestly rebloom on new laterals. If you need long stems, pull the whole plant out of the ground and cut off the roots-if you cut off all of the top growth, it will not rebloom anyway. Lasts seven to ten days.
Buying tips: Yellowing foliage equals old stems.

## Camellia japonica camellia

woody evergreen shrub zones 7-8
Part of plant used: fresh fresh
Height: $6 \mathrm{ft} .+$
Fragrance: rarely fragrant
These do flower, don't they? I sometimes forget, because I am usually using the dark glossy leaves as an exemplary foliage-a classier version of salal (Gaultheria shallon). The flowers, which remind one of gardenias or simple roses, are lovely floating in low bowls. Best to use them this way, as the heavy blossoms are easily knocked off of their branches. They always land face first, bruising themselves. The foliage, by contrast, is durable. There are hundreds of camellia cultivars and six standard flower forms; all can be white, candy-striped, pink, red, burgundy, or yellow.
Garden availability: leaves, all year; flowers, in temperate climates, mid-to-late winter into spring
Culture for cutting: PS, MS (acidic)
These are shallow-rooted shrubs that dislike being deeply buried. Sheltered sites are best. If grown
for the flowers, remember camellias will drop their buds if they get too dry.
Harvesting, conditioning, vase life: AM, SC (woody), PF (for foliage)
If you want to display camellia blossoms on their natural stems, handle them gently. Add them to arrangements last, so the addition of other flowers does not bump the camellias loose. Keep the water fresh.
Buring tips: The foliage is most often seen for sale. Select well-branched stems with clean, glossy leaves.

Campanula bellflower
C. glomerata (clustered bellflower), C. lactiflora (milky bellflower), C. medium (Canterbury bells), C. persicifolia (peach-leaf bellflower)
biennial, hardy perennial
zones 3-8 (generally)
Part of plant used: fresh Height: 18 - 36 in.
Fragrance: Campanula lactiflora has the soothing fragrance of plum blossom incense, especially on a warm evening. It reminds me of my sister, who burned this scent as a teenager in the sixties.
This genus is littered with excellent cutting-garden candidates. Most produce flowers in shades of blue or purple, although species also have pink and white variants. Flowers of all are more or less bell shaped, occasionally up-facing rather than pendant, and some star shaped. The species mentioned here are all at least 18 inches tall.
Garden availability: May through mid-July, if you plant the right combination of species to bloom in succession
Culture for cutting: FS, AvS (add humus)
Some forms, such as the peach-leaf bellflower, rebloom a bit more after their first flush of flowers is harvested. Easily grown from seed, or crowns can be divided.
Harvesting, conditioning, vase life: AM, SC, NP, NF


Campanula medium

Harvest when at least two flowers on the inflorescence are fully open. Condition by rinsing those species with milky sap. These will last seven to ten days in vase arrangements if you keep the water fresh.
Buying tips: Brown leaf and petal edges indicate chemical burning from preservative use. Look for crisp colorful flowers and firm green foliage.

Carex testacea bronze sedge
evergreen ornamental grass
zones 8-9
Part of plant used: fresh Height: 2 ft .
The blades of this slender, arching grass are green with orange-bronze edges. The plant does produce flower spikes but is primarily used for the evergreen (ever-bronze?) foliage.
Garden availability: year-round, although the color is more vivid in the summer
Culture for cutting: FS, MS
Harvesting, conditioning, vase life: AM, SC, NF
Bundles of the grass can be bound together with raffia or jute twine, recut, and added to fresh arrangements to make bold textural statements. Also used knotted or braided. Lasts in water two to three weeks.
Buying tips: Rarely offered.

Ceanothus gloriosus
California lilac
woody evergreen shrub (there are deciduous forms) zones 7-9
Part of plant used: 億 fresh forsh
Height: $5 \mathrm{ft} .+/$
Fragrance: This one has none, but some species have a light fragrance.
Any of the genus Ceanothus can be used for their latespring blue flower clusters. Ceanothus gloriosus also has shiny green leathery foliage that is handsome and useful. This species is much wider (to 8 feet) than it is tall ( 1 to 3 feet) and is considered a fine woody ground cover.
Garden availability: flowers, late spring; foliage, yearround
Culture for cutting: FS, DS (acidic)
My experience with all ceanothus is that they hate excessive supplemental water in the summer after they have flowered and are willing to die to prove their point.
Harvesting, conditioning, vase life: AM, SC, NP The foliage of this species can be harvested all
year, but new foliage will want a long drink of cool water before being arranged. The leaves are up to 2 inches long, oval, deeply veined, and thick on the stem. If you harvest stems while the plant is in flower, make sure the flowers are freshly opened and not shedding. Stems last ten days and are good in foam.
Buying tips: Make sure the foliage is shiny. Dull foliage is old foliage.

## Centaurea cyanus bachelor's buttons, cornflower

hardy annual
Part of plant used: fresh Height: $3 \mathrm{ft} .+$ -
This brilliant blue wildflower is not a North American native, but we love it anyway. The flowers are thick, 1 - to $1-1 / 2$-inch-wide buttons, of cobalt-blue densely packed, ragged florets on gray branching stems. There is one flower per branch. Color variants include pink, lavender, white, and dark burgundy ('Garnet').
Garden availability: late May and for several months after, if you prevent the plants from setting seed by cutting off the branches with open flowers
Culture for cutting: FS, AvS
Rich soil produces taller plants with more flowers. Starved plants will bloom when shorter, as seen along roadsides. Although well-grown plants get tall, they are erect and usually self-supporting.
Harvesting, conditioning, vase life: AM, SC, PF Cornflower buds that are starting to show color will not open once they are cut, so always harvest only those branches with at least one flower in full bloom. These last seven to ten days.
Buying tips: Batchelor's buttons are usually sold in bunches; make sure that the foliage is gray-green and fresh (not brown and slimy) and that the open flowers look bright and "at attention." Remember, bunches of mostly buds will not develop into open flowers.

Centranthus ruber Jupiter's beard, red valerian
hardy perennial zones 5-8
Part of plant used: fresh Height: $3 \mathrm{ft} .+$ -
Fragrance: light to heavy vanilla-flowery scent
Jupiter's beard is composed of tiny tubular florets on dense cymes or clusters. The common color is red, but there is also a white form of the species and several pink hybrids.
Garden availability: spring through late summer if spent flowers are removed
Culture for Cutting: FS, DS
Capable of colonizing rock walls and gravel gardens, centranthus self-sows readily with wind-borne seeds. Using it as a cut flower is a sure way to keep it from escaping. The plants will form a woody base over time and want replacing every five years. Some of the lushest centranthus I have ever seen was an old stand in an abandoned garden where it had emerged through rough sod!
Harvesting, conditioning, vase life: AM, SC, PF Pick centranthus when the bottom third of the inflorescence is open. Will last about ten days in fresh water or well-saturated foam.
Buying tips: Examine the cyme carefully to see that all of the florets are fresh at the bottom. Old florets will start to darken and may shed.

## Cestrum

C. elegans, C. parqui
woody evergreen shrub (C. elegans), WDS (C. parqui) zones 8-11
Part of plant used: © fresh Height: 4-8 ft.
Fragrance: Both have a scent related to jasmine; Cestrum parqui is night-scented and more potent.
Both of the species listed here are grown for their clusters of tubular flowers, with Cestrum elegans being waxy red (varying from burgundy to dark pink) and C. parqui bright yellow-green, with somewhat more star-shaped mouths.
Garden availability: late spring through autumn

## Culture for cutting: FS, AvS

Cestrum elegans has survived in Portland, Oregon, to $17^{\circ}$ F. Cestrum parqui is supposed to be the hardier of the two, but both will come back quickly from their roots if the top growth is killed by severe winters. They should be planted in a sheltered spot where the ground does not freeze. Cestrum elegans will become quite large, while C. parqui is rather more petite. Both can be kept more compact if hard-pruned (back to 2 feet tall) in late winter. Both species bloom on terminal growth.
Harvesting, conditioning, vase life: AM, SC, PF
The cestrums can produce long flower stems, so cut the branch to your preferred length, then cut the remaining stump back to a main stem, ensuring vigorous regrowth. The woody stems should be split with a vertical cut 2 inches deep. The flowers last ten days or more.
Buying tips: Beware of stems with shedding florets or, in the red form (the most commonly seen for sale), flower edges that are starting to dry and darken.

Chaenomeles speciosa flowering quince
woody deciduous shrub zones 5-8
Part of plant used: fresh Height: 4-8 ft.
Although flowering quince is in many ways a difficult garden plant, the easily forced flowering branches, which bloom before the foliage emerges, are clear harbingers of spring. These will be some of the first shrubs to bloom, making them valued for Chinese New Year celebrations, which usually occur in late January to mid-February. Flower colors include white, any shade of pink to red, and pale coral to near orange. Each blossom is a small bowl (to 2 inches wide) with yellow stamens.
Garden availability: early spring, anywhere from January through March
Culture for cutting: FS, AvS
Flowering quince is only suitable for large gardens, although smaller forms will stand container culture. These shrubs form a massive, suckering base,
making a permanent garden feature. Once in place and mature, the plant is impossible to completely remove; I know 'cause I have tried. And did I mention the thorns?
Harvesting, conditioning, vase life: AM, SC-WW, PF
For early season forcing, bring in the cut stems, initially placing them in warm water. Change the water every two to three days as the buds enlarge, showing color. Whether forcing or picking fresh branches with open flowers, remember it is easy to knock the flower buds from the stems, so you should handle gently. Flowers in full bloom last indoors only four to five days-it is the slow opening and coloring of the buds that makes the parade worth watching.
Buying tips: Notice whether there are floating flower buds in the storage water of quince you are about to buy-if there are, this would indicate rough handling. Advanced development of the leaves indicates that you may be looking at stems that have already bloomed.

## Chamaecyparis pisifera ‘Golden Mop’ golden threadleaf cypress

coniferous shrub zones 4-8
Part of plant used: fresh Height: $4-30 \mathrm{ft}$.
Fragrance: typical pungent evergreen scent, cedarlike The shoots of new foliage on this coniferous shrub are whiplike lengths of twig smothered in scaly needles. The foliage in full sun is persistently lucid yellow; the shaded side of the plant is chartreuse. This plant is a perfect addition to mixed evergreen arrangements and wreaths, and has the added advantage of not looking like the typical evergreen (fir, pine, and so on), which greatly increases its efficacy beyond the traditional winter holiday season to which the rest of the conifers are limited.
Garden availability: year-round
Culture for cutting: FS, AvS
Reaches its mature height slowly and can be kept



Chaenomeles speciosa 'Alba'


Chamaecyparis pisifera 'Golden Mop'
low by annual pruning, which produces more electric yellow new growth. I have a neighbor who keeps hers shaped in a perfect box and has done so for more than fifteen years. The unrestrained growth habit is graceful.
Harvesting, conditioning, vase life: AM, SC, PF Harvest as needed. Exceptionally long lasting, usually the last element to die in any arrangement. Try it with tropicals.
Buying tips: Rarely offered for sale. Too bad, given its potential.

## Chasmanthium latifolium northern sea oats

hardy perennial (ornamental grass) zones 5-9
Part of plant used: fresh, dried Heicht: 2-3 ft.
Although I am apparently the last to board the ornamental grass booster train (and even now I only use it for short commutes), this was the first grass to capture my attention, which it has effectively held since. The inflorescence is a unique draping panicle of flat oat-shaped seeds, chartreuse when young, bronzing as they mature. The grassy foliage changes color in the same progression as the panicle. If you want to dry this grass yet still retain its singular grace, gather a bunch and place it in a vase with only an inch of water. Do not replenish the water, allowing the sea oats to dry from the bottom up while still nodding. You can air dry this grass upside down, but gravity works and the stems will dry straight. What fun is that?
Garden availability: August through October
Culture for cutting: FS, DS
Will spread a bit more than you would like from seed-more reason to cut it and enjoy.
Harvesting, conditioning, vase life: AM, SC, PF In fresh arrangements use several stems together for impact, or spread five or six stems throughout as filler. If drying, harvest while still green to prevent shattering.


Chasmanthium latifolium

Buying tips: Stems that have been stored in unchanged water will become slimy, loosing their rigidity-bad news if you were planning to use the grass in foam.


Clematis ‘Freda’ (Montana Group)

## Clematis hybrids

For cutting, use the woody deciduous vine and herbaceous perennial forms
zones 4-10
Part of plant used: fresh Height: various
Fragrance: rare, although 'Fair Rosamond' smells noticeably of primroses and Clematis 'Alba’ (Integrifolia group) has a spicy scent
Clematis has long been grown as an indispensable feature in all styles of gardening. Experimentation by Chalk Hill Clematis of Healdsburg, California, has revealed that many of the large-flowered hybrid
vines (LFH) and the taller herbaceous perennial cultivars make superior cut flowers. Colors are everything except orange and bright true yellow in the LFH cultivars.
Garden availability: May through October
Culture for cutting: FS, MS
Clematis want to be regularly fed. In the ground, use a "rose and flower" food, 4-6-2 or similar, which can be used often and will not burn the plants. Do not fertilize a large-flowered hybrid that has already formed its flower buds; wait until it is through with the impending flush of bloom before fertilizing again. Clematis with stripes or pale colors are best grown in partial shade.
Harvesting, conditioning, vase life: AM, SC, PF Ready for their secret? Here it is: for maximum vase life, harvest stems of clematis when the flower buds are just cracking open and snip stems long enough so that you are cutting back into older woody stem (which is forming bark and has turned brown). I will say it again: cut the flower stem long enough so that you are taking some of the woody brown stem. You may not want it to be that long for your arrangement-fine. Let the cut stem drink from a tall bucket of fresh water for several hours or overnight, and only then cut it down to the length you need. If you cut a stem that is all green new growth, you will not have a clematis flower with any longevity at all-twenty-four hours, maximum, usually much less. If you have cut the stem back to where it is brown and given it a long drink, your clematis flower will last more than a week. Try it for yourself.
Buying tips: Except at major markets in New York and San Francisco, clematis are rarely seen in florists' shops. Now that their secret is out, that should change.


Cleome hassleriana

Cleome hassleriana spider flower
annual
Part of plant used: fresh Height: $4-5 \mathrm{ft}$.
Fragrance: strong, not altogether pleasant scentcreosote?
The domed flower cluster of cleome is composed of gappy, four-petaled florets with cat-whisker stamens. Colors range through various shades of pink or lavender, as well as white. The brighter unopened buds are massed in the center of the terminal cluster; the opened florets are arrayed around and beneath them.
Garden availability: June through September Culture for cutting: FS, AvS (sandy)

Cleome wants good drainage, but water it well in hot weather. It can be started from seed indoors before the last frost, and successive crops can be grown in situ.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when five or more florets are open. Beware of the spines at the base of each leaf, not terribly stickery but noticeable. The cut stem will last ten to fourteen days in water, not as long in foam.
Buying tips: Often seen for sale at farmers' markets, rarely at florists. Avoid buying stems that are in fouled water.

Clerodendrum bungei glory bower
woody deciduous shrub
Part of plant used: fresh fresh, dried Height: $6 \mathrm{ft} .+$
Fragrance: Crushed leaves smell strongly of peanut butter; flowers have a pleasant, although not nutty, scent.
The florets of this species of glory bower form clusters of dark pink flowers, the sum being panicles 5 to 6 inches wide. These are nice enough as cut flowers, but the unusual seedpods make the best display. Each floret becomes a waxy dark rose-colored fivepointed star structure with a purple round berry in the middle. These can be used fresh or dried, but the seeds will shrivel a bit when dry.
Garden availability: flowers, mid-to-late summer; seedpods, September and later

## Culture for cutting: FS, AvS

This clerodendron can be invasive, due to its tendency to sucker. Grow in an area where root spread can be confined or in a large barrel.
Harvesting, conditioning, vase life: AM, SC, PF It is a real toss-up whether to pick the prettily scented flowers or wait for the unusual seedpods. I usually opt to use the seedpods fresh. Split the woody stem vertically after cutting. The flowers last a week when cut; the fresh seedpods last three weeks, more or less.
Buying tips: Sometimes you can find the fresh seedpods. Make sure they are plump; shriveling indicates excessive storage. (Most species of the genus Clerodendrum have the same common name, glory bower, yet the plants are quite different.)

Consolida ambigua larkspur
hardy annual
Part of plant used: s. fresh, dried
Неight: 3-5 ft.
The common cultivars of this stalwart delphinium relative tend to be tall, with the rosette-shaped florets carried on dense (when well grown) vertical spikes with variable amounts of side branching possible. These can be hung to air dry anytime before the bottom florets start to shatter. Colors range from white to pale pink, dark rose pink, lavender, and royal purple. In recent years a new form of larkspur has been selected, the Cloud Series, the cultivar 'Blue Cloud' being the most widely available (it is actually dark purple, not blue). 'Blue Cloud' is heavily branched, like gypsophila (baby's breath), with single rather than double flowers at the end of each branch. 'Blue Cloud' is the best summer-blooming filler flower I know of, long lasting and imparting a distinctly wildflower sensibility to any bouquet. Grow this.
Garden availability: starting in May if seed is planted the preceding autumn; through the summer into October if succession planting is done
Culture for cutting: FS, AvS
The tallest cultivars may need staking or other support. Imported larkspur from equatorial countries tends to have elongated weak growth and sparse flowers-too much of a good thing, evidently. Harvesting, conditioning, vase life: AM, SC, PF Harvest when the main flower spike is half open, deciding whether to sacrifice the potential of blooming side branches in favor of maximum stem length or just cut the main spike off where the branching starts. Multibranched 'Blue Cloud' should be cut off at the ground, as it tends to be shorter. One stem of 'Blue Cloud' will be ample to decorate a dozen roses.
Buying tips: Do not buy larkspur if the foliage has yellowed, the central petals of the florets are starting to brown, the tip of the spike is limp, or the petals have started to shatter from the bottom up.

## Convallaria majalis

hardy perennial (rhizome)
lily-of-the-valley

Part of plant used: 墨 fresh fit fresh
Height: 10 in.
Fracrance: heavenly, often an element of perfume
The fragile short stems of dangling white lily-of-thevalley bells are highly desirable in wedding work. There is a pink-flowered form, Convallaria majalis var. rosea. The broad green leaves are often used as a natural complement to the cut stems. The variegated form, C. majalis 'Albostriata', has leaves like an unusually elegant hosta.
Garden availability: spring (late March to early May); can be forced
Culture for cutting: PS, MS
Can be invasive when happy: we should all be so lucky. The rhizome produces two leaves per flower stem.
Harvesting, conditioning, vase life: AM, SC, P, NF Although lily-of-the-valley is not long lasting (five days, longer if kept cool), its elegance and perfume are so exquisite that any faults are forgiven.
Buying tips: Check the flowers closely to make sure that the little bells are still pure white. Creamy discoloration is the start of the flower's decline. Although lily-of-the-valley is easy to grow, demand far exceeds supply and the price per stem stays high even at the height of the local season. Forced out-of-season stems are excruciatingly expensive.

## Cosmos

C. atrosanguineus, C. bipinnatus, C. sulfureus
annual; C. atrosanguineus (chocolate cosmos)
HP in zones $7-10$
Part of plant used: fresh Height: 18-60 in.
Fracrance: bright citrus-hay scent to cut stems, bruised foliage
The 3-inch-wide daisy-shaped flowers of cosmos are carried on well-branched stems with ferny foliage. Cosmos bipinnatus is pale pink, magenta, or white


Cosmos bipinnatus 'Psyche'. Photo by Linda Beutler.
(look for the double cultivar, 'Psyche'). Cosmos sulfureus can be yellow, orange, or Chinese red (2 inches wide).
Garden availability: June through autumn if kept harvested to stimulate continued bloom
Culture for cutting: FS, MS
Easily grown from seed, or in the case of Cosmos atrosanguineus, from tubers.
Harvesting, conditioning, vase life: AM, SC, PF Harvest the branches when one or more flowers have just opened. Use in deep clean water. Lasts five to seven days, especially with preservative. Better in water than foam.
BuYing tips: Run your thumb over the stamens. If you pick up a lot of pollen, the flowers are old.


Cotinus coggygria ‘Grace’

Cotinus coggygria smokebush
woody deciduous shrub
Part of plant used: fresh
Height: 8-10 ft.
Although the hazy inflorescence that gives smokebush its common name makes great filler, these shrubs are often coppiced, which sacrifices the bloom in favor of prolific stems of handsome foliage on new growth. The bold leaf shape and color are the key features. The rounded leaves can be green with pinkish veins ('Pink Champagne'), purple to red ('Royal Purple' and 'Grace'), or gold ('Golden Spirit'). Most have brilliant fall color.
Garden availability: late June throughout summer and fall

## Culture for cutting: FS, AvS

Purple-leafed forms will hold their color in partial shade. Hard-prune in winter back to 3 feet tall to ensure abundant stems of straight, full cutting wood.
Harvesting, conditioning, vase life: AM, SC, PF Harvest the foliage anytime after it has completely expanded and feels firm. New growth feels fragile and tender, and will not have good vase life. Equally long lasting (more than ten days) in both fresh water and foam. Be sure to expose some cambium adjacent to the cut end for best water uptake.
Buying tips: Make sure cut stem ends are fresh and green, and that they have not been crushed, then allowed to sit in their own debris.


Crocosmia 'Lucifer'

Crocosmia $\times$ hybrida (syn. Montbretia) montbretia
hardy perennial (corm)
zones 6-9
Part of plant used: ${ }^{\text {s. fresh fresh, dried }}$ Нeicht: 3-5 ft.
The many Crocosmia cultivars feature brilliantly colored funnel-shaped to flat flowers (scarlet, orange, or bright yellow) carried on branchlets atop strong stems with bladelike, sometimes pleated, foliage. The seedpods are also decorative and dry well.
Garden availability: June (cultivars such as the earliest blooming, 'Lucifer') through September ('Citronella' or 'Golden Fleece', and 'Norwich Canary')

Culture for cutting: FS, AvS (sandy)
Corms of crocosmia form clumps that have proved to be excellent "pass-along" plants and naturalize readily, especially in sandy soil in mild climates.
Harvesting, conditioning, vase life: AM, SC, PF Harvest crocosmia when the first two to three florets are open. Buds showing color may open if the water is kept fresh. Stems last about a week, at which time old flowers and unopened buds will shed, and foliage will develop brown patches. Once cut, the attractive seedpods will not mature from the cut flowers, so leave some in the garden to harvest later.
Buring tips: Check the flowering tips closely to see that the unopened buds are not shriveled. Seedpods may be sold fresh or already dried.

Cryptomeria japonica Japanese cedar C. japonica 'Elegans', C. japonica 'Elegans Compacta', C. japonica 'Elegans Nana’
coniferous shrub
zones 6-9
Part of plant used: fresh Height: $3-15 \mathrm{ft}$.
Fragrance: pleasantly evergreen
Cryptomeria japonica 'Elegans' and its smaller forms are another group of evergreens that can be used for their unusual foliage form year-round, not just during the winter holidays. The feathery needles turn smoky bronze and purple during cold weather and are soft to the touch, not spiky. Great with tropicals, and an unexpected accent to holiday evergreen wreaths.
Garden availability: best from late autumn through early spring
Culture for cutting: PS/FS, MS
Best planted at woodland edges. Cryptomeria japonica 'Elegans' can be coppiced to keep it short and full, but dwarf forms relieve you of this worry.
Harvesting, conditioning, vase life: AT, SC, PF Harvest branches as needed. Exceptionally long lasting, more than three weeks in water or foam.
Buying tips: Rarely offered for sale; that is why we need to grow our own.

## Cyclamen persicum florist's cyclamen

hardy perennial (corm)
zones 9-10
Part of plant used: 总 fresh fresh
Height: 12 in.
Fragrance: pleasant, odor strength variable by color
You would not think it, but the fragile-looking flowers of cyclamen, with their severely swept-back petals, make cut flowers of surprising endurance. The mottled and patterned leaves (green, white, and silver) are equally tough. Flower colors include all shades of pink, red, magenta, and white, with picotee edges, streaks, and dark faces.
Garden availability: nearly any time of year, purchased from florists and harvested at your leisure
Culture for cutting: PS, AvS
Garden hardiness is quite variable; cyclamen has been successfully grown outside in sheltered locations in zone 8 and up. Potted plants enjoy a summer spent under a shade-producing shrub.
Harvesting, conditioning, vase life: AM, SC, PF To harvest either flowers or foliage, tug the stem base away from the corm, thus stimulating new growth. Do not cut the stems from the plant. The stumps left behind serve as a conduit for disease organisms to enter the corm, but tugging the flower (or leaf) leaves a wound right on the corm that seals over quickly and lets the corm know it needs to produce a new bud. Cyclamen are about as smart as alstroemeria in this regard. After the separation, the flowers or leaves should have standard conditioning. Both leaves and flowers are a lovely and unexpected addition to corsages and boutonnieres.
Buying tips: I know of only one supplier of cut cyclamen on the West Coast. If you see them available, make sure that the petals have good substance and have not started to become sheer at their edges.

Cytisus broom
C. battandieri, C. 'Hollandia', C. scorparius
woody deciduous shrub, WES
zones 6-9
Part of plant used: ${ }^{2}$ fresh fresh
Неight: 4-6 ft.
Fragrance: Pineapple broom gets its common name from its fragrance; a must for pineapple fanciers.
Cytisus battandieri (pineapple broom) has the showiest flowers of this group, which includes the highly invasive Cytisus scoparius (Scotch broom). Other forms, which tend to be full of pollen while flowering, are used for the straight green-ridged stems (sometimes with their tiny leaves) that make a striking vertical element in large arrangements. Pink-flowered forms, such as 'Hollandia', make serviceable fillers.
Garden availability: straight green stems-anytime the plant is not in flower; blooming branches of 'Hollandia', April to June; blooming branches of pineapple broom, June into July
Culturefor cutting: FS, DS
Garden brooms have escaped and become fugitives now on noxious weed lists. The pineapple broom is somewhat more tender (zones 7-9) and not invasive.
Harvesting, conditioning, vase life: foliage AT, SC, PF
The fresh stems of broom are tough and require little in the way of special treatment, lasting three to four weeks in water or foam. When you cut broom for the flowers, use standard conditioning; flowers last ten to fourteen days.
Buying tips: For stems, make sure the tiny leaves (if present) and twig tips are not darkening and shriveled. For flowers, check to see that the tiny peashaped florets are not drying and turning brown.


Dahlia 'Picotee Coral Beauty'

## Dahlia

hardy perennial (tuber)
zones 8+ in the ground
Part of plant used: fresh Height: 2-4 ft.
The flowers of dahlia can be any of six different sizes and fourteen possible shapes (from 2-inch-wide single daisies to 10 -inch-wide fully double blooms). Colors are anything but true blue, blended, and can be striped, picotee, or zoned. There are roughly twenty thousand named cultivars and counting.
Garden availability: early July through the first frost Culture for cutting: FS, AvS (sandy)

Best in mild coastal climates. Large-flowered forms tend to need staking. In cold climates (below zone 7) the tubers can be lifted after the first frost, divided, and stored in frost-free root cellars buried in sand or sawdust. Where the soil does not freeze, dahlias can be overwintered in the ground.
Harvesting, conditioning, vase life: AM, condition as indicated, PF
At harvest time, prepare a vat of hot water $\left(160^{\circ} \mathrm{F}\right.$ is optimal) with floral preservative dissolved in it. Cut the dahlias to the length you want, wrap the flowers loosely in newspaper to protect them from hot water vapor, and dip the cut ends into the water (to 3 inches deep) for twenty seconds. This can be done in bunches of five to ten stems at a time. Remove the stems from the hot water and immediately plunge into a bucket of cool deep water, removing the paper around the flowers. Leave the dahlias in cool water until you are ready to use them. They should last five to seven days if properly conditioned first. Fresh from the garden without the hot water treatment, they may last as little as twentyfour hours.
Buying tips: Dahlias from South America are beginning to find their way onto the market in winter, although only a narrow range of colors and forms are available, and thus far randomly. The bottom 2 to 3 inches of stem should appear cooked. Look at the back of the flower, as this is where the petals start to show their age first. If the petals there are starting to shrink and shrivel, the whole flower will be a goner in less than a day.

## Delphinium elatum English delphinium

## hardy perennial <br> zones 3-7

Part of plant used: fresh Height: 3-7 ft.
Delphinium is used for its towering spears of intensely colored florets, carried so densely that they overlap and the stem itself cannot be seen. Each floret is 1 to $2-1 / 2$ inches wide with a double row of sepals


Delphinium elatum 'King Arthur' (tall) and 'Piccolo' (shorter)
(thirteen to fifteen) and a tuft of smaller sepals inside, called the bee. The bee may be of a contrasting color. Flower colors range from white and cream through most shades of blue, lavender, and purple. The pink forms all have a touch of mauve. Bees are self-colored or more often contrasting white or charcoal gray.
Garden availability: late May and June, with rebloom possible if the plants are hard-pruned after the flowers are harvested and then heavily watered and fertilized.
Culture for cutting: FS, MS
These prima donnas want it all: deep rich soil, ample water, full sun, regular fertilizer. Protect from slugs in early spring as new growth emerges from the buried crown; tall varieties need stak-
ing. Allowing plants to set seed will inhibit further flowering.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest delphinium when only the lower half of the florets on the stem have opened. Some British gardeners recommend holding the hollow stem upside down (this will require standing on a chair if you are short and the delphinium is tall), filling it with water, and stoppering it with cotton. This is not necessary but does create a highly amusing photo opportunity. When stored in deep water, delphinium is perfectly capable of pulling water into its hollow stems all by itself. Then, when you pull the stem out of its deep bucket to move it to a vase, you will get water all over your feet, and the stem will slowly refill itself from the vase water. Or if you remember, you can put your thumb over the base of the stem to keep the water in as you transfer it. Good luck with that.

Use floral preservative. Delphinium dislikes floral foam and especially hates being arranged in big elaborate basket arrangements to sit outside in full sun for a summer wedding. It will be melting at its tips before the ceremony starts. In fresh water, delphinium should last a week before the bottom florets start to shatter. Once delphinium starts to shatter in the garden, cut it off and compost it, even if the upper part of the spear has not opened. If you leave it, it will start forming seeds, and if you try to harvest it as a cut flower, it will continue to shatter and be dead in a day. Fussy? Oh my, yes.
BuYing tips: Look for fresh green foliage above the water line and clean clear storage water; make sure the florets are not shedding. Avoid stems with broken tips. Buy locally grown delphinium whenever you can. Delphinium that has been shipped in from heaven-knows-where is a poor thing by comparison and is likely to lose its tips (and thus its statuesque grace), display bruised florets, and to have at some point been kept out of water for too long to ever rehydrate well. Locally grown delphinium is about the most beautiful cut flower you will ever use.

## biennial zones 3-9

Part of plant used: fresh Height: 15-24 in.
Fragrance: lightly spicy and fresh; a favorite
This classic cottage garden plant is grown for its dense flower heads of tiny bright florets, which may be touched with a darker color at their centers and edges. Overall cluster width to 4 inches; colors include white, pale or dark pink, true red, burgundy to nearly black ('Sooty'), and coral to salmon.
Garden availability: late spring and early summer; sparse rebloom after harvest if fertilized
Culture for cutting: FS, AvS
Seeds sown in midspring one year will be in bloom a year later. If kept happy and not allowed to set seed, sweet william will be perennial rather than biennial.
Harvesting, conditioning, vase life: AM, SC, PF Sweet william has jointed stems, as all of the carnation clan do, with pairs of leaves emerging from each node. Make cuts in between rather than at a joint. Harvest when half of the florets are open if you are planning to sell your crop and it will be shipped. If you are growing them for yourself or local sale, let all of the florets open. Should last seven to ten days.
Buying tips: Examine these dense flower heads carefully to be certain that all of the open florets are fresh and that unbloomed florets are in fact buds, not spent flowers that have darkened. Is the cluster half open or half old?

Dicentra bleeding heart
D. formosa, D. formosa f. alba, D. spectabilis
hardy perennial zones 4-8
Part of plant used: fresh Height: 15-24 in.
The flowers are little (to 1 inch long) dangling hearts
usually carried on arching stems, with six or eight florets in bloom at a time. Dicentra spectabilis has the showiest flowers. The shorter species, such as $D$. formosa, are a cherished component of nosegays. All forms press-dry beautifully.
Garden availability: April through June, with Dicentra 'King of Hearts' able to rebloom all summer Culture for cutting: PS, MS

Dicentras are, for the most part, woodland plants. The unusual cultivar 'King of Hearts' will repeatflower in dry soil in full sun and has foliage like our native forms but with decidedly larger flowers.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when three to four florets are open per stem. Shorter species carry their flowers on true spikes, which have no foliage. Best used in fresh water in vases. All last more than a week in water. Too fragile to ship but long lasting nonetheless.
Buying tips: Rarely offered, although Dicentra spectabile will be seen at early-season farmers' markets. Make sure the foliage is bright green and seedpods have not started to emerge from between the petals.


Dierama pulcherrimum
hardy perennial
zones 7-10
Part of plant used: : fresh Height: 3-5 ft.
The flowers of dierama are down-facing dangling funnels carried on strong, wiry stems above tussocks of grasslike foliage. The flowers are magenta, pale pink, reddish, or white-quite a variable species. The flowers are up to $2-1 / 2$ inches wide.
Garden availability: June and July
Culture for cutting: FS, AvS
Appreciates even moisture during the flowering season.

Harvesting, conditioning, vase life: AM, SC, PF The flower stems should be cut long enough to make the most of the striking drape of the thin stems with their burden of vivid bells at their ends. Harvest when at least three florets are open per stem. Dierama lasts more than a week in water or floral foam.
Buying tips: Rarely offered for sale because of its fragility. Local cutting gardens should grow this more often.


Digitalis purpurea

## Digitalis purpurea foxglove

biennial zones 4-8
Part of plant used: 黑 fresh Height: 4-7 ft.
All plant parts are poisonous. Known for its towering columns of chubby tubular flowers, foxglove has an inflorescence that is a full third of the stem top. Colors are purple to pink and white, with a varied amount of burgundy-colored dots noticeable in the tubes.
Garden availability: early summer
Culture for Cutting: PS, MS
This European native has naturalized all over North America and is a highly adaptable plant. Will seed itself around vigorously unless conscientiously deadheaded.

Harvesting, conditioning, vase life: AM, SC, P, NF Harvest foxglove when three to five of the bottom florets have opened. The top several inches of tiny buds may curl and curve as a response to life in a vase. I find this charming. Folks with sensitive skin should wear gloves when handling any of this genus. Lasts much better in water than in foam, up to ten days. Old florets drop as new buds open.
Buying tips: Nodding stem tips are not necessarily an indicator of dehydration: stems may curve on their own as they grow. If the tips feel firm, they are fresh.

Dryopteris erythrosora autumn fern
deciduous fern zones 7-9
Part of plant used: fresh Height: 2 ft .
The fronds of this fern are the colors of autumn when they emerge in the spring, gradually turning a rich dark green through the growing season. Very effective when used to accent spring's many forget-me-not-blue-flowered plants, as well as the primary colors of tulips, daffodils, and primula. Later in summer the red spore cases continue this fern's attraction.
Garden availability: New bronze-rust-copper stems unfold in April and May, but fronds can be harvested all summer.
Culture for cutting: PS, AvS
This fern is a decided asset to the woodland garden. Clumps will slowly adjust to drier shade as hedges and evergreen trees expand. The plant is evergreen in mild climates, but by midwinter the mature fronds are getting banged up by the weather and can be removed.
Harvesting, conditioning, vase life: AM, SC, PF Harvest as wanted from midspring through midautumn. This is not the longest lasting of the ferns, sometimes only to five days, but it is beautiful.
Buying tips: Rarely offered for sale, except as 4-inch starts for the garden. A fine but not-as-long-lasting alternative to the ubiquitous "leather fern."


Echinacea purpurea

Echinacea purpurea purple coneflower
hardy perennial
zones 3-9
Part of plant used: 黑 fresh, dried Height: 2-4 ft. Fragrance: pleasant (orange-colored strains)
The daisy-shaped blooms of purple coneflower are 3 inches wide, on branched stems. The ray petals surround a big central cone that is bright orange, making a sharp focal point for the magenta-pink or white of the petals. In the unimproved species, the rays fall back vertically from the cone, giving a bad-minton-birdie effect, but cultivars such as 'Bravado' and 'Magnus' carry their petals on the horizontal plane. New introductions from crosses with the yellow species have resulted in flowers that are various shades of orange. The cultivar 'Doppelganger' is
tufted, double with an extra layer of petals emerging from the cone (like a monarda can be).
Garden availability: throughout summer and autumn, with regular harvesting and deadheading
Culture for cutting: FS, AvS
These children of the American prairie are easily grown from seed.
Harvesting, conditioning, vase life: AM, SC, PF
As a fresh flower, echinacea can be picked once the rays are fully expanded. For drying, the rays can be left alone, or removed if you like the look of the cone without petals. Fresh, the flowers last ten days or more.
Buying tips: Make sure the petals are entire and not developing brown edges or other discoloration. The foliage should be fresh and firm, not darkening and becoming papery.

Echinops ritro globe thistle
hardy perennial
zones 3-9
Part of plant used: fresh, dried
Нeight: 4-5 ft .
This whimsical member of the aster family has many uses. The flower heads are the starring feature, up to 2 inches round, perfectly spherical, and silvery blue on branching stems. Although spiffy as a fresh cut flower, globe thistle also dries easily and is lively used stemless on dried wreaths to give a dashing textural comment.
Garden availability: summer, with some forms reblooming generously if deadheaded
Culturefor cutting: FS, DS Easily grown from seed.
Harvesting, conditioning, vase life: AM, SC, PF The leaves can be slightly spiny-not dangerous, just pesky. For fresh use or drying, harvest the flowers as needed once they are fully blue. Long lasting as cut flowers, to two weeks in fresh water.
Buying tips: Echinops that has been stored too long or in fouled water will nod its neck and not revive. This does not matter if your intention is to dry the flowers.

Epimedium pinnatum var. colchicum barrenwort
hardy perennial (can be evergreen) zones 5-9
Part of plant used: 量 fresh fresh Height: 12-18 in.
This rugged member of the genus produces brilliant yellow four-petaled florets ( $1 / 2$ inch wide) with dull red spurs. The five-part leaves are dull green and leathery-durable in the garden or as cut foliage.
Garden availability: flowers, early spring (March or even late February); foliage, anytime except when newly emerging and tender, and when showing the wear and tear of age
Culture for cutting: PS, DS
This form of epimedium is particularly useful in dry shade situations once established. Classed as a ground cover, Epimedium pinnatum var. colchicum is a spreader; one plant from a 4-inch pot will eventually cover a square yard. Said to be more clump forming than the plain species, but I have not found this to be the case. To give the flowers their due, I cut off all of the old foliage in December or early January, clearing the stage for the entrance of the flowers. I would not want their blossoming obscured by the tatty foliage from the previous year. New leaves unfurl as the flowers finish.
Harvesting, conditioning, vase life: AM, SC, NP, NF
Harvest the leafless flower stalks when the first florets have opened (they open from the bottom up). Delightful in nosegays with Primula veris 'Sunset Shades' and Muscari neglectum (grape hyacinth), which all bloom together. The flower stem lasts seven days. The foliage, once it has become leathery, will last two to three weeks.
Buying tips: Both the flowers and foliage are rarely offered for sale.

Equisetum hyemale horsetail rush
hardy perennial, extremely invasive zones 3-11
Part of plant used: fresh Height: 3 ft .
With its flowerless, leafless round green stems (its color darkens as the stem ages) and brown-accented joints, equisetum makes a bold structural statement in large arrangements and adds a modern flare to Asian styles.
Garden availability: New bright-green shoots emerge in spring; older stems are dark green and persistent.
Culture for cutting: FS, MS
I recommend you find a stand of this in the wild to which you have easy access. If you want to plant your own, for heaven's sake grow it in a pot where its spread can be contained, and sit the pot in low water. This is an aquatic marginal, but it will spread farther afield if it gets a toehold in moist rich garden soil, and you will curse the gods.
Harvesting, conditioning, vase life: AT, SC, PF This is a missing-link sort of plant, prehistoric and successful in a primitive way. Its stems (although what gardeners call stems are actually leaves!) are full of silica, and repeated harvesting will dull your clippers. Harvest anytime, anywhere, and use immediately or store in chilled water to use later. In fresh water the cut stems will eventually form roots. Buying tips: Avoid shriveled stems, and yes, one does see this for sale at wholesale markets in bunches of ten to twenty stems. Anyone who cannot pick this for themselves should not be allowed out loose.

Eremurus stenophyllus narrow-leaved foxtail lily
hardy perennial zones 6-9
Part of plant used: fresh Height: $4 \mathrm{ft} .+$ Eremurus carries an inflorescence that is pointed and bushy as a fox's tail, made up of starry florets. The species I have selected to discuss is luminous yellow, but there are other species and cultivars of Eremurus that can be white, cream, soft yellow, pale peachy
pink, and howling orange. Eremurus stenophyllus reaches 5 feet tall; others can be much taller. The foliage is a tuft of shorter grasslike leaves.
Garden availability: late spring into midsummer
Culture for cutting: FS, DS
Foxtail lilies require moderate moisture only as they prepare to flower, and no supplemental water after they bave flowered, preceding their fall and winter dormancy. If eremurus is planted where it receives irrigation in August and September, the fleshy roots will dwindle away.
Harvesting, conditioning, vase life: AM, SC, PF
Harvest when the bottom third of the flower buds are opening. The spent blossoms darken in color, giving the whole inflorescence a two-tone effect as the buds march up the stems. Provide tall vases, or insert the stems deep into floral foam to ensure ample water is available for these awesome flowers. The whole show lasts about two weeks. Make the most of the height; while short stems are easier to use in home arrangements, clumps of eremurus producing those short stems are telling you they are not happy: they are either too crowded or getting excessive summer water.
Buying tips: Try to judge how much of the inflorescence has already bloomed out. Since the stems have no leaves, if you see scars on a green stem, it means spent florets have been removed.

Eryngium sea holly
E. planum, E. xtripartitum
hardy perennial zones 5-9
Part of plant used: fresh, dried Height: 3 ft .
Similar in color and texture to Echinops ritro, sea holly differs in that the thistlelike flowers are not so large or spherical; each floret sits on showy bracts that can be annoyingly poky. All flower forms are silver to gray to blue. The stems are multibranched. Both of the forms listed here have smaller florets, making them distinctive filler flowers. Everyone will want
to know what it is. Dries easily and well.
Garden availability: midsummer through autumn; rebloom will be shorter, sparse
Culture for cutting: FS, DS
If overfed with excessive water and rich soil, these two forms will be less perennial, simply blooming themselves to death.
Harvesting, conditioning, vase life: AM, SC, PF
Cut an entire stem at a time, when most of the florets have turned blue, and after conditioning cut the branches down into shorter pieces (if that is what you want to do). Because sea holly dries so well, it is a shame to ever let any go to waste by letting it stand in the garden until it becomes brown and dried. Fresh stems last two weeks and can then be dried if the stems are firm.
Buring tips: The bracts start to show age first, developing discolored spots from being stored too long, and soon the whole inflorescence will lose its silver or blue sheen. Dried bunches are often seen spray painted various "fashion colors." I disapprove.

Erysimum cheiri wallflower
biennial, short-lived subshrub zones 3-8
Part of plant used: fresh Height: 15-30 in.
Fragrance: pleasingly sweet
Wallflower is grown for its masses of brightly and variously colored florets carried in dense racemes that lengthen as the buds continue opening. The four-petaled, $3 / 4$-inch-wide florets can be burgundy to red, any shade of orange, yellow from deep to pale, apricot and peach; the famous form 'Bowles Mauve' is purple in America and mauve in England. What is mauve supposed to be, anyway?
Garden availability: spring and summer (excessive heat slows down some forms)
Culture for cutting: FS, DS
If you spoil them with princely treatment, they will be less perennial. Wallflower likes to struggle a bit. It will not establish well in acidic soil. The
perennial forms become leggy, but this translates into longer flower stems. Wallflower should not be allowed to set seed, which will hasten the plant's demise.
Harvesting, conditioning, vase life: AM, SC, P, NF This is yet another archetypal component of nosegays and Victorian tussie-mussies. Harvest when the florets are fully open. Wallflower lasts seven to ten days in nosegay arrangements.
Buying tips: Rarely offered for sale. Here is an opportunity!

## Eucalyptus <br> gum, euc

woody evergreen shrub
zones 8-10
Part of plant used: fresh, dried Height: $4 \mathrm{ft} .+$
Fragrance: aromatic, and once encountered, unforgettable; essential oil stronger in juvenile foliage
The blue-gray foliage of these famous Australians keeps us coming back for more. Interestingly, the eucalyptus tribe has foliage of one form when young (opposite leaves, round, and the two halves surrounding the central stem), and when the plants are mature, old enough to reproduce, the leaf form changes; not just the leaf shape, but the leaves become alternate and develop petioles. Odd, how plants behave. For Eucalyptus gunnii (cider gum) the juvenile foliage is called spiral euc and the adult foliage is referred to as silver dollar euc.

A few species of eucalyptus develop handsome little flower buds, sometimes blushed with burgundy coloring; perversely, the wholesale florists sell these stems of tight flower buds as seeded euc. (Which just goes to show how many folks in that end of the industry do not know a daisy from a delphinium or a bud from a seed.) There are, as it happens, a few forms of eucalyptus with decorative seedpods-these can be used fresh or dried-further confusing those literalists among us.


Eucalyptus glaucescens

Garden availability: available year-round in its various forms

## Culture for cutting: FS, DS

All of the eucalyptus species are lovers of the Mediterranean climate. In areas with heavy winter and spring rainfall, giving the eucs free-draining soil increases their viability; consequently, the stated hardiness of the genus is under constant reevaluation. If you prefer juvenile foliage, hard-prune your euc down as short as you can, to 2 to 3 feet tall in late winter, and the new foliage you stimulate will be the rounded spiral type. If you want the plant to produce flower buds, you will need to let it become an adult (just like with humans).


Eucharis amazonica

Harvesting, conditioning, vase life: AT, SC, PF
Any form of eucalyptus foliage is quite long lasting. Fresh eucalyptus that has been out of water will become limp and may be hard to revitalize. Most forms of euc foliage dry well, as do branches of tight flower buds. Juvenile foliage retains its scent when dried.
Buying tips: The tips of eucalyptus that was in active growth at the time it was picked will turn black if held in cold storage for too long. Euc is floral shorthand, pronounced "youk."

Eucharis amazonica
eucharis lily
hardy perennial bulb
Part of plant used: fresh Height: 2 ft .
Fracrance: delightful tropical perfume
This elegant plant is grown for its white daffodilshaped flowers, with anthers arrayed around a central trumpet on protruding filaments. Each flower is 3 inches wide, with a waxen appearance to the substantive petals. The cluster may have up to eight flowers, each on a 3-inch tube. The flowers are carried on a leafless scape. In the 1920s and ' 30 s the eucharis lily was a premier bridal flower because it is easy to force in greenhouses. It has been replaced in popularity by gardenias, but Eucharis amazonica is still a satisfying plant to grow.

Garden availability: in temperate gardens, randomly throughout the growing season; late summer in its native Colombia and Peru
Culture for cutting: PS, AvS
In areas where it is not hardy, this plant should be grown in a container and allowed to become "potbound," or very compacted in its container. My plant spends the summer in dappled shade, is given tomato fertilizer, and blooms erratically starting in late May. It tolerates low temperatures to just above freezing and then occupies a place of honor in my home for the winter.
Harvesting, conditioning, vase life: AT, SC, PF Harvest as wanted from midspring through midautumn. The individual flowers are usually taken one at a time and wired individually for use in corsages and bouquets. Whole stems are dramatic in arrangements but rarely used as such.
BUYING TIPs: Individual blossoms can be ordered for special occasions. If the blooms offered seem transparent, they are old.

Euonymus fortunei winter creeper
woody evergreen shrub
Part of plant used: fresh
There are 175 species of Euonymus, and many of these have showy fruit in the autumn, but I have chosen this common landscape plant to discuss because I feel sorry for it. The fortunei group are low creeping and mounding evergreens-many are variegatedwith small, rounded leaves painted with gold or ivory. The cultivar 'Emerald Gaiety' blushes pink through its variegation in the winter, with long, sinuous branches, which will wind through towers or slatted fences.
Garden availability: year-round
Culture for cutting: FS, AvS
Variegations will be more pronounced in full sun.
Harvesting, conditioning, vase life: at, SC, PF
This plant is a terrific substitute for the evil Hedera
belix (English ivy); it performs the same groundcovering or semi-climbing tasks without becoming fugitive. If you want pliable stems of small handsome foliage to drape out of fresh arrangements, you will find Euonymus fortunei to be amenable and long lasting (up to two weeks). The small leaves bear up well in corsages and boutonnieres, looking fresh for many hours after being slapped onto a hot, often nervous human.
Buying tips: You will have to buy plants (which are not expensive) or find a public planting that could use a bit of pruning. Here is another opportunity crop.

## Euphorbia marginata

snow-on-the-mountain, snow in summer
annual
Part of plant used: fresh Height: 2-3 ft.
Fragrance: unnoticeable, which is lucky, as scented euphorbias veer rather much toward the stench of warm asphalt
This spurge relative is the only one native to North America. The leafy stems are variegated, pale green with a clean white edge, and rather than having the typical acid-green umbels of perennial euphorbias, snow-on-the-mountain has creamy flowers. Once the plants are mature enough to develop their variegation, commercial growers just yank them out of the ground roots and all, bundle into bunches of ten stems, and ship them dry.
Garden availability: late summer
Culture for cutting: FS, DS
Best grown from seed.
Harvesting, conditioning, vase life: AM, SC (rinse), P, NF
Keep in mind when approaching the spurges that as a group they have milky sap that is poisonous and quite irritating to sensitive skin. Can cause blindness if the sap gets in your eyes. The juices from euphorbia stems are also toxic to other flowers you might want to combine with them, so here is
what you do: rinse. This works for all euphorbias, including snow-on-the-mountain. Properly rinsed, it should last at least a week in water.
Buying tips: Obviously you will want to check the water in the bottom of the display container to make sure it is not visibly cloudy. Limp stems indicate poor conditioning.

## Eustoma grandiflorum lisianthus

annual
Part of plant used: ${ }^{0}$ fresh Heicht: 2-3 ft.
Fragrance: if only ...
This refined version of the prairie gentian was bred to be a marvelous cut flower, and it is. The pointed buds are swirled, and these unfurl into either single or double big goblets that curl back at their tips. The big smooth petals can be white, picotee edged, purple, lavender, or dusty rose. Dwarf forms created for container culture have all the grace and charm of a walnut.
Garden availability: June through August, if the earliest seedlings are raised in a greenhouse before planting outside
Culture for cutting: FS, MS
Eustoma will flower its first year from seed. The one problem in growing your own is that the seedlings are slow growing when they first germinate, and many fungus problems can inflict them until they start their phase of rapid growth. This is the tricky part.
Harvesting, conditioning, vase life: AM, SC, PF This is an exemplary cut flower: beautiful, long lasting, readily available year-round. If it had a lovely fragrance, we would not need to grow anything else. Harvest when at least two florets per stem have opened and their color is fully developed. The cut stems last up to two weeks in water. Buds showing color will open but may be pale compared to those blossoms that matured while still attached to their soil.

Buying tips: Nodding stems that have become limp will firm but not straighten after being put in fresh clean water. Avoid flowers that appear sheer, or stems with foliage showing discolored fungal spots, both caused by being stored too long in a plastic sleeve. Eustoma is consistently expensive, no doubt due to the difficulty of getting the crop through its delicate seedling stage. Lisianthus is an outdated genus name, still used by wholesale florists.

## Filipendula rubra queen of the prairie

hardy perennial zones 3-9
Part of plant used: fresh Height: 6 ft .
Fragrance: light and flowery
Although the basal leaves of Filipendula rubra are handsome, using them as cut foliage weakens the plant. Instead, harvest the glowing pink frothy flowers, like giant rounded (rather than pointed) astilbe. The plumes of the variety 'Venusta' are purplish pink.
Garden availability: summer
Culture for cutting: PS, MS
Queen of the prairie likes nearly boggy soil and can tolerate full sun where the soil stays constantly saturated.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when nearly all (three-quarters at least) of the florets are open and the overall effect is fluffy. If you must harvest the flowers well in advance of their being used, cover the mass of flowers with a garbage bag, bucket and all, to retain humidity. Much longer lasting than astilbe but unfortunately without the color range.
Buring tips: Rarely seen for sale, although I do not know why not. All of the ten or so species of Filipendula are jolly good cut flowers.


Foeniculum vulgare 'Purpureum'

Foeniculum vulgare 'Purpureum' bronze fennel
hardy perennial
zones 4-9
Part of plant used: 墨 fresh, dried fresh
Нeicht: 3-5 ft.
Fragrance: a decided licorice scent but not as strong as the plain green fennel
A relative of culinary fennel, bronze fennel has stems and branches enrobed in thread-leafed ferny foliage that is intensely bronze when young. Eventually, if you stop cutting the new growth for the foliage, the plant will flower, making dense, slightly domed umbels of tiny yellow flowers that everything wants to pollinate. When bronze fennel blooms, the foliage turns greener, looking more like its culinary cousin. However, bronze fennel does not form savory "bulbs" at the leaf base, as Foeniculum vulgare var. azoricum does.
Garden availability: foliage, late spring through summer; flowers, late July through autumn
Culture for cutting: FS, DS
All fennels will plant themselves around liberally if allowed to go to seed.
Harvesting, conditioning, vase life: AM, SC, PF For the cut foliage, because of its tender texture, it is vitally important that the stems be conditioned. The foliage will last four or five days. The flowers are more robust, lasting easily to two weeks.
Buying tips: Once the cut dill weed season is over in midsummer, the flowers of bronze fennel are sporadically offered for sale. Check that the foliage is fresh and that the water is not stinky or discolored.

## Forsythia xintermedia

forsythia
woody deciduous shrub zones 6-9
Part of plant used: fresh Height: 4-6 ft.
This late-winter-flowering shrub is for many a sure sign of spring. The yellow four- or five-petaled flowers glow in pale short-day sun. Budded branches are easily forced to flower early, anytime after the buds have become visible. Although there are many named forms, they are all yellow, flaxen, or light gold. The flowers make such a strong show because they arrive before the leaves.
Garden availability: forced, as early as mid-January; naturally blooming, mid-February through March
Culture for cutting: FS, AvS
Forsythia can be a big, awkward shrub if unpruned, so it is easy to rationalize cutting great piles to force into flower, especially if you can display a great mass of it all at once. Too bad it is so boring for ten months out of the year!
Harvesting, conditioning, vase life: AM, SC, PF For forcing, cut the branches and twigs with as much length as possible and place in deep warm water. Split the stems a few inches vertically, or peel off the bark to expose the cambium above the cut end. Replace the water every two or three days with warm clean water. Stems picked already blooming should last a week in a cool room.
Buying tips: Buy forsythia enough ahead of when you will need it to purchase stems not fully open, so that you enjoy as much of the show as possible at home. Americans who persist in pronouncing "forsythia" with a short " 1 " for the long " $y$ " sound are unarguably completely wrong.

Freesia lactea freesia
hardy perennial bulb zones 8+
Part of plant used: fresh Heicht: to 2 ft .
Fracrance: Freesia has a swoon-making fruity scent that varies in character from color to color. The single red version is the most intensely flowery. Single white freesia sometimes smells more like fresh ground pepper than like a flower. Pale lavender single flowers have the least fragrance.
Freesia sports up-facing trumpets, sometimes double, marching along a thin flower stem that arches and branches. Colors are a crisp white, cream, bright gold, pale or deep pink, pale or dark purple, and Chinese red.
Garden availability: can be forced but flower naturally outside in May, July, and July (zones 8 and up) Culture for cutting: FS, DS

Freesia can be grown in the ground in any climate where the soil does not freeze and the soil temperature rises to more than $80^{\circ} \mathrm{F}$ in late summer when the bulbs are dormant. They like to bake in dry earth while they rest (who doesn't?), and this assures quality rebloom the next year. A south or west exposure against a rock wall is just the ticket.
Harvesting, conditioning, vase life: AM, SC, PF Harvest freesia when the first bud has just opened or is about to. The side branches do not develop once the stem is cut, so I remove them. The entire freesia stem will bloom for more than ten days, but the primary flower or two may need to be removed or they will detract from the newly opened florets. Using floral preservative helps tight buds open with well-developed color.
Buying tips: Examine the stems closely to be certain that spent florets have not already been removed, leaving less of a show for you. Freesia stems with the side shoots left on will grab at each other as you remove the stem you want from the display vase. This is part of the reason I always remove them. Nothing is more vexing than to have a gorgeous flower decapitated by a branch of buds that are not going to mature anyway.


Gaillardia xgrandiflora 'Fanfare'

Gaillardia xgrandiflora
blanket flower
hardy perennial
zones 3-9
Part of plant used: fresh Height: 2 ft .
Gaillardia has rayed composite flowers ( 3 to 4 inches wide), the central disk red or yellow/brown; the petals are tipped in yellow, so the flower appears to have a red bull's-eye. Named cultivars vary the basic red-and-yellow color scheme, and double forms are also available.
Garden availability: early summer onward, with continued harvesting resulting in continued flowering Culture for cutting: FS, DS

Hard-prune in October to produce sturdy basal growth that will overwinter.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the flowers are fully open. Gaillardia does not respond well to excessive amounts of bleach in a homemade preservative mix.
Buying tips: Rarely seen in floral shops and then often mislabeled as black-eyed susan! The plants are a common American cottage garden plant, easy to find.

Galanthus nivalis snowdrop
hardy perennial bulb
Part of plant used: 黑 fresh
zones 3-9
Height: to 12 in .
Fragrance: light, herbal
Snowdrop is grown for its utterly disarming white flowers with outer petals resembling plump bird wings. The inner "underskirt" petals are usually touched with green. Leaving the foliage rebuilds the bulb for the following year.
Garden availability: winter, with Galanthus elwesii and Galanthus nivalis 'Sam Arnott' (also known as 'S. Arnott') blooming later and extending the season
Culture for cutting: FS, AvS
Snowdrops will be healthier, making a generous patch more quickly, if they are planted "in the green," when the foliage is still in active growth. Planting dormant bulbs gives varying results. This is just the opposite of the way we plant most bulbs.
Harvesting, conditioning, vase life: AM, SC, P, NF This dainty flower, dangling as it does from a fine pendant pedicel, is longer lasting when cut than you might expect. In a cool room, short vases full of snowdrops will last more than a week if they are harvested when they first spread their outer petals.
Buying tips: In the United States, the plants are sometimes offered for sale when in bloom, and this is when they should be planted outside. In England, snowdrops for sale as a cut flower are one of the earliest signs of spring.

## Galax urceolata galax

evergreen perennial ground cover zones 5-8
Part of plant used: fresh Height: 6-8 in.
Although the plumy white flowers of galax light up a woodland setting, they make poor cut flowers. Galax is grown for its leaves, which are 3 to 5 inches round. Their fall burgundy color is greatly desired; the rest of the year the leaves are dark green and glossy.
Garden availability: year-round, but less desirable in late winter when the leaves show weather damage
Culture for cutting: PS, MS (acid)
This plant is native to woodlands in the eastern United States and should do well (if not too well) in the maritime Northwest. Can be invasive.
Harvesting, conditioning, vase life: AT, SC (dunk), PF
After harvesting as many galax leaves as you need, or if you have purchased them, dunk them in plain cool to warm water for half an hour (with their stems waggling in the air), then recut each stem and place in a vase the normal way, or store. The leaves last more than a week in foam and up to three weeks in water.
Buying tips: Make sure the leaves are shiny. Galax is shipped to florists out of water in bunches of twenty stems in sealed boxes and will lose their shine once the box is opened.

## Gardenia jasminoides gardenia

woody evergreen shrub zones 8-10
Part of plant used: stesh Heicht: 4-5 ft.
Fragrance: extremely fragrant, with a strong, unique, unforgettable scent
Gardenias are grown for the pure white double flowers, rosette-shaped with thick petals, as well as for its heavenly scent, which I could smell all day.
Garden availability: on and off all year in zones with little cool winter weather

Culture for cutting: FS, AvS (add humus) Gardenias require rich soil, high humidity, and ample water. They are often sold out of their comfort zone as a gift plant; it is okay outside in the summer but succumbs to dry air maladies in houses in the winter. I have killed four of these in my zone 8 garden, yet I have also seen them thrive in this zone. Tsk!
Harvesting, conditioning, vase life: AM, SC
(woody), NP, NF
Usually only the flower and its calyx are cut, leaving any buds to mature. Harvest when the flower is fully open. Gardenias are extremely fragile and will discolor if touched. Dipping the blossom in diluted fresh lemon juice protects the flower from human skin oils. Lasts a week floating in a bowl and smells divine until you throw it away. Flowers age from white to ivory to yellow.
Buying tips: Gardenias are sold in different grades, based on blossom size. Avoid blossoms showing any bruising or discoloration. Gardenia jasminoides 'August Beauty' is the commonly grown cultivar for cutting.

Gaultheria shallon lemonleaf, salal
woody evergreen shrub zones 6-8
Part of plant used: fresh Height: 4 ft .
The handsome oval leaves of salal are widely used as a cut foliage. They are medium green, and shiny when clean. The flowers are not long lasting, nor are the fleshy dark purple berries (which do make fine jam). Pacific Northwest Indian tribes referred to this plant as salal, but on the East Coast, florists call it lemonleaf.
Garden availability: year-round
Culture for cutting: PS, AvS
On native soils salal can be invasive, sending out underground runners to establish new clumps of woody stems and foliage. If it is grown in full sun, the plant will need abundant water to prevent sun scorch.

Harvesting, conditioning, vase life: AT, SC
(woody), PF
When grown in partial shade or harvested by permit from woodland areas, salal can be cut at any time of day, although brand new leaves can become limp quickly if left out of water for more than a few minutes. This is a hardy, durable foliage, lasting more than ten days in water or foam.
Buying tips: Avoid leaves that are dull or that show the disfiguring effects of insect predation.

Gentiana gentian
G. asclepiadea, G. triflora
hardy perennial zones 6-9
Part of plant used: fresh Height: 3 ft .
The word gentian is synonymous with the truest blue, and both of the species we speak of here have soothing blue flowers, little trumpets in whorls around the last several nodes of leafy stems.
Garden availability: late summer into autumn
Culture for cutting: PS, MS (acid)
Although most gentians are choice tiny alpine jewels needing to be cosseted to get them to thrive, these two taller species are enduring garden plants. Both of these species are woodland plants in their native habitats.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when half of the buds are open. Gentian is fairly long lasting, to around ten days, and needs only half-strength preservative. It lasts longer in fresh water than in foam.
Buying tips: Make sure that the leaves and blue flowers do not show brown spots, which indicate they have been stored for too long in plastic sleeves. Store-bought gentian is often unreasonably expensive, as it comes to us from Holland and South America, when we could easily be growing it ourselves.

Gerbera jamesonii gerbera daisy
hardy perennial zones 8-10
Part of plant used: 黑 fresh Height: 18-24 in.
This somewhat fuzzy plant is grown for its tall daisyshaped flowers, single to semidouble, around light or dark central discs. Width is 2 to 4 inches, with leafless flower stems. Colors range from dark magenta, burgundy, many shades of red, and orange to peach, yellow, pale and dark pink, and creamy white.
Garden availability: in mild-winter areas, all summer and randomly the rest of the year
Culture for cutting: FS, MS
Drying out causes sunburn and collapse. Gerberas are heavy feeders and should be fertilized monthly in the ground or every two weeks in containers. Deadheading encourages more bloom. These can be grown in greenhouses with minimal winter heat.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when the flower is fully open. Use floral preservative at half strength or use a low-sugar formula. When gerbera is arranged in foam its longevity (normally seven to ten days) is reduced, and the fuzzy stems rot quickly.
Buying tips: Avoid gerbera daisies with discolored stems; they should be bright green. Yellowing stems have had excessive preservative or are old. Daisies with discoloration on their petals have had too much cold storage.

## Geum coccineum geum

hardy perennial zones 5-9
Part of plant used: 墨 fresh Height: 2 ft .
This unassuming cottage garden plant yields an excellent cut flower. The flowers are $1-1 / 2$ to more than 2 inches wide, semidouble with a puff of stamens at the center. The common colors are orangey red and yellow. The flower stems are slightly branched and wiry.

Garden availability: midspring through late summer, with deadheading lengthening the season
Culture for cutting: FS, AvS
One annual dose of compost is sufficient fertilizer.
Harvesting, conditioning, vase life: AM, SC, NP, NF
The unopened buds on a stem of geum will not open once the stem is picked, so try to select a stem with several open flowers. Because the slender stems are nearly leafless, take all the length off when you cut the flowers, so that you do not leave an unsightly stump. Vase life in fresh water is about seven days. Avoid preservative.
Buying tips: Rarely offered for sale. Flowers losing petals is always a bad sign. Geum is pronounced "gee-um," like "no-see-'um," sometimes shortened by sloppy pronunciation to "gem."

Gladiolus callianthus (syn. Acidanthera bicolor) peacock glad, orchid glad
hardy perennial bulb zones 8+
Part of plant used: : fresh Height: 3-4 ft.
Fragrance: heavenly, similar to trumpet lilies in character, but lighter
Peacock glads are a simpler, more elegant version of the big, gaudy, blowzy standard glads that are available to florists year-round. The flowers are white, out-facing, with a handsome burgundy throat (width 3 to 4 inches).
Garden availability: late July to September, depending on planting time
Culture for cutting: FS, DS
These inexpensive bulbs are available for planting in the spring. Position them 4 to 6 inches deep; add a scant handful of bonemeal or other bulb fertilizer. Getting the bulbs to rebloom next year is a trick if you live in temperate or colder climates. I have lifted them for winter storage (no luck), planted them extra deep to overwinter (they came back, but no flowers), and divided them in the spring and
replanted (all foliage, no flowers). If you know their secret, tell me. Otherwise, think of them as unusually satisfying annuals.
Harvesting, conditioning, vase life: AM, SC, PF Each slender stem has more than a dozen flower buds, which open from bottom to top. Best to harvest when the first one or two flowers are open. The flower stalks elongate as each blossom matures; you will want to take the spent flowers off as the upper buds open to keep the stem looking smart. The entire stem, assuming you change the water and recut the stem every day or two, should last nearly two weeks.
Buying tips: Examine the stem carefully to see if any old flowers have been removed and count how many more buds remain.

Gypsophila baby's breath, gyp
G. elegans, G. paniculata
hardy perennial zones 4-9
Part of plant used: $\pm$ fresh, dried
Height: 2-3 ft .
Fragrance: Although related to carnation, baby's breath can smell a bit skunky if left standing in the field too long before cutting.
The poofy, multibranched flower stems of Gypsophila paniculata can be used fresh or dried. The double flowers are tiny (to $1 / 4$ inch wide) and white (there is also a sweet pink form, G. paniculata var. rosea), and stem foliage is minimal. Gypsophila elegans (also known as "annual gyp") has larger but single flowers, also white, and does not dry well. (Please note that there is no " i " between the "l" and the final " a " of Gypsophila. Do not put one there. Saying "gypso-phil-i-a" is wrong and possibly impolite in mixed company.)
Garden availability: May, June, and July, with a modest rebloom following hard pruning after flowering Culturefor cutting: FS, AvS

To produce the maximum number of full flower
stems, fertilize often by amending the soil with manure or dosing the plants with tomato fertilizer in midspring when the flower stems are just emerging. Although this genus has drought-tolerant members, including tiny alpine forms, major flower production requires water.
Harvesting, conditioning, vase life: AM, SC-WW, PF
Harvest baby's breath when more than a third of the florets have opened. The rest will open, and to speed them along, place the stems in hot tap water (boiling is not necessary). You will then see buds that were nearly open pop. Or gather several freshly picked stems in your hand and give them a good shaking-sounds like abuse, but the buds will burst open (you will not believe me until you have done it yourself, so try it). This torture will not work on stems that have been harvested and stored for several days. Whether forced open or not, fresh baby's breath should last more than a week in water with preservative. For drying, harvest the gyp and place in warm water that has had one tablespoon of chlorine bleach added per gallon of water. Let the gyp drink this overnight before hanging it to dry; the bleach will help the flowers hold their whiteness as they dry rather than becoming tan.
Buying tips: Examine stems of baby's breath carefully to make sure the florets are soft and full, not shrinking and starting to dry up. If there are still little leaves at the branching points, make sure these look fresh too, although on imported gyp these leaves are removed. Do not put baby's breath with tropical flowers, because it looks ridiculous-awkward and dated and just not right.

Hamamelis xintermedia witch hazel
woody deciduous shrub zones 5-9
Part of plant used: 黑 fresh Height: 4-8 ft.
Fragrance: a sharp but pleasing scent, recognizable as an odor sometimes added to skin tonics
The branches of witch hazel are easily forced into early bloom. The flowers are tufts of slender, curled petals, shaggy in texture, usually bright yellow-gold, but orange, rusty red, and dusty purple forms are available. The flowers open and are gone before the leaves emerge. Cultivars for cutting include 'Arnold Promise', 'Diane', and 'Jelena'.
Garden availability: January and February
Culture for cutting: FS/PS, AvS
The witch hazels are handsome vase-shaped shrubs. Avoid sites with hot afternoon sun.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Branches with open flowers will last in water or floral foam up to a week. By late December, branches can be pruned, the lowest inch of bark scraped to reveal the cambium layer, and placed in warm water. Change the water and replenish with warm water until the flowers open; it can take nearly two weeks to force. Enjoy the journey.
Buying tips: Usually the flowers are already open when witch hazel is offered for sale. Make sure the flowers are not shedding and the color looks bright.

## Helenium autumnale

Helen's flower, common sneezeweed
hardy perennial zones 4-8
Part of plant used: fresh Height: $3 \mathrm{ft} .+$
The flowers of sneezeweed are a symbol of autumn's imminent arrival. The clumping mounds of green leaves produce multibranched stems bearing daisylike flowers with nearly spherical central discs that can be brown or yellow. The petals have slightly scalloped tips and can be rusty red, solid golden yellow, or either of those colors streaked with the other. Each flower is 2 to 3 inches wide. Cultivars for cutting include 'Butterpat', 'Moorheim Beauty', and 'Red and Gold'.
Garden availability: late July through frost
Culture for cutting: FS, MS
These plants form generous clumps fairly quickly and should be divided every other year.
Harvesting, conditioning, vase life: AM, SC-WW, PF
The more you harvest helenium, the more flower stems it will produce. Take the tall stems off when half of their flowers are in bloom, then break off the side branches of the flower cluster if you want shorter stems. Nearly open flowers will continue to develop when cut, but the tighter buds will not. Flower stems can last more than ten days. Not for human consumption-do not use on wedding cakes.
Buying tips: As with cosmos, run your thumb over the central disc and see how much pollen you pick up. If the petals of the red forms are going brown at the edges, you are looking at old stems.

Helianthus sunflower
H. annuus, H. maximillianii, H. multiflora 'Loddon Gold'
hardy annual, hardy perennial
Part of plant used: st fresh, dried
zones 5-9

Sunflowers have daisy-shaped yellow petals arrayed around brown or greenish-gold central discs. The


Helianthus annuus 'Indian Summer'. Photo by Linda Beutler.
annual forms produce a wider range of colors: from near white to all shades of yellow and gold, bicolored petals half red at the center and yellow at the tips, solid red to burgundy, and an enigmatic pinkish brown. The perennial cultivar 'Loddon Gold' is double.
Garden availability: variable, depending on species, but generally throughout the summer; annuals from seed, starting in May and continuing if successive crops are planted
Culture for cutting: FS, DS
Careful research will reveal perennial species adapted to swampy soil, meadow habitats, and harsh life on the prairie in poor, thin soil. Annual
selections begin growing from seed quickly as days lengthen. Some of the annuals work toward one large flower (more than 4 inches wide) on a timberlike stem; if these are seeded in tight rows with insufficient thinning, the stems will stunt, making them thinner and the flowers smaller and perhaps easier to use. Disbudding the apical flower on nonbranching forms is rarely effective at producing side shoots on usable stems. Other annual cultivars will branch, producing flowers that are naturally smaller in diameter. 'Soraya' is a favorite multibranching selection, with dark gold flowers. Forms that branch well can be harvested one branch at a time, instead of forcing you to cut off the whole plant to harvest the one main flower in its prime.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the petals have opened flat but pollen is not yet forming at the outer edge of the central disk. Nearly flat flowers will continue to develop, but flowers harvested with the immature petals still folded over the disk will not open properly. Remove all foliage from the stem, as it is not as long lasting as the flowers and will make arrangements look tired when in fact the flowers may have many more days of life ahead. Annual forms last ten days, more or less. Perennial forms do not need above-water foliage removed and are variable in their vase life but usually at least a week.
Buying tips: If the petals are still folded over the disk of annual forms, they will not open properly, no matter what the florist says or tells you to do. Sunflowers are picked immature because they ship better that way, but it does the consumer no favors. That is why it is better to buy local, in season, and/ or grow your own. Also, beware of full pollen development on the central disc. Lots of pollen equals an old sunflower.

## Helichrysum petiolare licorice plant

woody evergreen shrub (somewhat tender)
zones 8 (?) +
Part of plant used: fresh Height: 3 ft .
Fragrance: What you would expect from the common name. Silver forms have the strongest scent.
This mound-forming (if pruned) or trailing plant is used for its furry silver-to-lime-green foliage, small (about 1 inch long and wide) mouse-ear-shaped leaves thickly produced on slender stems.
Garden availability: late spring until frost stops new growth
Culture for cutting: FS, AvS (neutral)
The form 'Limelight' (with yellow-gray leaves) will sunburn if not sufficiently well watered and prefers protection from hot afternoon sun. Tougher silver forms try to flower in late summer, but the blossoms are not attractive; the plant can be pruned to produce more foliage and discourage flowering. All forms grow well in annual baskets, troughs.
Harvesting, conditioning, vase life: AM, SC, F (?), NP
Can be harvested as soon as the stems have reached the length you want to use. Growing tips may become limp after cutting, and a long cool drink will firm them up. Maintain clean water in the arrangement for maximum vase life (seven to ten days), as licorice plant is unusually sensitive to fouled water. Not long lasting in foam, especially foam that is starting to dry.
Buying tips: Make sure that tips are firm and leaves right above the waterline are not developing gray or brown patches, which indicates their water has not been freshened often enough.


Heliconia caribaea

## Heliconia caribaea <br> lobster claw

evergreen perennial
Part of plant used: fresh
zones 10-12 Fragrance: None, or not good. The bracts catch water, which attracts mosquitoes, which pollinate the flowers. The stagnant water in the bracts is nasty.
Heliconia flowers are insignificant but carried in colorful, tough bracts arrayed in flat lateral or spiral configurations. The large bananalike leaves are usually removed from the cut stems. In Heliconia caribaea the bracts are blood red. The selection $H$. rostrata 'Red Wings' is a hanging heleconia, with a long, draping inflorescence, from 3 to 5 feet long, red, sometimes with a green outline on the bracts.

Garden availability: in the tropics, nearly year-round Culture for cutting: FS/PS, AvS (add humus)

In the tropics, heleconia leaves may reach for the sky, but the flowers are produced down in the foliage. Rich soil, high humidity.
Harvesting, conditioning, vase life: AM, SC (dunk), F, NP
Of all of the tropical flowers listed here, this genus is the most sensitive to chill. The inflorescence will blacken overnight if stored in a cooler. Otherwise, lobster claw can last three weeks in plain water or foam.
Buying tips: The surface of the bracts should look waxy and vivid. Dull color or blackening edges indicate age or poor handling.


Heliconia psittacorum

Heliconia psittacorum parakeet flower
evergreen perennial
zones 10-12
Part of plant used: fresh Height: 4-6 ft. + Heliconia flowers are insignificant but in this species are carried in delicate, colorful bracts in a flat or slightly angled configuration. The large bananalike leaves are usually removed from the cut stems. Heleconia psittacorum is more petite than H. caribaea and birdlike, pink and yellow or shaded with orange. (In ornithology, the psittaciformes are the parrots: whenever you see psittac- at the beginning of a plant's species name, you know you are dealing
with a flower that is in some way birdlike.)
Garden availability: in the tropics, nearly year-round
Culture for cutting: FS/PS, AvS (add humus)
Heleconia psittacorum holds its flowers proudly above the foliage, and the leaves are not long lasting. Rich soil, high humidity.
Harvesting, conditioning, vase life: AM, SC (dunk), F, NP
Of all of the tropical flowers listed here, this genus is the most sensitive to chill. The inflorescence will blacken overnight if stored in a cooler. Otherwise, parakeet flower lasts a week in plain water or foam.
Buying tips: The surface of the bracts should look waxy and vivid. Dull color or blackening edges indicate age or poor handling.

Helleborus $\times h y b r i d u s \quad$ lenten rose
hardy perennial zones 6-9
Part of plant used: 遥 fresh fity fresh
Height: to 18 in.
Fragrance: slightly musky, bordering on unpleasant
So few herbaceous perennials are winter blooming, making the cutting of hellebore flower stems tempting. In summer when the nearly evergreen leaves are glossy and tough, they are a handsome addition to tropical or foliage-focused bouquets.
Garden availability: flowers, December through March, with the flower stems persisting
Culture for cutting: PS, AvS (neutral or alkaline) Hellebore does best under deciduous trees, where it receives weak winter sun. Hot sun will burn the foliage. Hellebores adapt to more acidic conditions if fertilized in autumn with organic matter to which some slow-release lime has been added. Although the foliage is technically evergreen, often the previous year's leaves are starting to degrade as the new flower stems emerge. Astute growers remove all foliage before the flower stems appear in December or early January. New leaves unfold after the flowers blossom.


Helleborus $\times h y b$ bidus seedlings

## Harvesting, conditioning, vase life: AM, SC (?), NP, NF

How to make hellebore flower stems last? Ah . . . All I can do is pass along old wives' tales that work with varying degrees of success. The first suggestion is to wait to harvest a given stem until after the first (primary) flower has passed and the secondary buds are newly opened with their stamens separated and clearly visible. The longer a stem has stood in the garden, the better it will last when cut, but the colors change as the flowers age. Next, either burn the stem with a flame (candle, gas stove, cigarette lighter) or dip the cut end in boiling (or nearly so)
water for ten to twenty seconds, tipping the flowers out of the steam to protect them. After either form of heat treatment, place the stem in deep cool water for several hours before using. You may still have a stem or two collapse, and I do not know why. Another option is to dunk the newly cut flowers in warm water (baby's bath temperature) for ten to fifteen minutes, then recut the stems and place them right side up in deep cool water. Hellebore stems that survive burning and conditioning will last a week in water and can be successfully used in boutonnieres and corsages. The flower stems will last only eight to twelve hours, if that, in wet foam, no matter what you do.
Buying tips: Rarely seen for sale by the stem, for obvious reasons. Using hellebores as cut flowers is a horticultural gamble, but oh so tempting.

Hermodactylus tuberosus snake's-head iris
hardy perennial (tuber)
Part of plant used: fresh
zones 7-9
Fragrance: light honey scent
Flowers of this iris near-relative have standard and fall petals like their cousins. In this case the standards are brilliant olive green, and the inner surface of the falling petal is velvety dark purple-brown. You could call this color "raisin" and I would not object. One flower per stem. A fascinating, tailored little flower, best displayed either singly in a bud vase, or ten to twelve stems in a glass cylinder vase.
Garden availability: late March to April
Culture for cutting: FS, DS
Flowers best where the tubers can bake after they go dormant in early summer. Plant 3 to 4 inches deep and avoid excessive summer water, thus ensuring that a few tubers planted in the fall will spread into an ample, free-flowering clump over time. The tubers are inexpensive, giving great value for little investment.

Harvesting, conditioning, vase life: AM, SC, NP, NF
Cut the stems when they have reached their full height, when the falls are just starting to . . . fall. Avoid cutting emerging foliage, which grows in separate tufts. Lasts in fresh water up to a week. Buying tips: Rarely offered. The green parts of the flower should look bright and fresh; cut ends not brown-indicating they have not been recut. Just pull them out of their display vase and look at the ends.

## Heuchera coral bells

H. americana, H. ×brizoides, H. sanguinea
hardy perennial zones 3-8
Part of plant used: fresh fresh Height: to 2 ft.
The flowers of heuchera are $1 / 4$-inch-long bell-shaped
florets borne in loose racemes or panicles, on naked wiry stems. Coral red is a common color, but you will also find pale pink, white (tinier florets), and green (Heuchera $\times$ brizoides 'Greenfinch' is fabulous). There was an emphasis on breeding heuchera with colorful foliage throughout the 1990s, with Dan Heims's program producing many flashy selections. These leaves make excellent collars for nosegays. But now the pendulum is swinging back in favor of breeding for the flowers, and about time, too! Especially good cultivars of $H$. $\times$ brizoides for flowers include 'Firefly', 'Green Ivory', 'June Bride', and 'Mt. St. Helens'. Hot-colored filler flowers are hard to find; the lightness of texture and variability of flower colors available make heuchera a terrific choice as a cut flower.
Garden avallability: initial flowering, May and June, with some hybrids reblooming after first harvest; leaves, throughout summer and autumn
Culture for cutting: PS, MS
Newer cultivars can take more sun if their soil is sufficiently moist. The foliage mounds will get


Heuchera ×brizoides 'Firefly'
woody over time. The entire plant can be lifted and reset with the crowns at the soil surface, or woody stems with active leafy growth at the tips can be broken off and planted in a pot with the woody stem buried, and then planted out when roots have developed.
Harvesting, conditioning, vase life: AM, SC, P, NF Cut the stems with as much length as possible. Flower stems last in fresh water for more than seven days and benefit from floral preservative. When you harvest leaves, do not take more than half of the leaves off of any one plant in a year to avoid weakening it. The leaves are solitary on naked
stems, with stem length reaching 12 inches on more vigorous forms. Cut the leaf stem as long as possible; avoid leaving a visible stump. If the leaves must be picked several days before they are to be used, spritz them with water, put them and their storage container in a black plastic bag, and store chilled. Leaves in vase arrangements can last more than ten days.
Buying tips: The variety 'June Bride' is sometimes available in the summer. Examine closely to make sure that the tiny white flowers are fresh.

## Hosta plantain lily

hardy perennial
zones 3-8
Part of plant used: fresh Height: 12-24 in. + Fragrance: flowers are often fragrant
Although some hostas have fragrant flowers in midsummer, they are principally grown for the shadetolerant mounds of foliage, with leaves on naked stalks anywhere from 4 to 36 inches tall, depending on the variety. Leaves can be round, oval, or heart or lance shaped, with countless shades of green and variegation. Surface texture can be smooth or quilted, or the veins can be inverted for a strongly ribbed effect.
Garden availability: late spring and all summer Culture for cutting: PS, MS

Slugs love hosta but are less enamored of the blueleafed forms. All hosta die completely to the ground in late autumn and emerge in March and early April.
Harvesting, conditioning, vase life: AM, SC, P, F Harvest hosta leaves with as much length as possible and avoid leaving a visible stump. Never remove more than half of the leaves from one plant in a summer. Immediately place in cool water, where the leaves will last more than a week. When you use hosta in foam, make sure you select leaves with stems strong enough for the task.


Hosta 'Hadspen Hawk'

Buying tips: Avoid leaves showing any brown or gray patches, indicating fungus, pest damage, or sunburn.

## Hyacinthus orientalis <br> hyacinth

hardy perennial bulb
Part of plant used: ${ }^{s}$ fresh
Fragrance: heavenly, rich, strong, unique
Hyacinth is grown for its chubby stems crowded with
1 -inch-wide florets, each shaped like an open lily on a short tube. Colors include pure white, pale pink to
nearly red, dark claret, pale to dark blue, yellow, and apricot or pale orange. There are double-flowered cultivars.
Garden availability: March to mid-April, although the forcing season for cold-stored bulbs is much longer
Culture for cutting: FS, AvS
Plant at least 4 inches deep ( 6 is better) for stability of the heavy flower stem. The foliage should age after deadheading unharvested flowers; remove the leaves once they start to yellow. Hyacinth plantings become congested, producing more flower stems with fewer florets on each, reverting to the natural form. Thin plantings every three to five years, which will allow small bulbs to enlarge.
Harvesting, conditioning, vase life: AM, SC, P, NF Pick hyacinth when all florets are showing color; the stem will get taller and the florets enlarge. For corsage work, select fully open florets. Harvest by cutting the leafless flower stem with as much length as possible; do not damage the surrounding foliage. Note that the sap can be irritating. Place in water, allowing the stems to sit slightly chilled or at room temperature for an hour or two before using. Vase life in fresh water is more than seven days.
Buying tips: The petals of the florets should look thick and waxy. Shear patches and streaks indicate age or extended cold storage. Buy hyacinth stems immature unless you need open florets immediately.

## Hydrangea macrophylla (Hortensia Group) mophead hydrangea

woody deciduous shrub zones 6-9
Part of plant used: s. fresh, dried
Height: $3 \mathrm{ft} .+$
The flower heads of mophead hydrangea are dense domes of 1-inch-wide florets, each comprised of four or five petal-like sepals. These may be blue (in acidic soil), pink (in basic soil), white, purple, or dark red. As the domes mature, the color shifts,
sometimes to a darker version of the initial color, sometimes to green or perhaps to burgundy. This is a variable trait, but the color of the persistent flowers in September will be much different from the color of the newly opened flowers in July.
Garden availability: summer into autumn
Culture for cutting: PS, MS
Hydrangeas are water lovers, and those that tolerate full sun need ample water. The best flower color occurs in mature plants that have been in the ground more than three years. Frequent transplanting damages feeder roots, and the flowers from young plants or newly planted shrubs are often pink, even if their genetic predisposition is to be some other color.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Harvest hydrangeas with long stems, cutting them where the bark is brown. Immediately remove all but the last set of leaves, those closest to the flowers. Make sure the florets have fully expanded and the dome feels a bit leathery to the touch. Newly opened flowers do not last as well as mature flowers. Condition four hours (overnight is best) on the long stems, even if you will ultimately use the flowers shorter. If the newly picked flowers start to go limp, try dunking them headfirst in warm (not hot) water for ten or fifteen minutes. Properly conditioned hydrangeas should last ten days to two weeks in water, not quite so long in foam.
Buying tips: Avoid hydrangeas starting to shed sepals, or with branchlets within the inflorescence starting to shrivel. The leaves should be removed.
For a more thorough discussion of hydrangeas, see chapter 4.


Hypericum xinodorum 'Elstead'

## Hypericum xinodorum 'Elstead'

St. John's wort
woody deciduous shrub
zones 7-9
Part of plant used: fresh Height: to 54 in.
The 'Elstead' variety of St. John's wort is grown for
its clusters of smooth, shiny seed capsules, which start very green and then turn a vibrant coral color. Flowers are small, five-petaled and yellow, but wait for the much showier berries to form. Does not dry well.
Garden availability: Flowers from early June through July, and harvesting the berries as they mature
will produce more blooms on shorter stems in the autumn.
Culture for cutting: FS, AvS
Hard pruning (down to 12-24 inches tall) in late winter will produce more strong, straight stems to support the fine clutches of colorful fruit.
Harvesting, conditioning, vase life: AM, SC, PF
Cut the side stems from the main stem at the base of the plant, stimulating more straight stems and fruit production. This may give you more length than you need, but then, you can always cut a stem shorter. Can last more than two weeks.
Buying tips: Look for stems with firm, glossy seedpods and healthy foliage. If seedpods are dull, they are old.

Ilex aquifolium English holly
woody evergreen shrub
zones 7-9
Part of plant used: fiti) fresh fresh
Height: to 80 ft .
Rich-green shiny and spiny leaves, coupled with round red berries, are the essence of the Christian and Druid winter holidays. Frankly, during the busy pre-Christmas rush, after getting pricked by the leaf spikes of this plant all day so that my hands swell until they look like puffer fish, I would just as soon throw every stem of it into the street. Bah humbug. There are variegated forms. Yippee. The berries are poisonous.
Garden availability: Branches of leaves and ripe berries are available through the winter, although after New Years Day, one cannot give holly away.
Culture for cutting: FS, AvS
Both a male and a female holly are needed to ensure good berry set. How does one sex a holly? Wait for it to flower, as the males produce clouds of pollen. One male tree can pollinate the whole neighborhood (you sexy thing!); if there are already hollies where you live bearing fruit, there must be a boy holly around somewhere, and you need not plant
one. I have heard it said that male leaves have fewer spines than do female leaves, but you could not prove it by me.
Harvesting, conditioning, vase life: AT, SC, PF
Once cut, holly can be stored out of water in plastic boxes holding the humidity around the leaves in a cooler at $35-38^{\circ} \mathrm{F}$. Just recut the stems before placing in water or foam, and they are ready to go. Lasts 2+ weeks.
Buying tips: Avoid stems with shedding berries-they are too mature. Leaves become dull if they have been too dry at some point.

## Ilex verticillata winterberry

woody deciduous shrub
zones 5-8
Part of plant used: fresh Height: 15 ft .
As unpleasant as English holly can be, this American cousin is as cooperative. The leaves are not spiny, but even if they were, this plant does us the courtesy of dropping its leaves in the autumn while working on its crop of round red waxy berries (poisonous), which reach their prime for the winter holiday season.
Garden availability: early winter until late winter, or until the birds strip the plants
Culture for cutting: FS, AvS
Just as with English holly, you need a boy and a girl. Winterberry is slow growing; let the plant get close to its mature height before harvesting willy-nilly. Professional growers throw protective netting over their plants to keep the birds away.
Harvesting, conditioning, vase life: AT, SC (woody), PF
This form of holly cannot be stored out of water as English holly can, so harvest when needed and condition as for woody plants.
BuYing tips: Shriveling berries mean elderly stems.

Inula helenium elecampane
hardy perennial zones 5-8
Part of plant used: 墨 fresh Height: 3-6 ft.
Flowers of Inula helenium are bright gold daisies with yellow central disks 3 inches wide. Flowers are produced with one or two blooms per sturdy stem.
Garden availability: starting in late July and continuing for six weeks
Culture for cutting: FS, MS
Inula prefers deep rich soil and tolerates partial shade, although it flowers better in full sun. Plants are clump forming, and taller forms may need staking.
Harvesting, conditioning, vase life: AM, SC, NF Harvest when flowers are fully expanded. Inula daisies last an average of seven days in water.
BUYing tips: As with other types of daisies, rub your thumb over the disk. If you pick up a lot of pollen, the flowers are too mature to last long.

Iris fleur-de-lis
hardy perennial, HPB zones 5-10 (depending on species and cultivar grown)
Part of plant used: fresh Height: 2-4 ft.
Fragrance: Bearded iris are strongly perfumed, with one lavender-blue cultivar scented unmistakably like grape Kool-Aid; other forms are fragrant, too.
Iris are grown for their handsome, elegant flowers, composed of three petals that are erect, known as standards, and three draping petals, the falls. The stigmatic surface is on the underside of a structure called a style arm (at the top of each fall), and there is one stamen, a separate structure, hidden under each style arm. The bright beards of bearded iris have no pollen, serving only as a seductive trail for insects to follow, leading them under the style arm, where activities that should be hidden from polite society take place.

The great thing about this genus of more than three hundred species is that it produces flowers of


Iris 'Mexican Holiday'
every possible color, especially the bearded group. In some cases the falls may have a totally different contrasting color from the standards, making a clash of colors possible in one flower. Anyone who says, "That's a color combination not found in nature!" has no familiarity with iris.

The three basic iris groups that are best for cutting are bearded iris; Siberian iris, with smaller, more delicate flowers, looking more like native species; and Dutch iris, grown from bulbs and capable of being stored and forced to bloom out of season. A few species and cultivars, including Siberian iris, have decorative seedpods.

Thousands of iris cultivars are available. Here are a few favorites: 'Batik', purple with white streaks (bearded); ‘Blue Ribbon', cobalt blue (Dutch); ‘Butter and Sugar', yellow and white (Siberian); ‘Cleeve Dodge', dark purple (Siberian); 'Edith Wolford', blue and yellow (bearded); ‘Gypsy Queen', bronze (Dutch); 'Ideal Wedgewood', soft blue (Dutch); 'Memoirs', apricot (bearded); 'Salsa Rio', burgundy (bearded); 'Superstition', black-purple (bearded); ‘Taco Bell', root-beer colored (bearded); ‘Telstar', dark violet-blue (Dutch); ‘Tropic Night', dark purple (Siberian); 'White Swirl', white (Siberian).
Garden availability: bearded and Siberian iris, May and June, with some repeat for certain cultivars; Dutch iris, June
Culture for cutting: FS, AvS
The three groups listed earlier flower best when grown in full sun in good soil. Dutch and bearded iris can be all or partially summer dormant. Dutch iris resprout in the autumn, and Siberian iris are winter dormant. All can be planted outside in either fall or early spring.
Harvesting, conditioning, vase life: AM, SC, PF For Dutch and Siberian iris, cut the stems when the flowers have emerged from the sheath but the falls and standards have not separated. If picked too young, the flowers may not develop. Vase life is at least six days in clean water or well-hydrated floral foam.

Bearded iris can be picked anytime after the primary flower is showing good color and starting to unfurl. All of the other buds showing even a nose of color will eventually open if overall stem health is maintained by good water hygiene. Each flower lasts only three days, but removal of spent flowers encourages the remaining buds to open, and we can then get more than ten days' enjoyment from a single stem.

For any iris, try not to damage nonflowering foliage as you harvest. The strappy, grasslike leaves are needed for producing nutrients for the bulbs, crowns, or rhizomes, as the case may be. Any type
of iris can be hastened into bloom by placing it in warm water, but this shortens the overall vase life. Buying tips: Fully opened iris of any type are to be avoided. Iris not showing any color may not open at all. In the spring, field-grown Dutch and Siberian iris may have more than one bud per flower socket, and we can feel the sheath at the base of the primary bud to see if there is another flower on the way. Do not squeeze too hard or you may damage the next blossom.

Ixia corn lily
hardy perennial bulb
Part of plant used: fresh Height: 16-24 in. Corn lilies are six-petaled up-facing bells opening flat to reveal a dark eye no matter what the main color of the flower is. Widely hybridized, corn lilies sport wiry stems that end in a spike of ten to twelve florets (each about $1-1 / 2$ inches wide) that may be white, yellow, orange, several brilliant shades of pink to magenta, violet, or nearly red. The foliage is slender and grasslike.
Garden availability: wintered-in-the-ground bulbs, late June and July; bulbs dug in the fall and stored over the winter, earlier or later, depending on when they are taken out of storage and potted
Culture for cutting: FS, AvS
At the edge of their hardiness range, corn lilies are more damaged by wet soil than by cold. In zone 8 , site these bulbs (corms, really) in sandy soil near a sheltering wall or against a chimney. Ixia is easily forced or stored in cool, slightly moist sand over the winter and grows well in shallow pan-shaped pots.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the first two or three florets are open, and all the rest will open once cut. Ixia stems last up to ten days in water. They are utterly charming in nosegays and marvelous massed alone in clear 9-to-11-inch cylinder vases.

Buying tips: Look for stems with most florets not yet fully open; make sure the petals are not becoming transparent and buds are not dropping (caused by excessive cold storage). Scars on the stems below open blooms indicate that spent flowers have already been removed.

Jasminum sambac Arabian jasmine, pikake
woody evergreen shrub zones $10+$
Part of plant used: ${ }^{\text {s. }}$ fresh Height: 6-10 ft.
Fragrance: For my nose this is the most beautiful scent in the world-the best, peerless, heavenly, only better. This is the flower scenting jasmine tea. A chocolatier at the Portland Farmers Market infuses this scent into chocolate truffles. Makes me wish I could kiss myself after I eat one. I weep if she has run out of them before I arrive (tearing of hair, rending of garments, the whole sordid scene).
Arabian jasmine is a bushy jasmine, rather than a vine, grown in hedges for its clusters of small white flowers, plump rounded stars ( 1 inch wide) atop a half-inch-long tube. Widely grown in drier areas of the Hawaiian Islands for use in lei; both the buds and open flowers are used. There is a double-flowered form. Not native to Hawaii.
Garden availability: summer, with random repeat flowering throughout the year in tropical climates
Culture for cutting: FS, AvS (in Hawaii)
For those of us not living in the Kona district on the Big Island, or in Honolulu on Oahu, grow as a potted plant to summer outside in the sun, with ample water and regular blossom-booster fertilizer (10-60-10). My plant of the double form, 'Grand Duke of Tuscany', has limped along in zone 8 by being rushed indoors when winter low temperatures approach freezing but going back outside when nights are above $40^{\circ} \mathrm{F}$. Warm dry house air throughout the winter encourages incurable pests such as spider mites, especially if the plant is not regularly watered.

If it is any consolation to you, pikake (as the Hawaiians call it) does not grow well on the wetter sides of the islands, as it prefers relatively low humidity.
Harvesting, conditioning, vase life: AM Only the flowers and buds are taken for lei making; stems are not cut. Arabian jasmine is exceptionally perishable, bruising easily, and is rarely shipped in bulk quantities for lei making on the U.S. mainland, as plumeria and vanda orchids can be. For lei, buds and flowers are strung end to end, through the tubes.
Buying tips: Oh, don't I wish. But seriously, if you are in Hawaii and are lei making, even just a dozen flowers worked into a mixed lei will add invaluable depth to the blended perfumes. A pikake lei will hold its lovely scent until it is brown and unsightly and you throw it out to sea (or push the virgin into the volcano). Pikake is pronounced "peacock-ee."

## Kerria japonica 'Pleniflora’ double kerria

woody deciduous shrub zones 4-9
Part of plant used: es fresh Height: 10 ft .
Kerria is a vigorous suckering shrub producing wiry arching branches of puffy golden flowers ( 1 inch wide), little pompons that appear in the axils of each leaf.
Garden availability: late spring through midsummer Culture for cutting: FS/PS, AvS

The double-flowered form is said to be less rampant and less hardy than the single-flowered form, but don't you believe it. If you have room, this Japanese woodland native is a good candidate for the partialshade cutting garden.
Harvesting, conditioning, vase life: AM, SC, PF Harvest after the flowers are newly opened. Cut stems of kerria can last up to two weeks in water, slightly less in foam.
Buying tips: Make sure the pompons are soft to the touch. Old flowers dry and darken before shattering.

Kirengeshoma palmata yellow waxbells
hardy perennial zones 5-8
Part of plant used: ${ }^{\omega}$ fresh dried
Нeicht: 3-4 ft.
This plant is grown for the 2 -inch-long butter-yellow flowers, which start as buds with swirled tips and open to fleshy opened bells with recurved petals. Elegant. Flowers come in groups of two or three per peduncle. The plant's stems may be reddish black, and the large leaves are green, palmate, and rough. Interesting spherical seed heads are worth drying.
Garden availability: flowers, midsummer to midautumn
Culture for cutting: PS, MS
This woodland native is an herbaceous relative of the hydrangeas. The foliage will sunburn in full sun, even in unscreened morning exposures.
Harvesting, conditioning, vase life: AM, SC, NP, NF
Cut the stems to the ground, then recut them to the length you will need. Just as for hydrangeas, the foliage ages before the flowers, so remove all but the last one or two sets of leaves at harvest. Flowers last seven to ten days.
Buying tips: Other florists have not yet discovered this plant, but I keep yammering on about it. The edges of the flowers brown as they age, and bruise if roughly handled.

## Knautia macedonica knautia

hardy perennial zones 5-9
Part of plant used: fresh Height: 2 ft .
Knautia features dark red (to nearly black-burgundy) flowers, a composite of tubular florets carried on a tight, button-round flower head (to $1-1 / 2$ inches wide), on foliage-free branching stems. Seed heads not nearly as distinguished as those of the genus Scabiosa, but there is a family resemblance.

Garden availability: late spring into fall, especially with diligent deadheading
Culture for cutting: FS, DS/AvS
Knautia is proving to be tolerant of low-water situations if given neutral to alkaline soil. In overly rich acidic soils they will be short-lived, literally too happy. Darkest-flowered forms are the most popular; either buy plants in bloom or beg seed from someone with dark flowers you have seen.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when the flower head is at least half open. Lasts at least a week in water; perfect for nosegays.
Buying tips: Florets at the edge of the flower heads will dry and shrivel first; very hard to see in deeply colored forms but papery to the touch.
Kniphofia uvaria red hot poker
hardy perennial (some are evergreen) zones 6-9
Part of plant used: fresh Height: 3-4 ft.
Kniphofia (named for Baron von Kniphof; should be pronounced "knip-hof-ia"-do pronounce the " $k$ "-instead of "nif-fo-fia") sports green scapes topped with layered tubes opening from the bottom of the inflorescence up, often changing colors as they open. The commonest form has orange buds, turning yellow as they open, giving the flower a two-toned effect. Recent years have seen the introduction of solid-color (or relatively so) forms: creamy-green, coral, pale yellow, pale yellow tipped in orangey-red, gold. Some hybrids are described as pink by wishful-thinking breeders (the variety 'Strawberries and Cream' looks more like blood oranges and cream). In some species the inflorescence is rounded and clublike rather than elongated.
Garden availability: late May (Kniphofia uvaria hybrids) through October (K. triangularis, syn. K. galpinii), with some forms reblooming Culture for cutting: FS, MS (sandy) Although the tough-keeled, straplike foliage


Kniphofia uvaria cultivars
suggests dry regions and drought tolerance, the kniphofias are native to southern Africa's moist meadows and streamsides, in higher elevations. They do not like extended dry conditions. Kniphofia uvaria has successfully naturalized up and down the length of the Oregon coastline, escaping from farmhouse gardens-loving as it does sandy moist soil.
Harvesting, conditioning, vase life: AM, SC, PF
Harvest when the bottom two tiers of flowers have opened. Vase life averages ten days. Okay, someone sent you a box of tropicals from sunnier climes (the bragging rats) and you have made an arrangement that does not quite have the zip you had hoped for. This is the flower you can pick from your own


Lathyrus odoratus, mixed
temperate garden to pull it all together.
Buying tips: Pokers held in cold storage or wrapped in plastic too long will drop buds. Bottom tubes will shrink and brown as they age; look for scars proving part of the inflorescence has already decayed and been removed.

Lathyrus odoratus sweet pea
hardy annual
Part of plant used: fresh Heicht: vines 6-8 ft. Fragrance: The species name, odoratus, tells you all you need to know. As pretty as sweet peas are, they smell even better than they look: flowery and a little
spicy, depending on the cultivar. The first selections ever made, 'Cupani' and 'Matucana', are still hard to beat for volume of scent.
Sweet pea flowers consist of a fused upper standard petal, wing petals, and a keel. These can be ruffled or smooth-edged; florets are carried two to four on a stem (on well-grown plants, five or six). Flower stems are only 6 to 10 inches long. For longer cut stems lengths of vine must be taken, stunting further bloom. Colors include all shades of pink, white and cream, pale to dark blue, purple and lavender, red, burgundy, tangerine, pale yellow, bicolors, and forms with streaks, pin dots, and picotee edges.
Garden availability: late spring to summer, although seed mixes for earlier bloom are now available

## Culture for cutting: FS, AvS

Sweet pea seeds should be soaked in warm water overnight before planting, to speed germination. Seeds sprout best in cool soil and can be planted in situ before the last frost. Autumn sowings will germinate, and these seedlings will begin growing once the days lengthen, making an early first crop. It is sometimes said that sweet peas are happier growing in partial shade where summers are hot, but in my experience more flowers are produced in full sun than in partial shade. Keeping the plants well watered during warm weather is the key to success. Flower production stops once plants start to set seeds, so keep them picked!
harvesting, conditioning, vase life: AM, SC, NP, NF
Harvest when at least two florets are open.
Although they only last five to seven days, the charm and scent of sweet peas make them an irresistible nosegay ingredient. What could possibly make a nose gayer?
Buying tips: Using preservative suppresses the scent, and this is why it seems florists' sweet peas haven't much smell. Also, shipped sweet peas tend to have less scent and paler colors. Grow your own or buy from farmers' markets. Overly mature sweet peas will drop old flowers; their texture becomes sheer and papery.

## Lavatera trimestris mallow

annual
Part of plant used: s. $_{\text {en }}$ fresh Heigt: $2-3 \mathrm{ft}$.
Mallow bears mini-hibiscus flowers ( 3 to 4 inches wide) shaped like open trumpets, in bright or pale pink, or silvery white. Except in the white forms, the veining of the petals can be prominent. The stems are well branched, and blooming side shoots can be removed for shorter arrangements.
Garden availability: early summer into autumn

## Culture for cutting: FS, AvS

The annual lavateras are best grown from seed in situ, as they resent transplanting. Sow in mid-tolate spring, after any danger of frost.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when several blooms have opened per stem. Flowering stems last seven days on average. Best in festive vase arrangements.
Buying tips: Look for fresh leaves. Buds showing color will open, but check the bud tips, which should not be darkening and becoming sheer, indicating excessive storage. Old open flowers develop transparent edges or patches.

Leucojum aestivum summer snowflake
hardy perennial bulb zones 4-9
Part of plant used: $\mathscr{s}_{0}^{6}$ fresh Height: 18 - 24 in .
The uninitiated will assume from the leaves and stems that this plant is a narcissus, until the calyx splits and the inch-wide white bells drop out and expand, revealing a green dot on the outer tip of each petal point. Three to six dangling florets per stem. Very fresh and cheering. The species name differentiates this form from the autumn and early spring blooming species (Leucojum autumnale and L. vernum, respectively), which, although charming, are too short to use as cut flowers.
Garden availability: April into May
Culture for cutting: FS/PS, AvS
Plant the bulbs in the autumn. Leucojum aestivum is more tolerant of partial shade than its more diminutive cousins and tolerates a more basic soil pH . Wonderful naturalized in a meadow. Leave foliage to die back after picking the flowers.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when the first two florets are open. Summer snowflake lasts seven to ten days in water, but the stems are too soft to insert into standard floral foam. All buds will develop if the water is changed
regularly, although the earliest floret may need to be removed while the youngest florets are opening. The clear sap is not toxic to other flowers. Buying tips: I cannot think why this flower is not more widely available while it is in season. It might be fragile to ship, but local growers should include this with their tulip and narcissus crops.

## Leycesteria formosa Himalaya honeysuckle

woody deciduous shrub zones 8-10
Part of plant used: 黑 fresh fresh Height: $6+\mathrm{ft}$.
A handsome dangling inflorescence (4 to 6 inches long) features dark red bracts from which the white true flowers emerge as small, down-facing trumpets. Flowers are followed by shiny purple-black berries nestled in the persistent bracts. Stems can be picked while flowering, and the berries will develop after cutting. There are usually several tassels at the end of each branch, in the leaf axils.
Garden availability: late summer into autumn
Culture for cutting: FS, AvS
Himalaya honeysuckle can behave like an herbaceous perennial in the lower reaches of its hardiness zones. In rainy winter climates, do not prune the hollow stems until after spring frost danger has passed. New growth will be obvious by then, taking the guesswork out of pruning. Or simply plan to hard-prune the whole plant after the last frost, which forces straight new canes. Leycesteria can be invasive.
Harvesting, conditioning, vase life: AM, SC, PF Flowering stems last more than ten days in water, not quite as long in foam. Dramatic in tall arrangements where the dangling flowers are seen to best advantage.
Buying tips: Growers must think this flower more fragile than it is, as it is rarely seen for sale.


Leycesteria formosa

Liatris spicata gayfeather
hardy perennial zones 4-9
Part of plant used: ${ }^{\text {s. fresh, dried }}$
Неight: 3-4 ft.
Gayfeather features vivid magenta or white flower heads on spear-shaped spikes with numerous buds, producing hairy-petaled florets. Blooms from the top of the stem down. Hang to air dry when the inflorescence is half open. Stems are sturdy.
Garden availability: summer to early autumn Culture for cutting: FS, AvS

This is a tough plant native to the prairie and used


Liatris spicata
to rough conditions. The flower stems are thicker with buds if treated with any kindness at all.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the top inch or two of buds have opened. Can last more than ten days in water, but because the stems bloom from the top down, the top may become ratty while the lower buds are still opening. Tends to foul its water constantly, so the water should be changed often.
Buying tips: Make sure liatris is displayed in fresh water, the stem foliage has been removed, and the stems look clean and green. Examine the top flowers on the stem to make sure they have not aged and turned brown.

## Lilium lily

hardy perennial bulb zones 4-8
Part of plant used: fresh Height: $3 \mathrm{ft} .+$
Fragrance: Dependent on the species and hybrid group: Asiatic hybrids are rarely fragrant, while Oriental hybrids are intensely fragrant.
Lilies are grown for their exquisitely simple flowers, composed of six petal-like sepals. Because of how long lasting they are, the Asiatic and Oriental hybrid lilies are the best lilies for cutting. Depending on the species involved in hybridization, the colors range from white to dark burgundy red, including yellow, orange, pink, and peach. The sepals may be marked with black spots or a brushstroke. Leaves on the stem may emerge in segmented whorls or randomly from all over the stem.
Garden availability: later spring through September
Culture for cutting: FS, MS (good drainage) Most lilies grown for cutting require excellent drainage to prevent rotting in areas with wet winters. Plant deeply in areas where the soil surface is likely to freeze.
Harvesting, conditioning, vase life: AM, SC, PF Harvest lilies when the buds are showing and just starting to "crack," meaning the sepals are starting
to separate from each other. Remove foliage that would be underwater but leave the top third of the leaves on the stem, as they will aid in proper development of unopened buds. Remove the anthers as the lilies open, to prevent pollination, which decreases vase life. A stem of lilies with multiple buds should last up to two weeks. Avoid overdosing with preservative or setting cut lilies in full sun.
Buring tips: Wide-open lilies should be avoided, as well as those with sepals starting to appear shear. Avoid stems with no foliage, as any remaining buds are likely to drop without opening.

A more complete discussion of lilies can be found in chapter 4.

Limonium latifolium sea lavender
hardy perennial zones 4-9
Part of plant used: ${ }^{\text {s. fresh, dried }}$
Нeight: $2 \mathrm{ft} .+$
Fragrance: In its prime, has a pleasing although not strong scent; however, stems left standing in the field too long, although still pretty, start to smell of cat urine.
A frothy silver dome-shaped inflorescence is carried on leafless well-branched stems that rise above flat rosettes of fleshy leaves. Persistent gray-silver calices surround papery lavender true flowers, giving fields of sea lavender a silvered appearance when seen from a distance. This is one of many plants of the "statice" group of driable flowers.

Another Limonium species, L. bellidifolium, is known commonly as caspia or in the floral trade as "cat's-pee-a," for reasons obvious to anyone with a working sense of smell. This species has teensy true flowers, in a pointed panicle rather than domed, looking grayer overall. The two species have been crossed, producing the hybrid Limonium latifolium 'Misty Blue', which smells nasty when it becomes old or is picked late.
Garden availability: summer and early autumn

Culture for cutting: FS, AvS (sandy)
All of the limoniums (including the popular annual statice, Limonium sinuatum) are easy to start from seed, with perennial forms giving years of production from very little monetary investment. They prefer sandy soil and coastal climates but are highly adaptable.
Harvesting, conditioning, vase life: AM, SC, PF Harvest at the height of its beauty, before any whiff of trouble arises. Flowers picked at the right time never develop the malodorous characteristic of stems left on the plant too long. It has been said that using floral preservative suppresses the stench of old flowers, but I have not found this to be the case. Should last two weeks in water. One of the best fillers available.
Buying tips: Your nose will be your guide, but also make sure you are buying a stem that is an open dome shape, not pointed at the apex. This should steer you clear of nasal offense. Avoid stems starting to shed.

Other handsome perennial statices to look forand these do not stink-are Limonium brassicifolium (seafoam statice), which is always purple and white, and Limonium perezii (lace-veil statice), which is being bred to have a wider variety of colors. Flowers known as German statice and rat-tail statice have now been separated into different genera from the limoniums.

Limonium sinuatum annual statice
annual, perennial in hardiness zones 9+
Part of plant used: fresh, dried Height: 18-24 in.
Annual statice is grown for its winged, well-branched stems of papery bracts, with white or yellow true flowers emerging from within. Bract colors vary widely and are commonly intense, including yellow (can have white or yellow true flowers), purple, sky blue, pink, and all white (bract and flower). For subtlety, grow the Art Shades, which are more
pastel, including a good peach shade with yellow true flowers.
Garden availability: summer, with some rebloom on early-harvested plants
Culture for cutting: FS, AvS (sandy)
Sow in situ in successive plantings starting just before the last frost date for your area, to harvest fresh flowers (or for drying) from July through frost.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the white (or yellow) true flowers have emerged from the colorful bracts but before these brown and shrivel. Statice picked too early may not last as long once cut, although in some forms flowering can be forced by conditioning in warm water. Virtually indestructible when dried, and nearly so when fresh, this flower has come to be disdained by flower snobs. I have always loved it. Those colors! When conditioning, scrape away the winged growth along the stem length that will be underwater, in addition to removing any leaves. Change the water often for maximum vase life, which should approach three weeks.
Buying tips: Statice picked so early it cannot be forced to produce the true white flowers rarely amounts to much. On the other end of the longevity scale, avoid shedding flowers or yellowing stems. If buying fresh by the bunch, examine the binding to make sure the stems are not starting to rot, a sure sign of advanced age.

## Lobelia siphilitica blue cardinal flower

hardy perennial zones 5-9
Part of plant used: fresh Height: 3 ft .
Blue cardinal flower is grown for its spear-shaped dense raceme of periwinkle blue flowers, each being somewhat larger than the florets on the commonly grown annual lobelia cultivars.
Garden availability: late summer, August into September

## Culture for cutting: PS, MS

A superior candidate for the partial-shade cutting garden. Can be grown in situ from seed; uncut stems will lead to a modest number of volunteers later. In any large population of Lobelia siphilitica seedlings, a few white-flowered plants will arise, $L$. siphilitca 'Alba', and they are handsome, too.
Harvesting, conditioning, vase life: AM, SC, P, NF
In fresh vase arrangements, blue cardinal flower will last more than a week, but the water must be kept fresh and the stems recut every two to three days. This is, however, a forgiving flower, and if its tips start to nod, it will perk up if recut and given new water.
Buying tips: Rarely seen as a cut flower, and in truth I have only recently experimented with it myself. Now I am recommending it to everyone! Make sure the lobelia is stored in clean water and the tips are firm.

## Lonicera $\times$ brownii 'Dropmore Scarlet’ scarlet trumpet honeysuckle

semi-evergreen vine
zones 6-9
Part of plant used: se fresh Height: 12 ft .
The vining honeysuckle 'Dropmore Scarlet' is grown for its clusters of tubular red-orange flowers, opening just at their tips to reveal a gold interior.
Garden availability: somewhat random, although heaviest bloom in the spring
Culture for cutting: PS, AvS
In areas with hot summers, 'Dropmore Scarlet'
will bloom well with only a little morning and late afternoon sunlight.
Harvesting, conditioning, vase life: AM, SC, PF Many of the vining honeysuckles make great cut flowers, lasting better than a week in water; divine draping out of big basket arrangements. I chose to discuss this one because it has been so floriferous for me.
Buying tips: Cut honeysuckles are rarely seen for sale.


Lonicera nitida 'Baggesen's Gold'

## Lonicera nitida 'Baggesen’s Gold’ boxleaf honeysuckle

woody evergreen shrub zones 6-9 Part of plant used: fresh Height: 4 ft .
'Baggesen's Gold' is a handsome foliage plant with small, boxwood-like leaves, which, luckily for its name, are golden yellow.
Garden availability: year-round
Culture for cutting: PS, AvS
'Baggeson's Gold' will sunburn in too much light. Harvesting, conditioning, vase life: AM, SC, PF

I am amazed this has not yet taken the floral indus-
try by storm, as it is such a good foliage plant, and without the foxy scent of the boxwoods; lasts two weeks in water or foam.
Buying tips: Rarely seen for sale, but if you do find it, make sure the leaves are not brown at their edges, indicating an overdose of preservative.

## Loropetalum chinense 'Razzleberri' fringe flower

woody evergreen shrub zones 8-9
Part of plant used: fresh fresh Height: 6 ft .
Fragrance: flowers lightly fragrant, with some spiciness
The 'Razzleberri' cultivar is grown for both the shaggy electric pink flowers (which look like witch hazel, only with slightly wider petals) and the purplebrown foliage (leaves 2 inches long). The plain species has white flowers and green leaves.
Garden availability: flowers, late winter or early spring; foliage, year-round
Culture for cutting: PS, AvS
A great partial-shade or woodland plant that likes warm summers and tolerates humidity. There are several handsome specimens of this in the Memphis Botanic Garden that bloom well into April.
Harvesting, conditioning, vase life: AM, SC, PF The foliage can last two weeks in foam, longer in water. I have used this in stage arrangements accompanying flowers of varying degrees of white and cream, making a handsome, understated partnership.
Buying tips: This is just starting to appear on the market as a cut foliage. It takes a while for the plant to recover from having a lot of foliage taken, and this may be why it is slow to become available. The leaves are slightly shiny, and this quality disappears on old foliage.

Lunaria annua money plant, honesty
annual, B zones 5-9
Part of plant used: 黑 fresh dried
Нeight: to 3 ft .
Fragrance: light, pleasing
Lunaria produces four-petaled magenta flowers, to $1 / 2$ inch wide, in clusters. If the flowers are left, they form flat seed heads. The tough, fleshy outer coat of these can be stripped off as it dries, revealing a translucent "window" that is dry, papery, and shiny. Each pod is about the size of a fifty-cent piece, hence the common name.
Garden availability: blooms in June
Culture for cutting: FS/PS, MS
Easily grown from saved seed, which drops out of the ripe seedpods as you strip off the outer pod walls. Can become a nuisance.
Harvesting, conditioning, vase life: AM, SC, P, NF Flowers are lovely in cottage garden bouquets, lasting a week or so. Seedpods can be cut on long stems to dry indoors, or they will dry in place (and spread their seeds).
Buying tips: Usually the dried seed stems are sold in bunches; be sure when selecting a bunch the "money" has not been damaged by rough handling.

Lupinus lupine
hardy perennial zones 5-8
Part of plant used: fresh Height: to 5 ft .
Fragrance: spicy, ground-black-pepper scent; distinctive but not unpleasant
Lupine carries spear-shaped spikes of inflated pealike flowers on tall racemes. The Band of Nobles Series and the shorter Russell hybrids are the preferred lupine cultivars for cutting. Can be any color, including coral and brick red, white, dark or light yellow, blue, purple; the flowers are often bicolored.
Garden availability: early summer and midsummer, with some repeat, especially if the plant is not allowed to set seeds


Lupinus Russell hybrids

## Culture for cutting: FS, AvS

Be sure to give lupine adequate water, as stressed plants are susceptible to aphid attack, which will contort the flower stems and cause buds to abort. The best flowering occurs in long, cool rainy springs.
Harvesting, conditioning, vase life: AM, SC, PF Lupine stems last more than a week in water, and keeping the water clean is vital. Harvest when only the first two to three lowest rows of buds have opened. More will open once the stem is arranged.
Buying tips: Avoid lupines with unnaturally pale flowers, blackening foliage, or dropping buds. Any of these symptoms indicate excessive cold storage, or show that the stems spent too much time bunched in a plastic sleeve (which lupines hate).

Lychnis coronaria
rose campion
biennial, hardy perennial zones 4-8
Part of plant used: sesh
Rose campion has mossy silver-white stems and leaves, topped by branching cymes of 1-inch-wide flat flowers in varying degrees of shocking fuchsia. A screaming color. For those with delicate sensibilities, try Lychnis coronaria var. occulata, which has white flowers with pale pink eyes; equally attractive but in a whole different way.
Garden availability: late May through summer Culture for cutting: FS, DS

This classic "pass-along" plant is often seen growing rampant where it has been neglected. Seedlings are shallow rooted and easily thinned as necessary.

Remove spent flowers to both prolong bloom time and prevent excessive self-seeding.
Harvesting, conditioning, vase life: AM, SC, NP, NF
Cut the stem with as much length as possible. Individual flowers last only three to four days, but buds showing color will open. Striking massed in a simple vase with ornamental grasses for accent. Buying tips: Rarely seen for sale except in farmers' market bouquets, where it evokes its old-fashioned charm.

## Lysimachia clethroides

gooseneck loosestrife, geese-go-walking
hardy perennial zones 4-9
Part of plant used: ${ }^{2}$ fresh Heicht: 3 ft . +
The name geese-go-walking comes from the elegant white inflorescence, composed of tiny white flowers held aloft on a tapering dense raceme that dips at its tip in the direction of the strongest light source. All of the flower stems in a clump will face the same way, making these almost cuter in the ground than when put in a vase facing every-which-way.
Garden availability: mid-to-late summer
Culture for cutting: FS, AvS
You should be warned: like other species of $L y s i-$ machia, this can spread by shallow runners. Easily pulled up but annoying in overabundance. One way to control it is to give the flower stems a sharp yank when harvesting, removing some root.
Harvesting, conditioning, vase life: AM, SC, PF
These geese can last two weeks in water, slightly less in foam. Try to work with the natural grace of the arched tip-do not expect this to stand straight like a javelin. If the tips go droopy, recut the stem and freshen the water, which should quickly return them to half-mast.
Buring tips: Do not be dissuaded by the nodding tips. They are supposed to look like that. Touch them to make sure they are properly turgid. If they are truly limp, avoid them. Also, the foliage should look fresh and green.


Macleaya cordata

## Macleaya cordata plume poppy

hardy perennial zones 4-9
Part of plant used: 䵮 fresh fresh
Неight: 6-8 ft.
Grown for the fizz of tiny florets, reading as a dusty coral color from a distance, massed into tall panicles. The foliage is also useful, being large, lobed gray-green leaves, silver-white on the underside. The foliage is carried on 8 -to-10-inch-long petioles, which are firm and easy to use.
Garden availability: mid-to late summer
Culture for cutting: FS, AvS
Be advised: this towering, handsome plant is a
spreader, covering a lot of ground with shallow runners. These are easily pulled, or grow plume poppy in a raised bed, where the runners hit the edges and stop. Does not like to be grown in containers: I tried planting this in a five-gallon pot in the ground and was not successful.
Harvesting, conditioning, vase life: AM, SC, PF Harvest the flowers of plume poppy anytime after the bottom branchlets just start to open. Plume poppy has a bright orange, latex-like sap. It does not ooze and is not toxic to other flowers, but it might stain your clothes. The flowers are an excellent summer filler, especially where a warm but not strident color is wanted. The foliage is handsome and blends well with tropical flowers. Both flowers and foliage last around ten days in water or foam. Buying tips: The foliage is rarely seen for sale. The flower panicle should feel soft to the touch and should not be shedding.

## Magnolia denudata lily tree

woody deciduous shrub (small tree) zones 6-9
Part of plant used: 墨 fresh Height: 30 ft .
Fragrance: light and lovely, of a citrusy nature
This shrub or small tree carries elegant, in fact exquisite, gardenia-white flowers, goblet shaped with petals each 3 to 4 inches long, the whole being more than 6 inches wide. Blossoms are pale yellow-green when they first open, then whiten quickly. Flowers open on bare branches before the spring leaves emerge, giving cut stems a spare, minimalist feel.
Garden availability: March and April
Culture for cutting: FS, AvS
Give this magnolia room to develop its canopy without crowding. It may take a young plant five to seven years to begin flowering, but it will then produce more flowers each year.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Symbolic of spring's return after a hard winter,

Magnolia denudata is best used in large arrangements where mature branches can be displayed to their majestic advantage. Harvest when the first bud on a stem is nearly open. Lasts a week or longer in water or foam. Any buds showing color when picked will open.
Buying tips: Make sure any type of magnolia you choose has not had buds knocked off, and emergent flowers do not have brown edges, indicative of excessive cold storage.

Mahonia aquifolium Oregon grape
woody evergreen shrub zones 6-9
Part of plant used: $\stackrel{A}{*}$ fresh fresh
Неight: 3-5 ft.
This Pacific Northwest native shrub is used more for its glossy, green-to-bronze foliage than for its yellow flowers (dense terminal racemes, in spring). The leaves are composed of nine leaflets, each spiny but not as stiff and unforgiving as Ilex aquifolium. In autumn and winter the leaves turn to decorative bronze, sometimes splotched with vermilion, persisting until new foliage pushes the old foliage off of the plant. In my experience the round blue fruits are not long lasting when cut (they make a fine jam, though).
Garden availability: foliage, all year
Culture for cutting: PS, AvS
This species and its numerous subspecies and hybrids are understory woodland plants, ideal for the shady cutting garden. Older plants become leggy, so regular harvesting of foliage branches ensures a bushier, more attractive shrub.
Harvesting, conditioning, vase life: AT, SC (woody), PF
Oregon grape lasts longer in arrangements than English holly (more than three weeks) but must be in water if long-term cold storage is required. Much preferable to holly because the leaflet spines, while mildly annoying, are not as vicious. After all,
this is not a poisonous plant, and English holly is. This foliage has avoided the strong association with Christian and Druid winter holidays and so can be used over a much longer period.
Buring tips: The leaves should be glossy. Old foliage that has been out of water too long during shipping will have a matte surface.

## Miscanthus sinensis ‘Gold Bar' eulalia

hardy perennial (ornamental grass) zones 4-9
Part of plant used: fresh Height: 3-4 ft.
Miscanthus is known for the variability of color of its blades, and the kinked shock of "hair" on its emerging inflorescences. 'Gold Bar' has a sturdier growth habit, slightly wider foliage than the species type, and random-width sun-gold horizontal stripes. It is easier to place in the garden and less likely to need staking.
Garden availability: late May through the summer
Culture for cutting: FS, AvS
Other miscanthus will become leggy and floppy if not grown in full sun. Remove all old brown stalks anytime from late fall until late winter, making room for the new shoots in spring. 'Gold Bar' is not fast growing and not likely to try to take over.
Harvesting, conditioning, vase life: AM, SC, PF The stems and blades (individual leaves) of this grass last more than ten days in water. The blades are too soft to insert in foam, but whole stems work fine.
Buying tips: Make sure the blades are brightly colored to the edges. Browning margins indicate old stems or an overdose of preservative.

## Moluccella laevis bells-of-Ireland

annual
Part of plant used: fresh, dried Height: 3 ft .
Fracrance: a fresh "green" or hay scent, and strongly


Miscanthus sinensis ‘Gold Bar'
honey-scented when picked during warm weather Tall stems of densely held white two-lipped flowers are overshadowed by the surrounding bell-shaped green calices. These are persistent long after the true flower has shriveled. Florets are configured in whorls around the leaf axils. Leaves extend beyond the flowers and are usually removed; they detract from the flower form and do not last as long as the calices will. The whole dries to a warm tan color, becoming fragile but still intriguing.
Garden availability: late June onward, from seedgrown plants
Culture for cutting: FS, AvS

Seeds can be started early in a greenhouse or planted in situ after your last frost. In partial shade the stems will elongate, which in this case exposes gaps of bare stem in between the whorls of flowers. Harvesting, conditioning, vase life: AM, SC, PF Harvest when all of the calices are fully expanded. The primary stem on each plant will be the tallest and straightest, but side stems are also useful if not too curved. In addition to the usual removal of leaves below the water line, pinch off any axial leaves you find excessive or unsightly. Lasts ten days in water or foam.
Buying tips: The green calices will start to become transparent, losing their vibrant color, when over the hill. Old stems turn yellow.

## Monarda didyma bee balm, bergamot

hardy perennial
zones 4-9
Part of plant used: ${ }^{0}$ fresh, dried
Height: $3 \mathrm{ft} .+$
Fragrance: Strongly citrus; the flowers and leaves are used to flavor tea and give Earl Grey its unique aroma. Reeks of summer.
Bee balm has shaggy whorls of tubular flowers, often with colorful bracts. There are usually two whorls per stem but sometimes more. Colors include white through pink, plus several shades of red, violet, lavender, and near purple. The white can seem dingy as it fades. The bracts below the whorl are green but can show a hint of color. After flowering, the ovaries and bracts are dense, persistent, and driable. Good cultivars: 'Beauty of Cobham' (lavender with purple bracts), 'Gardenview Scarlet', 'Marshall's Delight' (brightest pink).
Garden availability: beginning in late spring and continuing to at least some degree-depending on the cultivar in question- if the plants are not allowed to set seed
Culture for cutting: FS, AvS
Monardas can be afflicted with powdery mildew, but some of the historic cultivars, such as 'Cambridge


Monarda didyma 'Cambridge Scarlet' with Lysimachia clethroides

Scarlet', are quite resistant. Dutch plantsman Piet Ouldoof is developing new resistant forms; look for those named for the signs of the zodiac, such as 'Aquarius' (which is lavender). Monardas become floppy in too much shade, although they will flower. Harvesting, conditioning, vase life: AM, SC, PF These "Dr. Seuss" flowers last ten days or so in water or foam. Harvest when the florets nearest the stem, toward the center of the whorl, have opened; they will progress from the inside out. When spent florets shrivel and fall, and if you have not used preservative, gather them to add to your tea.
Buying tips: Monarda should be purchased when only a third of the florets have opened and the stem foliage looks fresh. Gray patches develop on leaves stored too long in plastic sleeves.
hardy perennial bulb
Part of plant used: fresh Height: 8-10 in.
Fragrance: pleasantly scented, a perfume similar to but not as carrying as Hyacintbus orientalis
The adorable blooms of grape hyacinth-short scapes of nearly spherical bells close-packed in pointed racemes-are like little blue grapes with a touch of white around the lip. Other species and hybrids include shades of purple, white, and pale to medium blue, and there is a yellow species. Good forms are Muscari armeniacum 'Valerie Finnis' (light blue) and M. neglectum (blue-black flowers), and if you want white there is $M$. botryoides 'Album', but I am so partial to the blue forms that the white one always looks to me as if it has just crawled out from under a rock.
Garden availability: March and April, although easily forced to bloom earlier
Culture for cutting: FS, DS
This is a good bulb for waste places in full sun, with little supplemental water. Naturalizes quickly from seed and offset bulblets. This species tolerates deciduous shade, but flowers more freely in the sun. Interestingly, the foliage of this species arises in autumn after summer dormancy, then gets beat to the ground by the vagaries of winter, and new foliage is produced yet again right after flowering. Seems like a lot of work for such little bulbs, bless their hearts.
Harvesting, conditioning, vase life: AM, SC, P, NF Grape hyacinth is too fragile to insert into foam. It lasts in water about a week, if picked when the bottom third of the little bells have opened. Maintain fresh water, as this little guy is a heavy drinker.
Buying tips: Examine proffered stems carefully to make sure the flowers are not shriveling and the stems are firm.
Myosotis sylvatica forget-me-not
biennial zones 5-9
Part of plant used: fresh Height: 12 in.
Forget-me-not is grown for its classic tiny blue florets, with a yellow or white eye and six petals, carried in dense cymes on hairy stems. An outstanding variety from England is Myosotis sylvatica 'Music', but I have never seen it for sale on this side of the big pond, nor have I found seeds of it while over there. 'Music' is a darker, brighter blue and makes a more erect, bushy plant. I saw it in flower outdoors in the rain at Kew in May 1996 and have never forgotten it.
Garden availability: early-to-mid spring, usually into May
Culture for cutting: FS/PS, AvS
Spreads freely from seed. Often beset by powdery mildew as the flowers finish; it is best to pull out the plants at that time rather than witness their unsightly decline.
Harvesting, conditioning, vase life: AM, SC (submerge), NP, NF
Harvest the stems as long as possible and after deleafing them, submerge the whole stem, including the flowers, in cool water for at least two hours. Assuming proper conditioning, the cut stems, so choice when added to nosegays, should last a week.
Buying tips: Usually offered only as a component in premade nosegays. Be sure the florets are not shedding.

## Nandina domestica heavenly bamboo

woody evergreen shrub zones 6-9
Part of plant used: fresh fresh Height: 6 ft .
The handsome bamboolike foliage of heavenly bamboo takes on fabulous autumn tints including red, orange, and gold. Shrubs flower in midsummer, with creamy white florets in statuesque panicles, but these are not long lasting, and it is best to leave the flowers to form the showy red berries that persist through autumn and winter. Plant snobs sniff at this plant, for it is sometimes badly used in landscapes, but when well grown and in the right setting, this is a very useful and becoming shrub. Look for the form called 'Plum Pudding', which has foliage turning more purple than red.
Garden availability: foliage, autumn through early spring; berries, late September onward
Culture for cutting: FS, AvS
Should be given a sheltered position in the lower reaches of its hardiness; dry winter winds can damage the foliage. Plants become leggy, and not as colorful, in partial shade.
Harvesting, conditioning, vase life: AT, SC (woody), PF
The foliage of heavenly bamboo is so extremely long lasting that my students who have done science experiments on the foliage have become bored with it by the end of the assignment. As long as the water is fresh, the foliage can last four weeks. Stems of berries last more than two weeks.
Buying tips: When buying berries, make sure they are shiny, indicating freshness. Foliage stored in coolers for too long will shed, and this may also happen if the water is not regularly changed.

## Narcissus daffodil, jonquil

hardy perennial bulb zones 4-8
Part of plant used: © fresh Height: 8-18 in. Fragrance: Most daffodils are fragrant, and tender forms have the strongest (although not necessarily the most pleasant) scent.
Narcissus species and hybrids produce large solitary or smaller loosely clustered flowers with a corona of outer petals and a central trumpet. The stems are leafless. Colors range from white through all shades of yellow, peach to nearly pink, and orange, and certain species have a short trumpet outlined in red. There are double forms.
Garden availability: late winter to late spring
Culture for cutting: FS, AvS
The flat green-bladed foliage emerges with the flower buds, and the bulbs should be planted deeply to aid in perennialization. Narcissus is sensitive to boron deficiency in the soil, which will keep it from flowering.
Harvesting, conditioning, vase life: AM, SC (rinse), PF
Narcissus buds emerge from the ground pointing up and will turn to a 90-degree angle just as they start to open, and this is when they should be picked. Buds harvested too early may not develop. Narcissus sap is toxic and can irritate sensitive skin; the stems should be rinsed in plain water before resting in water with other flowers. These flowers prefer preservatives with slightly more sugar than acid-if in doubt, no preservative is better. Daffodils picked just as the flowers are opening, and properly conditioned, should last a week.
Buying tips: Avoid flowers that look shear or with petals that appear dry at their edges. Flowers with trumpets pushing past undeveloped petals were picked too early and will not open properly.

There is a thorough discussion of narcissus in chapter 4.


Nerine bowdenii arranged with Rosa 'Eden', Sedum 'Autumn Joy', and Viburnum opulus var. xanthocarpum

## Nerine bowdenii Guernsey lily

hardy perennial bulb zones 8-10
Part of plant used: fresh Height: 18 in.
Fragrance: The flowers bear little sent, but the cut stems smell oddly of stagnant water.
Guernsey lily produces strong scapes crowned with an umbel of widely flaring trumpets (to 3 inches each) of cotton-candy pink. Strappy, narcissuslike foliage appears in spring and is dormant by mid-July. The flowers, therefore, arise without foliage adornment, nor do they need it.
Garden availability: late summer and well into fall
Culture for cutting: FS, DS
Bulbs can be planted in early spring, and the foliage will emerge quickly. Summer irrigation should be minimal, and sharp drainage in the winter is preferred.
Harvesting, conditioning, vase life: AM, SC, PF When harvesting the clean stems of nerine, you may notice a light but strange scent that smells like water standing in a drainage ditch. As long as the stems are kept in fresh water, the smell will be suppressed. Individual florets take a long time to open; cold storage is rarely necessary (unless you do not want them to open at all!). Hence, one stem can look marvelous for three weeks in a vase, slightly less in foam.
Buying tips: Avoid stems displayed in water that smells funky. Purchase when the first or second floret is open and more are expanding.

## Nicotiana flowering tobacco

annual, or tender perennial zones 8+
Part of plant used: fresh Height: 2 ft .
Fragrance: sweet, most noticeable in the evening The Nicotiana cultivars 'Appleblossom' and 'Lime Green' are grown for their handsome tubular flowers with five-pointed flaring petals, opening to 2 inches wide.

Garden availability: by July if sown in a greenhouse in early spring, earlier if overwintered; until late autumn if deadheaded
Culture for cutting: FS, AvS
Most gardeners treat these plants as annuals.
Harvesting, conditioning, vase life: AM, SC, P, NF Nicotiana will continue blooming, producing longer stems, if side shoots are harvested to the main stalk. Cut when the first two or three flowers in the loose cluster have opened. Lasts more than a week in water.
Buying tips: Rarely offered for sale, but 'Lime Green' has become a regular feature of summer bouquets at farmers' markets. Perhaps too fragile to ship. Old stems shed their spent flowers even as new buds open.

Nigella damascena love-in-a-mist
hardy annual
Part of plant used: fresh fresh, dried Height: 20 in.
Fragrance: none, alas!
Love-in-a-mist is grown for its flowers and the decorative seedpods that develop quickly from the noticeable green superior ovaries after the sepals and petals have faded. The flower is surrounded by a hazy circlet of finely divided-threadlike-green foliage, the "mist" of the common name. This persists when the seedpods dry. The flowers, composed of both showy sepals and smaller petals, can be several shades of blue (best strain: the Miss Jekyll Series), white, and pink. There is also a lovely wine-colored selection, called either 'Mulberry' or 'Mulberry Rose' (they are the same), the seed of which is occasionally available. The seedpods are sometimes striped with burgundy, depending on the weather as the seeds mature. The seedpods are full of largish black seeds that taste like violets smell and that are an inventive substitute for poppy seeds in baking.


Nigella damascena Miss Jekyll Series
Garden availability: May, from seeds shaken out of the pods during the previous year's harvest; midsummer through autumn from successive plantings Culture for cutting: FS, DS

Although usually cited as a plant of waste spaces and fallow fields, nigella will flower better, on taller stems, if given even a smattering of consideration in the form of a bit of irrigation during dry spells and a manure mulch over the seedbed in winter. Always sow seed in situ.
Harvesting, conditioning, vase life: AM (pods, AT), SC, PF
It really is a quandary: cut for the fresh flowers or wait for the pods? If you want the plants to keep flowering, you must keep the flowers picked so they do not set seed. If you plan to harvest the pods, pick
them when they are fully expanded but still green (you should hear the loose seeds inside when you shake them). Pods dried on the plants will be fairly fragile to handle. Fresh flowers last about a week.
Buying tips: When you buy the flowers, the petals should not be shriveling and discoloring, although buds showing color will open as their elders fade.

Origanum ornamental oregano O. 'Barbara Tingey', O. 'Kent Beauty', O. laevigatum, O. rotundifolium
hardy perennial (subshrub)
zones 5-10 (depending on the form)
Part of plant used: fresh, dried
Height: 10-24 in.
Fragrance: closely related to culinary oregano but not as pungent
Ornamental oregano has an unusual inflorescence with panicles of teensy flowers enclosed or obscured by showier hop-shaped overlapping green bracts, which are often flushed with pink or purple. All forms can be dried.
Garden availability: midsummer through autumn
Culture for cutting: FS, DS
If you want your cutting garden to slop over into your herb garden, this is the genus of plants for you. Excessive watering in rich soil will cause the showier forms of oregano, such as 'Kent Beauty', to flower themselves to death. Oregano would prefer to struggle.
Harvesting, conditioning, vase life: AM, SC, P, F Keep in mind that the showy oreganos, if organically grown and not stored in preservative first, can be used as edible decorations (although they may contain more fiber than the standard daily allowance). For drying, harvest before any of the bract segments have started to go brown. Fresh stems last ten-plus days.
Buying tips: Fresh stems should have plump-looking bracts, and the true flowers should be visible.
hardy perennial
zones 3-8
Part of plant used: $\mathscr{E}_{\text {e }}$ fresh, dried
Height: $2 \mathrm{ft} .+$
Fracrance: variable from hybrid to hybrid but generally wonderful
Although its foliage is somewhat decorative, peony is grown for its globular, showy flowers, which may be single or very double, with intermediate forms. Generally, the double forms last long when fresh and are prettier when dried. Colors range from white to true red, burgundy, coral, all shades of pink, magenta to near purple, and creamy yellow.
Garden availability: May into early June
Culture for cutting: FS, AvS
Peonies arise from thickened stems, and the growing points, or eyes, on these roots should be positioned shallowly, right at the soil surface. Full sun produces many more flowers than partial shade.
Harvesting, conditioning, vase life: AM, SC, PF Harvest peony in the "soft marshmallow" stage, when the first petal or two is emerging from the calyx and the bud is soft when you squeeze it. If you have cold storage, peonies can be stored for weeks before they are needed. Remove only the leaves that would be underwater. If picked at the right stage, peony will last over a week in water or foam.
Buying tips: Purchase before the flowers are completely open. Check the petals on the back of the flower to make sure they are firm - these will be the first to show their age.

There is a more thorough discussion of peonies in chapter 4.


Panicum virgatum 'Heavy Metal'

Panicum virgatum switch grass
hardy perennial (ornamental grass) zones 5-9
Part of plant used: fresh, dried © fresh Height: $3 \mathrm{ft} .+$
Fragrance: hay!
This ornamental grass is grown for the cultivars that have blue-green or reddish foliage, and a misty inflorescence to match-some quite purple. Pretty cultivars to grow are 'Heavy Metal' (compact) and 'Dallas Blues' (taller, to 5 feet).
Garden availability: midsummer through frost;
becomes golden brown and, for me, less compelling when mature

## Culture for cutting: FS, AvS

When grown in overly fertile soil, some of the tall named forms can get floppy. Easily divided.
Harvesting, conditioning, vase life: AM, SC, PF
If you harvest the stems down low, they will be strong enough to be inserted in wet foam. The foliage is not as long lasting as the inflorescence (which can last more than ten days in water) and does not dry well, shriveling and losing its color. Harvest the inflorescence when it is well colored but before it starts to turn $\tan$ or gold.
Buying tips: Avoid buying if the foliage shows signs of age and the inflorescence is drying up.

## Papaver nudicaule (syn. P. croceum)

 Iceland poppybiennial, hardy perennial
zones 2-8
Part of plant used: ${ }^{\text {a }}$ fresh dried Нeight: 12-15 in.
Papery, translucent flowers to 3 inches wide, shaped like an open bowl, on green stems clothed in brown fuzz. Flower colors: white and pale yellow through bright yellow, tangerine, orange and coral, and nearly, but not quite, true pink. The small pods can be harvested and dried once the petals have fallen.
Garden availability: midspring to midsummer Culture for cutting: FS, AvS

Iceland poppies are somewhat short-lived and are best replaced every other year for maximum flower production. The plants are usually available as seed strains or flats of mixed colors.
Harvesting, conditioning, vase life: AM, heat seal, P, NF
Harvest the flower stems when the fuzzy calyx has split and the first pleated petal is just visible. Because of their milky sap, which bleeds out and clogs the xylem, stems from all members of the Papaver genus need heat sealing: the ends should be either sealed with a candle flame or dipped in hot water $\left(160^{\circ} \mathrm{F}\right.$ to boiling) for ten seconds. The flowers will then
last five or so days in water. (Do they continue to drink after they have been sealed? I would like to know.)
Buying tips: Check to see that the stem end has been sealed, or ask the vendor if the stems were rinsed. If the fuzzy calyx is intact and color is not showing, the stem may or may not bloom. I like to see what I am getting.

Pelargonium geranium
annual, tender perennial zones 9-11
Part of plant used: fresh fresh, dried Height: 2 ft .
Fragrance: Scented geraniums are, indeed, distinctly scented with oils in the leaves mimicking the fragrances of other nonrelated flowers and fruit. For instance, Pelargonium crispum equals lemon, $P$. graveolens equals rose, $P$. odoratissimum equals apple. Other scents include coconut, cinnamon, Old Spice, almond, and hazelnut. Cultivars grown for their flowers are also scented, sending aloft a distinctive aroma, especially the zonal types.
Many Pelargonium species have fancy leaves (palmate, dissected, scalloped, zonally colored), suitable for collaring nosegays. The flowers grow in clusters with stems as long as or longer than the stems of sweet peas, making them equally useful as cut flowers for short arrangements. Flower colors can be anything except yellow or blue (including contrasting streaks, splashes, and outlines). Individual florets can be as large as azalea florets. Leaves woven into fresh wreaths meant to dry after construction will retain their scent for many weeks.
Garden availability: flowers, late spring through autumn; leaves, year-round if the plants are wintered in greenhouses or manage to limp through a mild winter
Culture for cutting: FS, AvS
Usually grown in containers where the plants are not hardy. Select forms with scents and colors you

like, and look for the longest leaf stems (petioles) and flower stems (peduncles) for versatility when arranging.
Harvesting, conditioning, vase life: AM, SC, P, NF It has been said that floral preservative can inhibit scents in leaves and flowers, but in the case of pelargoniums, I have not smelled this to be true. Harvest leaves when they are bright green and crisp, and cut the flowers when the cluster has less than half of the florets open. Foliage can last two weeks in water, flowers more than a week.
Buying tips: Rarely offered for sale except as essential oils or dried and crumbled for potpourri.

## Pennisetum fountain grass

P. alopecuroides 'Moudry', P. setaceum 'Purpureum' (syn. 'Atrosanguineum')
hardy perennial (ornamental grass)
zones 6-9 ('Moudry'), 9-10 ('Purpureum')
Part of plant used: fresh Height: 3-4 ft.
These forms of fountain grass (so named for the graceful, arching habit of the plant) are used for the inflorescence, which looks black in the case of 'Moudry', due to the dark tails on the forming seeds, and appears red in the case of 'Purpureum'. Neither form dries well, tending to shatter and lose color. 'Purpureum' also has burgundy/red foliage, but this is thin-leaved and not strong.
Garden availability: late summer and autumn, with continued blooming if harvested
Culture for cutting: FS, DS
The crowns of 'Moudry' do not tolerate consistently wet soil and will rot away without sharp drainage. 'Purpureum' is a summer annual in zone 8 and lower.
Harvesting, conditioning, vase life: AT, SC, NP, F Harvest when the color of the inflorescence is strong. Preservative will lighten the color of either form. Both last well for a week in either water or foam.


Pennisetum setaceum 'Purpureum'

Buying tips: Purchase at the height of color intensity. Any foliage present should not look dried or shriveled, although in the case of 'Purpureum', the foliage does not last nearly as long as the seed head.

Penstemon beardtongue
hardy perennial zones 3-9
Part of plant used: fresh Height: 18-36 in.
The showy tubular flowers of penstemon have flaring lips and are available in brilliant colors: purple, coral, red, burgundy, and most shades of pink, sometimes with white interiors and/or streaks of contrasting color on the lower lip petals. Flowers are borne in loose racemes, or more unusually, in panicles, with many flowers per stem. Good forms are 'Blackbird' (very dark burgundy), 'Evelyn' (pink/pale-coral slender flowers), ‘Husker's Red’ (white flowers with dark stems, foliage, and calyx), Kissed Series (white with vividly colored lips in coral, cerise, or purple), 'Midnight' (syn. 'Blue Midnight', dark royal purple), 'Sour Grapes' (electric violet-purple), and 'Stapleford Gem' (pale lavender/blue outside, white inside). ('Sour Grapes' and 'Stapleford Gem' got their names switched en route to the United States. The reference books have gotten it right, but some nurseries still have it wrong, so inquire before purchasing plants that are not in bloom.)
Garden availability: late spring, with many forms reblooming after a complete or partial harvest Culture for cutting: FS, DS

Penstemons are shorter-lived where they are pampered with too much winter moisture and excessively rich soil. These North American natives are used to, and prefer, a hard life. If you want maximum flower production and are willing to replace the plants frequently, treat to regular feedings of manure and blossom booster. They will bloom themselves silly.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when half of the flowers are open. Cut stems of most forms last more than a week in water. 'Husker's Red' (already widely available in its season as a cut flower) lasts well in foam.
Buying tips: Half the flowers on the stem should be open. Give the stem a gentle shake to make sure it is not shedding flowers and buds.
Perouskia atriplicifolia Russian sage
hardy perennial zones 4-8
Part of plant used: 送 fresh, dried Height: 4 ft . Frag rance: Possessed of an intense aromatic scent. Those who like the scent compare it to intensely strong culinary sage. Those of us who do not like it find the scent reminiscent of newly paved roads on a hot day. This plant's odor is so pungent to me that I do not use it. (A cultivar of this was named Perennial Plant of the Year some years ago. I ignored the whole celebration.)
Tall, airy spires of gray-branched stems clothed with tiny, fuzzy two-lipped blue flowers. Foliage is gray-green and highly dissected. The flowers have a fragile hold on their stems and after drying are easily broken. Either spray with a fixative to hold it all together, or allow fresh stems to dry upright in the vase where you want to display them.
Garden availability: midsummer through midautumn Culture for cutting: FS, DS (sandy)

Often included in herb gardens, where conditions are usually to its liking, dry with poorish soil.
Harvesting, conditioning, vase life: AM, SC, PF
Harvest when about half of the tiny blue flowers are open. Lasts more than a week in water, slightly less long in foam.
Buying tips:
Avoid stems when most of the florets have shed, indicating late harvest, excessive storage, or fouled water.


Persicaria bistorta 'Superba’

Persicaria bistorta red bistort
hardy perennial
zones 3-10
Part of plant used: fresh Height: 30-36 in.
The cultivar of Persicaria bistorta known as 'Superba' is the one I recommend for cutting. It has elongated flower spikes of pink florets atop naked green stems arising from low, coarse foliage.
Garden availability: late spring and well into summer, with some repeat if kept harvested
Culture for cutting: FS, MS
These plants are spreaders, with foliage that shades and crowds less vigorous neighbors. Some Persicaria species (which may also be known as knotweed) may be on the noxious weed list in your area. If
you live in an area where Persicaria campanulata has gone wild (as in the coastal Pacific Northwest), its branching stems of tiny cream or pale pink bells make an excellent, long-lasting (a week plus) filler flower.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when the flower head is just fully open, cutting the stems as long as possible down into the foliage without actually cutting any leaves. Lasts more than a week in water.
Buying tips: Avoid stems with lower florets starting to brown.

## Phalaris arundinacea var. picta ribbon grass, gardener's garters

hardy perennial (ornamental grass) zones 4-9 Part of plant used: fresh Height: 3 ft .
Gardener's garters is grown for its 1 -inch-wide blades of grass, bright green liberally variegated vertically in white. (The variety 'Feesy' can be pink at its base, or blush pink after mild autumn frosts.) Phalaris does flower, but the flowers are best removed quickly to encourage foliage production and prevent more rampant spread. This grass is capable of spreading fast enough without seedlings.
Garden availability: anytime after early June, through autumn

## Culture for cutting: FS, MS

A fierce spreader, especially in the moist soil it loves best. In drier soil it will not run as rapidly.
Harvesting, conditioning, vase life: AM, SC, PF
Harvest anytime the stems are strong enough. Lasts ten days in water, slightly less in foam.
BuYing tips: Avoid blades with brown streaks or patches. Water should be fresh.

Philadelphus mock orange
P. purpureomaculatis 'Belle Etoile', P. virginalis
'Virginal'
woody deciduous shrub zones 5-8
Part of plant used: fresh Height: 6-10 ft.
Fracrance: similar to that of orange and lemon blossoms; delicious and carrying, especially in the evening
Grown for its crisp white flowers, shaped like an open cup, to 2 inches wide (Philadelphus virginalis 'Virginal' is double), carried singly or in clusters of three to five at leaf axils and terminally. Pbiladelphus purpureomaculatis 'Belle Etoile' has white flowers stained with purple at the center.
Garden availability: May to midsummer with unpredictable scant repeat
Culture for cutting: FS, AvS
These easygoing shrubs bloom on year-old wood. You can easily keep them smaller by regularly harvesting the flowers (think of flower harvesting as pruning). Most new shoots are produced in late summer.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Can be forced once the flower buds have started to enlarge, gaining a few weeks on their season. Handle postharvest as for woody plants. Lasts ten days in water or foam.
Buying tips: Look for healthy foliage, and flowers just opening.

## Phlomis russelliana Jerusalem sage

hardy perennial zones 4-9
Part of plant used: s. fresh, dried
Нeight: 3-4 ft.
Grown for the tall square rigid stems of salvia-shaped flowers carried in dense whorls at the leaf axils. The flowers are buttercream yellow. Each axil has two opposite leaves, gray-green. The stems are
naked in between the whorls. Spent florets shrivel quickly, leaving a persistent tight-packed cluster of chalice-shaped seed cases, and when the leaves dry, the stems can be cut and air dried. These elegant, structural stems (to say they look like poodle tails insults them) look remarkably handsome sprayed gold for the holiday season. I cannot believe I just admitted to that.
Garden availability: early summer
Culture for cutting: FS, DS
Often included in herb gardens or hot-exposure gravel gardens where plants get no supplemental irrigation. Spreads to make a 4-to-6-foot patch, with the basal foliage being semi-evergreen in mild winters.
Harvesting, conditioning, vase life: AM, SC (deep water), P, NF
Remove the leaves at the flower whorls at the time of harvest, except for any cute tuft of young leaves above the terminal whorl. Phlomis should be picked a day ahead of being used, so that stems have ample time to hydrate. Chilling during conditioning is best. Vase life is seven to ten days.
Buying tips: Watch out for nodding tips, which indicate fouled water, or that the easily clogged stems have not been recut lately. Do not buy stems when any of the florets have shriveled.

Phlox paniculata border phlox
hardy perennial zones 4-8
Part of plant used: fresh Height: 4 ft .
Fragrance: a light and pretty version of a carnation's scent
Phlox has dense terminal panicles of inch-wide flat florets, each with five petals. Colors range from white through pink, pink with a red eye, Chinese red, violet, purple, and lavender-blue. There is an orange form unlike any other, man-made or natural; for a shocking color that can only be partnered with green or white, try 'Prince of Orange'. There are


Phlox paniculata 'Franz Schubert'
phlox with variegated foliage, the best being 'Harlequin', with violet flowers giving good contrast.

I had the opportunity to view a phlox trial at the Waterperry School of Garden Design in Oxfordshire in 1998. Some cultivars were beautiful, yet I have not seen them make the leap across the big pond. Watch for 'Aida' (crimson with purple eyes) and 'Le Mahdi' (deep purple with even darker eyes).
Garden availability: midsummer, with some branching and reblooming from stems that are cut short and not full length
Culture for cutting: FS, AvS
Phlox may need staking if grown in any shade.
Large clumps need dividing. Can be susceptible to powdery mildew, especially when grown in cramped
quarters. Good varieties for cutting that are also mildew resistant: 'Bright Eyes' (pink with red eye), 'David' (whitest white), 'Franz Schubert' (lavenderblue), 'Nikki' (violently violet), 'Starfire' (Chinese red), 'The King' (closest to royal purple).
Harvesting, conditioning, vase life: AM, SC, PF Harvest when the panicle is half open. Cut phlox needs sugar in the water for the unopened buds to develop their strongest color, so do use floral preservative. Lasts ten days.
Buying tips: Do not buy phlox with spent, shedding flowers, or with newly opened florets that are paler than older florets (showing that need for sugar).

Phyllostachys bamboo
woody evergreen shrub zones 6-10
Part of plant used fresh (stems dried)
Heicht: to 40 ft .
Bamboo is used in floral design for its striking segmented stems (called culms), which can be gold, green, or black, depending on the cultivar grown. The green leafy foliage is uniquely Oriental in mood, but alas, short-lived once cut.
Garden availability: year-round
Culture for cutting: FS/PS, AvS
The plants of this genus are the spreading-that is to say, running-bamboos for which you need lots of room or understanding neighbors, probably both.
Harvesting, conditioning, vase life: AT, SC, PF The culms can last for months in water and are cut into pieces to make lattice in arrangements (as one would do in an Oriental garden). The foliage, however, does not last more than twenty-four hours, so should be used freshly cut in special occasion arrangements.
Buying tips: Bamboo stakes sold in garden centers that have been dyed green will bleed that dye into water if used in vase arrangements. Potentially the white flowers in the arrangement will go green, too (lilies, dianthus, roses).


Phyllostachys

## Physalis alkekengi Chinese lantern

hardy perennial zones 5-8
Part of plant used: fresh, dried
Height: 24-30 in.
This plant's common name refers to the highly decorative papery orange husks (calices) that surround the equally orange berries that dangle from the leaf axils. Can be used fresh or air-dried. Once dry, the whole stem can be used, or the individual husks can be removed and added to dried wreaths. If unharvested, the husks will turn brown, dry, and split, revealing the berries.
Garden availability: fresh, September and October; dried, well into November
Culture for cutting: FS, AvS
This plant is potentially invasive.
Harvesting, conditioning, vase life: AM (for fresh use), SC, PF
Remove all of the leaves from the stems at the time of harvest, whether or not the stems will be used fresh. The foliage is not long lasting, nor is it attractive when dried. Removing it will better reveal the outstanding seed husks. Vase life for fresh stems is about one week.
Buying tips: The peduncle (flower stem) of Chinese lantern is the weak link and will start to shrivel as it ages; its grasp on the berry becomes tenuous. Examine fresh stems to be sure that they are still highly colored and not darkening or shrinking. Once the lantern is dried, this connection becomes even more fragile, and husks that have shaken loose from stems sold in bunches are often visible in the plastic wrap.

Physostegia virginiana obedient plant
hardy perennial zones 4-8
Part of plant used: fresh Height: 2 ft .
Physostegia is grown for its spires of tubular flowers emerging from square stems on four sides. What makes the flowers obedient? Each floret can be moved 45 degrees to its right or left and stay put. Potentially you could have all the florets on a stem facing more or less the same direction, but the fourcorners look is fun, too. The plant is available with pink or white flowers, and there is a cultivar with variegated foliage (Physostegia virginiana var. speciosa 'Variegata').

By far the best variety as a good garden plant and for cutting is P. virginiana 'Vivid'. The flowers are bright pink, and the plants are less likely to run about the garden spreading via shallow, tough rhizomatous mats, which are impenetrable by any bulb trapped underneath. The form 'Pink Bouquet' is particularly useless: it is a rampant spreader, and the flower color is a wan shade of lavender-pink.
Garden availability: late summer well into autumn Culture for cutting: FS, MS

Physostegia tolerates partial shade, but flower production is much higher when plants are in full sun. The plants are potentially invasive. Because the invasive roots are shallow, growing physostegia in raised beds is a good idea: it means the roots' progress will be stopped when they reach the boundary. Harvesting, conditioning, vase life: AM, SC, PF Harvest flower stems by grasping them close to the ground and giving them a sharp yank, thus stimulating the plant to rebloom (as for alstroemeria). If a tuft of roots comes away with the stem, cut this off before placing the stem in water. Cut stems last two weeks.
Buying tips: Look for stems with only two to three rows of florets open (flowers open from the bottom up). All buds showing color should open if you use preservative. Avoid stems with shedding or shriveling florets.

## Pieris japonica

andromeda, lily-of-the-valley bush
woody evergreen shrub zones 6-8
Part of plant used: ${ }^{2}$ fresh fresh
Heicht: to 12 ft .
The flowers of pieris are tiny ( $1 / 4-$-inch $)$ white urnshaped bells carried in masses on linear peduncles forming dense draping panicles. Forms with dark and pale pink flowers are also available. The leaves are narrow, to about 3 inches long, mid-to-dark green and shiny. There are handsome variegated forms. Leaves are poisonous and should not be eaten or used to decorate food. Some of the pieris cultivars have bright red or bronze new growth, but alas, it does not stay firm when cut.
Garden availability: flowers, late winter and well into spring; foliage, year-round, except when tender new growth appears at the tips
Culture for cutting: FS, MS (acidic)
The greatest flower production will occur in full sun, but these shrubs are tolerant of light shade.
Harvesting, conditioning, vase life: at, SC (woody), PF
Cut flowers last more than a week; foliage can last a month if water is kept fresh.
Buying tips: The florets will abort if their water is not kept fresh. Foliage that has been stored too long will become limp and dull.

## Pittosporum tenuifolium

New Zealand pittosporum
woody evergreen shrub zones 8-10
Part of plant used: fresh Height: 12 ft .
Fragrance: The small flowers have a lovely honey scent, which in some species is quite carrying.
Pittosporum is grown for its small shiny leaves, usually carried on wiry dark twigs. Favorite cultivars are 'Irene Patterson', with light-green leaves heavily speckled white, and 'Purpureum', with chartreuse
new growth becoming and staying dark bronze-purple, with an open branching habit; 'Tom Thumb' is a dwarf form (to 3 feet) of 'Purpureum'. The species is plain green and called New Zealand pit by wholesalers, which is accurate since many species of pittosporum arise from New Zealand, Tasmania, or Australia.
Garden availability: year-round; Pittosporum tenuifolium 'Purpureum' is particularly interesting when the new growth transitions from chartreuse to purple and the leaves are covered with purple spots (developing pigment)
Culture for cutting: FS, AvS (good winter drainage) Some references list this species as being hardy only to zone 9 , but here in zone 8 I have grown Pittosporum tenuifolium 'Purpureum' and its compact variegated cultivar 'Margaret Turnbull' for eight years and six years respectively, and rarely have observed so much as tip dieback after a typical zone 8 winter. Plants heavily pruned for cut foliage will not flower.
Harvesting, conditioning, vase life: AT, SC (woody), PF
An exceptionally long-lasting foliage, lasting a month or more.
Buying tips: Pittosporum stored for too long in cold storage with unclean water will lose its shine, and in extreme cases the leaves will droop. As a genus, Pittosporum is not fast growing, and therefore the leafy stems may be more expensive than other types of foliage.

Platycodon grandiflorus balloonflower
hardy perennial zones 4-9
Part of plant used: 䵢 fresh Height: 2 ft .
Balloonflower gets its common name from the shape of the unopened buds, which expand into 2 -inchwide spheres that look like beach balls before popping open to show five-pointed petals held in an out-facing bowl shape. The common color is a rich
lavender-shaded blue. There are white and darker purple forms also, as well as pale pink (the variety 'Shell Pink' is excellent). There are also double forms of all colors, but sometimes simplicity is best, don't you find?
Garden availability: throughout July and into August, with deadheading prolonging the season
Culture for cutting: FS, MS (fertile)
Full sun insures ample flower production. Remember, in winter balloonflower dies back to nothing, and it is slow to emerge in the spring (sometimes late April). Do not think this bone-hardy plant has died if you see no action in March. Once new shoots appear, growth is rapid.
Harvesting, conditioning, vase life: AM, SC, P, NF
Lateral shoots from the main stems can be harvested separately. All of the little balloons showing color at harvest time will continue to open if a light amount of preservative is used, but do not overdo it. Well-tended stems last nearly two weeks in water. Performs poorly in foam. Platycodon has milky sap, but the cut stems seal themselves quickly, and the sap does not bleed out and is not toxic to other flowers: Do not heat-seal the stems.
Buying tips: Fresh water is the key to balloonflower longevity. Stems stored in too high a concentration of preservative will show drooping flowers and browned edges to the leaves.

## Plumeria alba frangipani, melia (Hawaiian)

woody deciduous shrub
zones 9-10+
Part of plant used: fresh Height: 12 ft .
Fracrance: This is by far one of the ten best floral scents, right up there with Arabian jasmine and regal lily. In fact, I grow my regal lilies near my front door because their scent reminds me so much of plumeria, which I cannot grow inside my present home (not enough interior light).
Frangipani features exquisitely elegant flowers of five plump overlapping petals, creamy white with a yel-
low eye. The flowers are $2-1 / 2$ to 3 inches wide and carried in a truss much like rhododendron flowers. The pink form, Plumeria rubra, is also lovely, but the flowers are a bit more tubular. Both forms are the most widely used flowers in Hawaiian tourists' lei, but like many other common lei flowers, this plant is not native to Hawaii, arising rather from the islands of the Caribbean and Central America.
Garden availability: mainly summer and autumn, though where hardy the plant will even force out some flowers after the leaves have fallen in winter
Culture for cutting: FS, AvS (volcanic)
This is a tropical plant, requiring full sun to produce its masses of flowers. In full leaf the plant looks like a rhododendron, but I know of few rhodies that can muster this volume of scent.
Harvesting, conditioning, vase life: AM, NP, NF The branched flower clusters continue to open buds over a long season, so when harvesting plumeria, take only the individual open flowers, by cutting or pinching right below the inferior ovary. Then string a lei immediately, spritz it with water, and store it in a high-humidity cooler. A fresh, gently handled lei should last two or three days if stored in a cooler in a plastic bag into which you have blown some of your moist breath.
Buying tips: Plumeria is air-freighted to the mainland U.S. (a.k.a. "the really big island") either as loose blossoms or already strung into lei. When traveling in Hawaii one often sees sections of plumeria branches (usually the dormant tips) that can be started in potting soil indoors back home. Add pumice to the potting mix in a $1: 3$ ratio. In a former residence with generous south-facing windows, I was able to get one of these starts large enough to bloom a bit, mainly by putting the plant outside in the hottest months of the summer and giving it megadoses of blossom booster fertilizer, 10-50-10 or 10-60-10.

## Polygonatum multiflorum solomon's seal

hardy perennial zones 4-8
Part of plant used: fresh fresh Height: 3 ft .
This is a woodland plant producing handsome arching stems of alternating oval, pleated leaves with pointed tips. Suspended beneath each leaf axil is a pair or trio of waxy bell-shaped flowers, creamy with green edges. Do not ingest any part of this plant.
Garden availability: flowers, April and May; architectural stems, after the flowers are spent.
Culture for cutting: PS, MS
Our North American native polygonatums are woodland plants requiring partial shade to protect their refined foliage. Polygonatum multiflorum is an Old World species, requiring the same humus-rich, moisture-retentive soil. Dense shade is preferable to too much sun.
Harvesting, conditioning, vase life: AM, SC, PF Harvest the stems at the ground for flowers when three to four lower leaf axils have open blossoms, yielding a cut stem lasting more than a week. These are best used in large arrangements where stems can be placed upright, and the whole arrangement sited on a high table, pedestal, or stage, so the beautiful detailing of the flowers can easily be seen. For cut foliage, harvest the stems at their full length, removing any peduncles still hanging from the bottom. These stems blend beautifully with tropical flowers, adding to the jungle effect.
Buying tips: Avoid stems with shriveled flowers (if it is the flowers you want); avoid stems with brown edges on the leaves, indicating overuse of floral preservative.

Primula veris cowslip
hardy perennial zones 3-8
Part of plant used: fresh Height: 8-12 in. Fragrance: sweet scent, pleasant and not too intense
Cowslip has leafless flower stems topped by an umbel of little trumpet-to-salverform flowers, variably yel-
low. The strain 'Sunset Shades' is a selection from native populations including red, orange, rust, and gold-colored flowers. I have found Primula veris the easiest, most reliable of all primroses.
Garden availability: usually from March into April, earlier in mild winters in zones 7 and 8
Culture for cutting: PS, MS (acidic)
A stellar candidate for partial-shade cutting gardens. Can be grown in full sun in coastal regions with regular cloud cover and ample soil moisture. Beloved by root weevils, which notch and otherwise disfigure the basal leaves.
Harvesting, conditioning, vase life: AM, SC, P, NF Cowslip lasts more than a week in fresh water, a charming addition to early spring nosegays and bridal bouquets where a touch of scent is wanted. Effective combined with early narcissus. The flower stems are not strong enough to insert easily into foam.
Buring tips: Rarely offered for sale as cut flowers, but plants are readily available at perennial nurseries. Usually sold while in flower; select colors you want. Some seedling volunteers will arise; let them flower to see if you like their color.

## Ranunculus asiaticus

Persian buttercup, Persian turban
hardy perennial (tuber) zones 7-11
Part of plant used: fresh Height: $12-16$ in.
Turban Group ranunculus, which I prefer for cutting, features multilayered flowers composed of oodles of overlapping gossamer petals, forming a dense corolla up to 4 inches across (usually less) and 1 to 2 inches thick. Stamens and fused pistils are often obscured by profuse petals on extra-double forms. Colors run from snow white to yellow (these can be hemmed with a picotee edge in other colors or streaked with contrasting random stripes for a form known as "art shades"), true red, Chinese red, orange, pale to shocking pink, and burgundy. Outermost petals of the most vivid colors are shiny.

Stems are hollow, nearly leafless except at the nodes where branching occurs.
Garden availability: May and June; can easily be forced to bloom earlier, but flowers will be smaller than if grown outdoors and allowed to mature at their normal time

## Culture for cutting: FS, DS

Providing excellent drainage is the key to growing ranunculus successfully. Outside, the tubers need to be dry while they are dormant; their soil should be free-draining in areas with winter rain. Forced tubers should have a media mix of two-thirds potting soil plus one-third cactus mix or horticultural sand, to prevent rotting as their roots form. (Planting tubers outside in partial shade will yield you exactly nothing.)
Harvesting, conditioning, vase life: AM, SC, PF These gorgeous rotund flowers can be too heavy for themselves, but I insert an 18-to-20-gauge wire into the stem until I feel it just pierce the bottom of the flower, thus hiding the reinforcement. Occasionally the stems are not hollow and are stronger, but in general, to use ranunculus successfully in floral foam, some sort of reinforcing wire or slender stick should be inserted into the hollow stem to help support it as it is inserted into the foam. Ranunculus is extremely sensitive to debris in its water, and for maximum vase life, up to ten days, the water must be freshened at least every other day. Buds on lateral branches that are not showing color should be removed because they will not open, and their presence draws water away from the primary flower. This is one of my favorite cut flowers: the shape is so fun and the colors are punchy, but they must be kept in fresh water. Know that.
Buying tips: Old stems eventually turn yellow underwater, instead of staying bright green, and old stem foliage turns yellow, too. Examine the calices under all of those petals-the sepals should look firm and be bright green. They will be shriveled if the stem is old, and the outermost petals will look dog-eared. If a fully double flower opens enough to show its center, it has been around a while.


Rhus typhina 'Dissecta'

Rhus typhina staghorn sumac
woody deciduous shrub zones 3-9
Part of plant used: fresh fresh, dried Нeight: 15 ft .
The inflorescence on this large shrub or small tree becomes a fuzzy club of crimson-colored fruit in autumn. The foliage-unusually long leaves (more than 18 inches) composed of sixteen-plus pairs of opposite leaflets-turns every shade of warm fall color all at once. We are talking magenta, rust, pumpkin orange, gold, olive green-all of it. For huge arrangements, whole branches can be taken;
for smaller arrangements, just use leaves, with lower leaflets (those underwater) removed. The cultivar 'Dissecta' (syn. 'Lacinata') is the cut-leaf sumac, with lacy leaflets, even more spectacular when their colors dawn.
Garden availability: foliage color finest after a few chilly nights, before too many killing frosts or storms disfigure the leaflets
Culture for cutting: FS, AvS
Sumac grown with too much water becomes leggy and brittle, less able to tolerate windstorms and ice or snow loads.
Harvesting, conditioning, vase life: AT, SC (woody), PF
Branches or leaves in water or foam will last up to ten days before revealing their profoundly deciduous nature.
Buying tips: If the leaflets are shedding, the stems are old. However, imagine a charming autumn flower girl leading a procession down an aisle and strewing gloriously colored sumac leaflets in her wake. Or use stalkless leaflets to line the aisle of an outdoor Indian summer wedding. Guests at an October wedding can throw these over the departing bride and groom. Endless colorful possibilities.

Rosa rose
woody deciduous shrub
zones 3-10
Part of plant used: ${ }^{\text {s. }}$ fresh, dried
Height: 2 ft .
Fragrance: Garden roses tend to have delightful fragrances. Modern florists' roses may or may not be scented.
Roses are grown for their colorful flowers, which can be single (five petals), semidouble (six to twenty petals), double (thirty to fifty petals), or fully double (fifty petals plus). Colors are everything but true blue, including outlines and stripes.
Garden availability: early May throughout the growing season, depending on the variety chosen

Culture for cutting: FS, AvS
A wise man (Ray McNeilan) once told me that the best fertilizer for roses is sunlight. He is right. No matter what else you do for a rosebush, if it is not getting enough light (six hours a day at least), it will never perform well.
Harvesting, conditioning, vase life: AM, SC, PF Harvest roses as the sepals separate and the petals start to unfurl. Double and fully double roses last longer than those with fewer petals. Roses are sensitive to fouled water-renew their water and recut the stems daily. Leave the top third of the foliage on the stem (all leaves above water), which will assist in the color development of the opening bud.
Buying tips: Purchase when buds are starting to open. Modern florists' roses sometimes open quickly but hold in the open stage for more than a week. When buying a rose, look at the cut end-if it is darkened, it has not been recut into fresh water recently. Avoid stems with stumps of removed petals showing, or with no leaves.

An excruciatingly thorough discussion of roses occurs in chapter 4.

Rudbeckia triloba brown-eyed susan
hardy perennial bulb zones 4-7
Part of plant used: fresh Height: 5 ft .
Flowers of the brown-eyed susan are the smallest, therefore cutest, of the Rudbeckia clan. They have a dark central cone and short, rounded yellow petals, the whole flower being about $1-1 / 2$ inches wide. The many branches are held at perfect 45 -degree angles from the main stem, each branch topped with three to six flowers.

There are other fine black-eyed susans to grow as cut flowers. Rudbeckia maxima has a protruding dark central cone (think of the Coneheads) and glaucous foliage. Another favorite is 'Herbstsonne' (syn. 'Autumn Sun'), with green cones and large, yellow, round-tipped petals with thick substance,
on tall branching plants, also a reliable rebloomer through the summer and autumn. All black-eyed susans make good cut flowers, no matter what color their eyes.
Garden availability: late July until frost, with reblooming if kept harvested
Culture for cutting: FS, DS
Members of the genus Rudbeckia are prairie natives, preferring shallow soils and dry summers. Rudbeckia triloba reseeds itself a bit; foraging birds will eat most of the seeds. Save a few seed heads for the finches and other birds to enjoy through the winter. This has proved to be quite perennial in the Clackamas Community College cutting garden, perhaps because it never gets to produce many seeds, thanks to fall term's students.
Harvesting, conditioning, vase life: AM, SC, PF Newly opened flowers at the beginning of the season may want to droop but will revive with proper conditioning. Flowers open a week or more will be firmer. Rudbeckia triloba lasts up to two weeks in water.
Buring tips: Rarely seen for sale, and I cannot explain this. It is easy to grow, has a long season, is longstanding in the garden, has a bright-eyed attitude.

## Salix babylonica var. pekinensis 'Tortuosa' curly willow

woody deciduous shrub zones 5-10
Part of plant used: fresh, dried
Неight: 25 ft. +
To say this shrub or small tree is used for its foliage is a bit misleading. It is used for its contorted, multibranched stems that grow upright but reserve the right to twist, loop, and curve in any direction. To give the stems more presence in flower arrangements, all leaves are removed, or the stems are harvested in seasons when the leaves are gone. The color of fresh stems is brownish-green, darkening to nearly black when dried, although there is always
spray paint. Pliable stems can also be wound around one's hand to make snarls and then placed in widemouthed clear vases to make a naturalistic flower frog.

Unfortunately, as can happen with any good thing, curly willow is overused. I called this "the baby's breath of the nineties"; customers would ask for it to be used in inappropriate arrangements or in unattractive floral combinations.
Garden availability: any time of year, with more labor required to remove leaves during the growing season
Culture for cutting: FS, MS
Curly willow is easy to start by sticking cut stems directly into the ground. Stems used in vase arrangements will root-even leaf out-and these can be planted out, too. Brittle branches are damaged by heavy snow or ice loads.
Harvesting, conditioning, vase life: AT, SC, PF Willow bark is the source of salicylic acid, a.k.a. aspirin, one of the acids used to enhance water uptake in floral preservative formulas. Hence, when using any salix in floral arrangements, it is not absolutely necessary to use a proprietary floral preservative. Curly willow lasts more than four weeks in water or foam, adding great movement and style to floral arrangements.
Buying tips: For use fresh, avoid stems having black tips; make sure the bark looks firm and shiny.

Salpiglossis sinuata painted tongue
annual
Part of plant used: 墨 fresh Height: 2 ft .
Fragrance: light and slightly clovelike
This festive annual offers up-facing trumpet-shaped flowers, intricately marked and veined with vivid colors (yellow, burgundy, or purple) over a bright base color, either yellow, red, purple, pink, or orange.
Garden availability: all summer, with new stems


Salpiglossis sinuata
regenerating when main or lateral stems are harvested.
Culture for cutting: FS, AvS
Continued cutting means continued flowering until the first frost. Do not let this plant set seed. Grown-from-seed mixes offer the whole range of colors. Avoid the clumpy, dwarf varieties.
Harvesting, conditioning, vase life: AM, SC, P, NF Harvest when most of the buds on a stem are just opening enough to see inside. Lasts more than a week in water.
Buying tips: Avoid stems with old, shriveled lower flowers, or with discolored foliage.

Salvia elegans pineapple sage
hardy perennial zones 8-10
Part of plant used: fresh Height: 3 ft . Fragrance: Crushed leaves smell exactly like pineapple.
There are many fine salvias to grow, but this has much to recommend it as a cut flower, offering elongated fiery red florets in loose terminal spires. Besides, its leaves can be steeped in warm cream custard for a deliciously flavored ice cream.
Garden availability: late summer until frost
Culture for cutting: FS, DS
Needs hot weather to flower profusely. It has been suggested that pineapple sage is hardier if grown in
free-draining soil to which gravel has been added and to which gravel is applied as a mulch.
Harvesting, conditioning, vase life: AM, SC, PF
Lasts more than a week in water.
Buying tips: Avoid stems with browning foliage and shedding flowers or bracts.

## Salvia viridis (syn. S. horminum) <br> clary

annual
Part of plant used: ${ }^{\text {ser }}$ fresh, dried Height: 3 ft .
Fracrance: The leaves have a pleasant herbal scent when bruised, but the flowers are unscented.
Salvia viridis has a more complex flower stem than other sages, topped by small whorls of relatively inconsequential flowers (lavender or purple), which are surrounded, or nearly enclosed, by showy bracts in shocking or pale pink, royal purple, and fresh greenish white. As stems elongate and continue flowering, the lower bracts persist, even if the lower florets shake off. This sage is a traditional element in Victorian nosegays.
Garden availability: Stems of bracts can be dried in late summer or picked for fresh use anytime after they start flowering.
Culture for cutting: FS, DS
Needs hot weather to flower profusely.
Harvesting, conditioning, vase life: AM, SC, PF Lasts slightly longer than Salvia elegans, more than a week in water.
Buying tips: Avoid stems with browning foliage and shedding flowers or bracts.

## Sambucus racemosa 'Sutherland Gold’ golden elderberry

woody deciduous shrub zones 3-7
Part of plant used: \& fresh Heicht: 6-10 ft.
Fracrance: a bit like tar when freshly cut, but this dissipates quickly
This handsome shrub is grown for its resplendent foliage, elegantly dissected in glowing shades of gold and chartreuse.
Garden availability: late spring until late autumn Culture for cutting: FS, AvS

Does not sunburn, especially if kept well watered. Keeping long stems pruned encourages bright new growth and also prevents a big shrub from becoming too large. Hard-prune in winter to produce well-clothed straight stems.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Best harvested when leaves are new; older leaves tend to "green out," becoming medium green and losing the snappy color. Proper conditioning is vital when using 'Sutherland Gold' in foam. Overnight conditioning assures the newest growth will not droop. In water or foam, this elderberry should last more than ten days.
Buying tips: Shriveling, discolored lower leaves indicate poor conditioning or excessive cold storage.

Scabiosa pincushion flower
S. atropurpurea, S. caucasica 'Fama' (syn. S. caucasica 'Fama Blue')
annual, HP zones 4-9
Part of plant used: 墨 fresh Height: 2 ft .
Fragrance: light and pleasant, once known as "sweet scabious"
Scabiosa caucasica 'Fama' is a perennial scabiosa with periwinkle blue flowers, the largest of this genus. Each flower is composed of a circle of sterile florets with petals both irregular and shaggy, providing the
bulk of the color for the flower (to 4 inches wide). The central disk is composed of true flowers, which start out folded over, giving a quilted impression; these pop open to show the stamens and rigid stigma. Stems rise cleanly above basal foliage, only having leaves at branch nodes. The species is a paler sky blue. There is a white form. All are charming.

Easy to grow from seed is Scabiosa atropurpurea (annual scabiosa), which also blooms all summer if kept deadheaded. It looks like the open center of $S$. caucasica, although more dome-shaped, without the outer rays. Colors range from dark burgundy-black ('Chile Black' or 'Ace of Spades') to several shades of lavender, pink (including a vivacious strawberry pink found only randomly in seed mixes), and an undistinguished white. Burgundy forms can overwinter in zone 8 if prevented from setting seed and grown in a sheltered area. More fragrant than $S$. caucasica.
Garden availability: mid-May throughout summer if prevented from setting seed
Culture for cutting: FS, AvS If grown in rich soil, this plant will bloom itself to death in just a season or two. Average garden soil and occasional dressings of lime (calcium carbonate) will give years of life to scabiosa.
Harvesting, conditioning, vase life: AM, SC, PF I will admit it-Scabiosa caucasica, particularly 'Fama', is one of my favorite cut flowers. It fairly screams "English country garden." Lasts up to ten days in water or foam.
Buying tips: First look at the central florets: they should be folded over, and the outer petals should be open. Examine the outer large petals; there should be no discolored patches. The whole should look fresh and firm, the center still quilted.


Sedum 'Autumn Joy’

Sedum 'Autumn Joy’
stonecrop
hardy perennial
zones 4-9
Part of plant used: 黑 fresh, dried Height: 18-24 in.
This is the showiest of the many sedum species. The stems are clothed with thick, celadon-green leaves and topped with dense clusters of small five-pointed star-shaped flowers ( $1 / 2$ inch wide at most). The flat flower cymes (to 5 or 6 inches wide) are decorative from the time the green buds form to well into winter, when the rusty-brown seed capsules can still be cut and dried. It is very effective to cut the flower
heads with short stems and bind them onto wreath frames while they are still fresh. Lay the wreath flat in a dark place to dry and display it once it is dry.
Garden availability: July into winter
Culture for cutting: FS, DS
This is a plant built to take a lot of abuse, and in fact, it forms sturdier clumps if it has to strive in circumstances that would kill other plants. Plants grown in ideal garden conditions will be lank and floppy, although pinching the growing tips when the plants are 12 inches tall will make them bushier.
Harvesting, conditioning, vase life: AM, SC, PF
The fresh stems last more than ten days in water that is kept fresh. Extremely versatile, this sedum can work in nosegays, cottage garden bouquets, and with tropical-themed large arrangements.
Buying tips: Avoid stems that are dropping their buds-these have been stored too long.

## Senecio cineraria dusty miller

hardy annual or short-lived perennial
Part of plant used: fitit fresh, dried
Height: $2 \mathrm{ft} .+$
This tried-and-true cottage garden plant, used for its felted silver foliage, can be highly dissected ('Silver Dust' is quite divided) or nearly entire and quilted in texture ('Silver Brocade'). Leaves are anywhere from 3 to 6 inches long. Individual leaves are excellent for use in corsage work. Stems of leaves can be dried, retaining their gray-silver pile for perdurable arrangements.
Garden availability: year-round, in mild climates where these tough plants do not freeze or rot in winter
Culture for cutting: FS, AvS
This adaptable plant can be started from seed or purchased in the spring, when it is sold as a component of container gardens. In hot weather the plants try to bloom, with a homely flower consisting only of a dark gold center, a daisy with no petals. To
thwart the plant's attempts to flower I cut the stems with flower buds as low as I can, typically producing more stems of foliage. Removal of the flower stems also increases life span.
Harvesting, conditioning, vase life: AM, SC, PF Set aside lower leaves that are long enough to use for lacy collars for nosegays and highlights in headwreaths and woven lei. Dusty miller has orange-to-rust-colored sap that may run briefly after harvesting. It is not toxic, and cut stems seal themselves quickly when placed in cold water. Foliage stems last up to two weeks in water.
Buying tips: 'Lace Brocade' is the cultivar most often available as cut foliage. All foliage forms of dusty miller are underutilized in the floral industry. The foliage should look bright and feel firm.

## Solenostemon scutellarioides coleus

tender perennial (outdoors) zone 9+
Part of plant used: fresh Height: to 3 ft .
For many years grown as a houseplant, coleus features exceptionally showy leaves that are splashed, striped, veined, or outlined with multiple shades of green, cream, pale or cerise pink, purple and burgundy, peach to terra-cotta, and bright yellow. Leaves can be 2 to 6 inches long, serrated to highly dissected. This plant continues to experience a renaissance.
Garden availability: fresh foliage from mature plants, from mid-June throughout the season
Culture for cutting: PS, MS
Because new forms of coleus are constantly reaching the market, it is hard to make the sweeping statement that all coleus prefer partial shade. Sun tolerance is being developed, but plants need ample water to prevent sunburn. Pinch out flower buds as they form to continue foliage production.
Harvesting, conditioning, vase life: AM, SC, PF Cut stems need an ample conditioning period in cool water, insuring the leaves are firm and fully


Solenostemon scutellarioides
hydrated. Can last more than seven days, and lower nodes may root in water.
Buying tips: Rarely offered in florists' shops; the leaves may look thick but are actually thin and easily torn during shipping. However, the young plants are inexpensive, and one could easily grow them to cutting size at home without breaking the bank. Coleus was formerly the genus name, alas now merely common.


Stachys byzantina grown with Lychnis coronaria

Stachys byzantina lamb's ears
hardy perennial
zones 4-8
Part of plant used: fifit fresh, dried Неight: 10-12 in.
Although some lamb's ears do put up flower stalks, these are not showy and generally lack grace. The leaves, by contrast, are quite useful, their soft texture created by a layer of dense silver hairs. Delightful as the collar of a nosegay. Two particularly good cultivars for cutting are 'Big Ears', which is blue-green with a sheer silver coating, and 'Primrose Heron', yellow-green with a silver sheen. You can pick large leaves with long petioles or use whole foliage stems with smaller leaves. Bundles of leaves can be air-dried.

Garden availability: from early June throughout the growing season
Culture for cutting: FS, DS
Plants form large patches, another reason to keep the flower stems cut-no seeds. Excellent in gardens with little supplemental water; often seen in herb gardens.
Harvesting, conditioning, vase life: AM, SC, P, NF
The short leaf stems are too soft to insert into foam. Fresh leaves last more than a week in water.
Buying tips: Avoid leaves with discolored patches, indicating mildew disease, which can develop when the leaves are wrapped in plastic or stored in a cooler too long.

## Stokesia laevis Stokes' aster

hardy perennial zones 5-9
Part of plant used: 道 fresh Height: to 2 ft .
This aster has shaggy blue flowers, similar to cornflower but larger, and periwinkle to baby blue. The color range is generally similar to that of Scabiosa caucasica; there are white forms.
Garden availability: late May throughout the summer, if deadheaded
Culture for cutting: FS, AvS
The crown of the plant is liable to rot in excessively wet soil.
Harvesting, conditioning, vase life: AM, SC, PF Lasts more than a week in water or foam. A casual sort of flower.
Buying tips: Not often seen as a cut flower, and I do not know why. Stokesia have all the attributes wanted. Avoid papery and dry flowers, or those with faded color.

Strelitzia reginae bird-of-paradise
evergreen perennial zones 9-12
Part of plant used: fresh Height: 3 to 4 ft .
Tall straight or slightly curved stems carry the birdlike inflorescence, with orange calices and blue true flowers. These emerge from a green, beaklike structure. It is possible to gently pry the flowers out of the beak if the stem was harvested too early, but a light touch is required.
Garden availability: during the warmest seasons; slows or stops blooming in winter where nights are cooler
Culture for cutting: FS, AvS (humus)
Tolerates dry spells during winter better than other tropical flowers do but still prefers rich soil and high humidity.
Harvesting, conditioning, vase life: AM, SC, NP, F Harvest when the orange calices are starting to emerge from the beak (which is a spathe). There are usually several flowers per beak, and old flowers may have to be taken off to make way for new blossoms. Lasts two weeks in plain water or foam.
Buying tips: Avoid stems when the inflorescence is not visible or is drying. There should be no evidence that old flowers have been removed, and no torn calyx tissues.

Symphoricarpos albus snowberry
woody deciduous shrub zones 3-8
Part of plant used: fresh Height: to 6 ft .
This native shrub of the American West forms dense terminal spikes of large white fleshy round berries (more than $1 / 2$ inch in diameter), gaining more drama once the small blue-green leaves fall. There is a handsome East Coast relative of the snowberry, the coralberry (Symphoricarpos orbiculatus), with smaller fruit, more prolifically produced. They are purple-red (not coral-red). Of course the two species have been crossed-humans being what


Strelitzia reginae
we are-and many new selections are being made.
The best is 'Mother of Pearl', with the large showy fruit of the snowberry, blushed with the coralberry's color.
Garden availability: late summer until midwinter, when the berries are either eaten by foraging birds or start to rot
Culture for cutting: FS/PS, AvS
Snowberries tend to sucker, forming thickets, which makes them great as bird cover and for erosion control; only barely manageable in a formal garden.
Harvesting, conditioning, vase life: at, SC, pF Stems of berries last more than a week in water. Cold storage causes them to age rapidly, as does fouled water. Snowberries are a wonderful addition
to fresh evergreen wreaths for outdoor display; they last about two weeks.
Buying tips: Berries should feel firm to the touch and be bright white. Clusters can be heavy; handle gently to avoid breaking the twigs.


Syringa vulgaris 'Maiden's Blush'. Photo by Linda Beutler.

Syringa vulgaris lilac
woody deciduous shrub
zones 4-8
Part of plant used: fresh, dried
Height: $20 \mathrm{ft} .+$
Fragrance: Unique and beautiful, the scent makes this cut flower a favorite. The intensity of the perfume varies with the cultivar.

The lilac, with its billowy panicles of tiny, four-petaled florets, is one of the sure harbingers of spring. Flower heads can be 4 to 12 inches long, made of hundreds of florets. There are double forms of most colors. Lilac would naturally be the normal color, varying to shades with more or less blue, violet-purple, pink, white, pale yellow
(cream, really), and my favorite cultivar, 'Sensation', purple-violet with a distinct white outline on each petal. Other popular cultivars include 'Andenken an Ludwig Späth' (dark purple), 'Charles Joly' (double purple), 'Katherine Havermeyer' (double lilac-blue), 'Krasavitsa Moskvy' (pink buds open to double white flowers), 'Miss Ellen Wilmott' (pure white double, big panicles), 'President Grévy' (double, nearly blue), 'Primrose' (pale yellow-cream), and 'Victor Lemoine' (double, pale lavender-pink).

Lilacs can be air-dried; they shrivel quite a bit and the colors darken, with whites becoming tan and purples going nearly black.

Garden availability: late March into early May, with Asian species as well as darker purple and violet forms tending to bloom later
Culture for cutting: FS, AvS
Lilacs will not flower in partial shade and prefer neutral to slightly basic soil; lime regularly if your soil is generally acidic. Lilacs need a definite period of cold dormancy in the winter, flowering poorly in mild coastal climates. Excessive rain causes the panicles to rot prematurely; excessively hot weather causes the flowers to scorch. Once the lilacs come into bloom, pray for overcast weather to make the most of their season. Deadhead unharvested panicles to prevent disease and promote branching.
harvesting, conditioning, vase life: AM, SC (woody), PF
Harvest when the florets in the panicle are a third to one-half open. If you must harvest lilacs when the weather is wet, do not place immediately into cold storage, as this will cause rot. Allow flowers to sit at room temperature until the surfaces dry. Remove all foliage from the stems of cut lilacs, so all water absorbed by the stem goes right to the florets. This makes a huge difference in the vase life of the panicles. If you want lilac foliage with the flowers, harvest separate stems that are not in bloom. Flower stems last a week in water or foam.

Notice that the stems of lilacs are woody, but the branchlets within the panicles are green. If you break a panicle down into green branchlets for short arrangements in foam, the green stems will not absorb water and will go limp quickly. Woody stems tolerate foam well.
Buying tips: Lilacs should look full and fresh, and stems are often priced by the size of the panicle. Avoid browned edges on the florets, and if the weather has been rainy, make sure no mold is growing within the panicle. Limp lilacs can be revived by recutting and then placed upright in deep warm water (do not submerge the flowers).

## Tagetes patula French marigold

annual
Part of plant used: fresh Height: 2 ft .
Fragrance: Some perceive marigolds to smell quite pungent, to the point of being unpleasant. In a closed room full of the stronger-scented African forms, I am quite sure I would lose my small mind, but out in the garden on a hot summer afternoon, I find hardly anything more pleasant than popping the spent flowers off the plants and sniffing the little burst of fragrance released each time. French marigolds are milder than larger-flowered cultivars.

French marigold is grown for its winsome flowers. The cultivar I favor most, from the Triploid Group, is the particularly fetching 'Mr. Majestic'. This is a lankier plant than the stumpy varieties used in summer containers; the flowers have a single row of five or six petals clearly striped in burgundy and bright yellow. The stripes give this marigold a tailored, trim look, very sure of itself. I used to be an anti-marigoldist, until I met 'Mr. Majestic'. How could I have been so blind? 'Harlequin' is also a good cultivar for cutting.
Garden availability: from early July throughout the season, especially if kept harvested
Culture for cutting: FS, AvS
Easily grown from seed. Grows well as a row crop, with deep weekly water and ample blossom-booster fertilizer every two weeks.
Harvesting, conditioning, vase life: AM, SC, PF
Cut stems last more than a week in water; any partially opened buds can be expected to open.
Buying tips: Any stem foliage should look fresh and green. Blackened slimy foliage indicates excessive storage in plastic wrap.


Tanacetum parthenium 'Aureum'

Tanacetum parthenium
feverfew
biennial, hardy perennial
Part of plant used: fresh, dried 18-24 in.
Fracrance: pungent herbal scent, similar to Chrysanthemum, a genus in which this species once resided (and may again someday)
Feverfew is composed of tight corymbs of tiny ( $1 / 2$ to 1 inch wide) florets, either daisy shaped with bright yellow centers and short white petals, or fully double, also white, with no central disc showing. There are also double forms with short-quilled petals, the whole looking like buttons. Excellent
summer filler, with all forms driable, although the white becomes dark ivory or $\tan$ when dried. There are yellow-flowered forms. My favorite cultivar is 'White Wonder', which will bloom (with double blossoms) the first year from seed and bulk up into a reliable perennial.
Garden availability: mid-June, with later rebloom if kept harvested
Culture for cutting: FS, AvS
After the flush of spring flower stems, the entire plant should be sheared to the ground. New growth will bloom at a shorter height. Feverfew grows easily from seed and will reseed if not restrained.
Harvesting, conditioning, vase life: AM, SC, PF A dependable cottage garden alternative to baby's breath, lasting more than ten days in fresh water and only slightly fewer in foam.
Buying tips: Examine stems to make sure the foliage looks fresh. If buying a bunch in a cellophane sleeve, try to check the foliage well into the center of the bunch. Feverfew does not store well in cellophane.

Thalictrum rochebrunianum meadow-rue
hardy perennial zones 5-9
Part of plant used: fresh Height: $4 \mathrm{ft} .+$
Normally grown as a handsome lace-curtain sort of plant in mixed perennial borders, meadow-rue has tall stems of wee florets that make excellent cut flowers. Open panicles are populated by tiny flowers consisting of four persistent rosy-lavender sepals, with a tuft of yellow stamens in the middle.
Garden availability: mid-June through July
Culture for cutting: PS, AvS
Although this plant can be grown in full sun with sufficient water, the foliage sunburns on hot days. Partial shade eliminates the risk. May need staking, although I have not found this to be necessary.


Thalictrum rochebrunianum

Harvesting, conditioning, vase life: AM, SC, PF
This elegant filler lasts more than a week in water or well-saturated foam.
Buying tips: Rarely seen for sale, probably because it looks fragile. It is not.

Tithonia rotundifolia Mexican sunflower
annual
Part of plant used: fresh Height: 6 ft .
This striking plant has 3-inch-wide beaming orange flowers, shaped like single-flowered zinnias, with gold centers. Foliage and stems have short, dense, transparent hairs, making them velvety to the touch.

Garden availability: early July through late September
Culture for cutting: FS, AvS
It may be necessary to stake tithonia, especially in windy sites. Plants are happiest where summer weather is hot and they are amply watered. Easily grown from seed. The most marvelous tithonia I have ever seen was produced by my sister-in-law, Carla Beutler, who quite brilliantly interplanted it with pumpkins. The vines leaned against the tithonia but did not climb them. This pressure seemed to strengthen the flowering stems. Once the pumpkins started to turn orange, the color interplay was remarkable. Did I manage to photograph this magical composition? Sigh.
Harvesting, conditioning, vase life: AM, SC, P, NF Although tithonia does not last at all well in foam, it is in most other respects a desirable cut flower. It is, however, sensitive to fouled water. All conditions being perfect, the flowers should last more than ten days in water.
Buying tips: Fouled water will make the stems limpnecked and the petals sag. Also, this should not be stored in floral coolers. Some like it hot, and this plant is not cold-blooded.

## Trachymene coerulea (syn. Didiscus coerulea)

 blue lace flowerannual
Part of plant used: fresh Height: 2 ft .
Imagine a blue queen anne's lace-tiny periwinkle blue florets making a round, flat, or domed umbel-and you will have some idea of the considerable usefulness of this, one of my first choices for a filler flower. Each umbel is 2 to 3 inches wide, produced on befuzzed branching stems.
Garden availability: from late May through autumn, with successive sowings
Culture for cutting: FS, AvS
Although not adept with seeds, even I have grown
this. Harvesting essentially kills the plant; sow seeds every two to three weeks to keep yourself well supplied. Will not reseed nearly as much as you would like it to. Why isn't this grown more?
Harvesting, conditioning, vase life: AM, SC, PF Blue lace flower's hairy stems make it want to stick to itself; handle patiently to prevent unnecessary breakage. Lasts ten days or more in water; more than a week in foam.
Buying tips: Avoid shedding petals, the evidence of which looks like blue powder on a tabletop. Old foliage will yellow, also.

## Tradescantia virginiana spiderwort

hardy perennial zones 5-9
Part of plant used: fresh Height: 2 ft .
Spiderwort offers three-petaled flowers (to $1-1 / 2$ inches wide) in clusters atop sturdy stems with blades of wide, grasslike foliage. Most distinctive is the blade immediately under the flowers, which juts off at a 90 -degree angle. Flowers colors range from vivid purple and cobalt blue to pale blue, a nearly red magenta, and white. The best cultivars are in the Andersonia Group and include 'Concord Grape' (well named!), 'Osprey' (a fine white), and 'Stone Blue' (the stone in question being a cerulean sapphire).
Garden availability: from late May through summer, especially if kept deadheaded
Culture for cutting: FS, MS
Spiderwort is a tough herbaceous perennial, easily divided and given away, making it a classic passalong plant. Does not like to become dry while in active growth.
Harvesting, conditioning, vase life: AM, SC, P, NF The flaring green blade right under the flower cluster makes this an intriguing flower to use. Each floret lasts only three or four days but shrivels quickly, so that old blooms do not detract from the opening buds. Whole stems should last more than a
week in water; all buds showing color should open. Especially handsome in Oriental floral designs. Buying tips: Check flower clusters carefully, paying particular attention to buds. Make sure these are showing color and are not, in fact, empty calices that have already bloomed.

## Tricyrtis formosana (syn. T. stolonifera) toad lily

hardy perennial zones 6-9
Part of plant used: 起 fresh Height: to 3 ft .
Looking into the face of these fascinatingly constructed little flowers, one easily imagines the body of a little frog, spotted, with folded knees. Five petals surround splayed pistils and lumpish stamens. The whole is white, heavily spotted with red-to-magenta or purple spots. Each stem produces flowers on the top foot of the stem, at the leaf axils. Often the leaves are spotted also, on a green background. This species tends to branch more than other toad lilies. A fine named form is 'Amethystina'. Another species, Tricyrtis hirta, is also good cut, having more color variation but not growing as tall.
Garden availability: late summer and autumn
Culture for cutting: PS, MS
Sunburns badly; this is a woodlander in its native Taiwan. Spreads modestly by underground rhizomes.
Harvesting, conditioning, vase life: AM, SC, PF Harvest when several flowers on a stem are open. These flowers, with their exquisite detail, should either be used in arrangements displayed intimately or massed in bunches of stems for maximum impact. They will last more than a week in water.
Buying tips: Occasionally seen for sale. Make sure that the "frog" is still present in the flower. Old flowers lose their stamens, shattering soon after.

## Trifolium pratense <br> red clover

hardy perennial zones 7-10
Part of plant used: fresh Height: 2 ft .
Fragrance: light and sweet
We know what clover looks like, and this red/darkpink form is grown as a soil-enhancing cover crop, bee attractant, and animal fodder. This large-flowered form also makes a wonderful component in nosegays, and hey, there is the whole luck thing.
Garden availability: midsummer
Culture for cutting: FS, AvS
Clumps in the cutting garden can be divided to propagate; will self-seed without assiduous deadheading.
Harvesting, conditioning, vase life: AM, SC, P, NF
Harvest the stems as long as you need them to be. Lasts more than a week in short arrangements. Stems are not strong enough to insert into foam.
Buying tips: Speaking as a florist, I would love to see this offered at the wholesale market, cleaned and well conditioned. Speaking as a gardener, I can always go down to the nearest vacant lot and find escapees.

## Triteleia laxa (syn. Brodiaea) brodiaea

hardy perennial bulb
Part of plant used: fresh Height: 15-24 in.
Handsome pale to dark blue or purple florets are shaped like pointy-edged funnels and carried in umbels of a dozen or so atop thin strong leafless stems. The long, linear leaves are not especially appealing and should be left to die back.
Garden availability: summer, usually July (earlier in their native California and Oregon scrublands), after the more traditional bulb flowers
Culture for cutting: FS, DS
There is anecdotal evidence that with sharp drainage and deep planting, brodiaea is hardier (easily to zone 7).

Harvesting, conditioning, vase life: AM, SC, PF
Naked stems and lax-grassy foliage make brodiaea easy to harvest; simply cut the stem to the length you want. Pick these when half of the florets are open. The umbels last ten days on average.
Buring tips: Closely examine the open florets, making sure they do not have brown rot spots, indicating they have been stored too long in plastic sleeves. Look for bulbs of the cultivar 'Queen Fabiola', the most commonly grown form for cutting, with large dark blue flowers.

Tropaeolum majus nasturtium
hardy annual
Part of plant used: fresh Height: to 12 in.
Fracrance: slightly spicy
Nasturtium is grown for its bright slightly tubular flowers with broadly flaring lips, often having flares of contrasting colors. Petals have a wrinkled texture. Main flower colors are red, orange, peach, gold, yellow-basically any warm shade from true red through palest yellow. Nasturtium leaves are more or less round with radiating white veins, making them difficult to use. On the other hand, they can be displayed to great effect in "water garden" style arrangements, where they float on the surface of a shallow dish, imitating lily pads.
Garden availability: late spring and throughout the summer
Culture for cutting: FS, AvS
There are climbing and bushy forms available. Vines are used for draping as well as traveling upward. Easily grown from seed; seeds left in the soil over winter will germinate in early spring. Hybrid seeds will not necessarily reproduce the flowers you had the year before. Beware the onset of black aphid infestations in late summer or when plants are stressed from lack of water.
Harvesting, conditioning, vase life: AM, SC, NP, NF


Tropaeolum majus
After conditioning, use nasturtiums massed together in short vases or in nosegays. Lasts more than a week in water.
Buying tips: Usually the flowers' heads are seen disembodied for use in salads, where they add distinctive spiciness. If you want to eat them, make sure they are organically grown, and if you find cut flowers for sale, be certain they have not been in preservative if they might be eaten (for instance, on a wedding cake).

Tsuga canadensis ‘Gentsch’s White’ Canada hemlock
coniferous shrub zones 4-8
Part of plant used: ©it fresh Height: 15 ft .
Fragrance: typical evergreen scent, but not aro-matic-needles must be bruised to release scent
New growth of this distinguished evergreen cultivar is white, glowing quietly against the dark green needles further back on the branches. This is one conifer that can be used year-round without screaming "Christmas!" at you.
Garden availability: all year, although the new growth is whitest in spring and summer, turning pale green by holiday time in December
Culture for cutting: PS, AvS
This conifer has the typical graceful drape to its branches if left unpruned. The plant also responds well to pruning, producing more of its white new growth. If grown in full sun, the shrub's new growth will be green. In partial shade, it appears to have sun glistening on it, as the new growth brightens the darkness.
Harvesting, conditioning, vase life: AT, SC, PF Cut branches last up to a month in water.
Buying tips: Rarely seen for sale as a cut foliage, as it is rather a slow-growing shrub. Best to grow your own.

## Tulipa tulip

hardy perennial bulb
zones 3-8
Part of plant used: fresh Height: 12-36 in.
Fragrance: very little, although some double yellow forms have a pleasant perfume
Tulip bulbs are grown for their chalice-shaped flowers, which can be found in all colors except blue, with stripes, outlines, and flames of contrasting colors.
Garden availability: late March throughout May Culture for cutting: FS, DS

Tulips need cold winters and dry summers to per-


Tulipa 'Arabian Mystery'. Photo by Linda Beutler.
form well repeatedly. To have the bulbs return into bloom from year to year, at least one leaf must be left on the stem after flower harvest or deadheading, and this should die back on its own, to feed the bulb. The dormant bulbs like to get hot in the summer and do not want supplemental water. Planting the bulbs deep helps them perennialize.
Harvesting, conditioning, vase life: AM, SC, PF Harvest tulips when the color is just starting to show at the edges of the sepals. Leave one or two leaves on the stem, as these will continue to feed the flower, intensifying the color. Tulips continue to grow after harvest and if held in too little (shallow)
water, will become floppy. Tulips need deep water and prefer preservatives with more sugar and less bleach or acid. Should last ten days in water, fewer in foam.
Buying tips: Avoid tulips that are fully colored. Buy tulips when they are still somewhat green. The foliage should be so fresh it squeaks when two leaves are rubbed together.

For a more in-depth discussion of tulips, see chapter 4.

Verbascum mullein
hardy perennial zones 5-9
Part of plant used: fresh Height: to 4 ft .
Elegant spires of verbascum are clothed in small, fivepetaled open-bowl florets. Colors range through shades of yellow from pale to golden, plus shades of peach varying in intensity. 'Summer Sorbet' is a delicious shade of raspberry-purple and a good cultivar for cutting. 'Butterscotch' and 'Helen Johnson' are also preferred cultivars for cutting. All usually have darker central eyes, burgundy or purple.
Garden availability: late May throughout the summer, reblooming if deadheaded
Culture for cutting: FS, AvS
These mulleins may be short-lived; when multiple rosettes of basal foliage form, the crowns should be divided. Often treated as a biennial for the cut flower trade.
Harvesting, conditioning, vase life: AM, SC, PF Harvest verbascum when the bottom half of the spire is open and remove the leaves below waterline. One of the most prominent mail-order seed companies in the United States advertises verbascum as a great cut flower and shows massed stems in a glass vase, with the submerged leaves and flowers still attached. Talk about setting a bad example, as well as setting their claims of longevity up for failure. To quote a wise woman, "Yikes." Since you are reading this book, you will be as horrified as I. With under-
water stems stripped of leaves, your verbascum will last more than ten days in water and more than a week in foam.
Buying tips: Make sure that the lower florets are not shedding.

Veronica spicata speedwell
hardy perennial zones 3-8
Part of plant used: fresh Height: to 2 ft .
Flowers are composed of many tiny florets carried on slender spires. Colors range from white through pink, and shades of purple and blue. My two picks from this species are 'Pink Damask', a girlie shade of pink, and 'Goodness Grows', a rich blue.
Garden availability: from late June throughout the summer
Culture for cutting: FS, AvS
Veronica likes rich soil and forms dense clumps, producing dozens of flower stems at a time. Divide every three years.
Harvesting, conditioning, vase life: AM, SC, PF Veronica lasts ten days in water and slightly fewer in foam. In my experience, the blue forms last better than the other colors. Often the straight, pointed tips of the stems will curl a bit after cutting. This is normal.
Buying tips: Avoid flowers offered for sale with limp tips (words to live by). Examine the flower head to see how much has already opened and faded.

## Viburnum

woody shrub, evergreen and deciduous
zones 4-8
Part of plant used: fresh fresh fresh
Нeight: $4 \mathrm{ft} .+$
Fragrance: The Korean spice viburnum (V. carlesii) smells like carnations should smell, of nutmeg and cloves. Many of the winter-flowering forms have similar scents.

The flowers of winter-blooming spice viburnums can be harvested and forced indoors; those with berries will be showiest in the autumn and early winter; evergreen varieties can be used for their foliage all year long. The best viburnums for cutting are $V$. carlesii (Korean spice viburnum, with pink dense flowerheads), V. macrocephalum (Chinese snowball), V. opulus var. xanthocarpum (a form of guelder rose with bright yellow autumn berries), and $V$. tinus (laurustinus, with evergreen foliage, white flower clusters in late winter, and steel blue berries from late spring through summer).
Garden availability: see above
Culture for cutting: FS, AvS
Most viburnums need only a moderate amount of water. Lower-growing ground cover forms can tolerate partial shade but have little floral design value.
Harvesting, conditioning, vase life: AM, SC (woody), NP, F
Although they can last more than ten days in floral foam or water, viburnums harvested for their flowers do not tolerate floral preservative, and this is why stems you see for sale look shriveled and sad. Stems harvested for their berries last more than ten days in water.
Stems harvested for foliage last up to a month in water or foam.
Buying tips: Whether sold for flowers, foliage, or fruit, the stems should be displayed in fresh water, and all plant parts should look fresh and firm

Vinca major greater periwinkle
woody evergreen shrub (trailing subshrub, really)
zones 7-11
Part of plant used: © fresh Height: 18 in. +
Although vinca's periwinkle blue flowers are charming, they are not as long lasting as the handsome foliage, especially the slender vining stems of Vinca major 'Variegata', which have green opposite leaves 3 to 4 inches long, outlined and streaked in ivory. Commonly used as a ground cover, vinca has a seemingly
indefinite horizontal spread. Makes an attractive and more environmentally correct alternative to English ivy (Hedera belix), where something with a drape is wanted to accent footed or other tall containers. Do not eat any part of this plant.
Garden availability: year-round, except when the foliage is new and tender
Culture for cutting: PS, AvS
Harvest the vining stems liberally to keep this from running amok, although the variegated form produces more woody basal growth, and by pruning can be made to behave more like a shrub than a vine.
Harvesting, conditioning, vase life: AT, SC, PF Lasts more than two weeks (and may form water roots over time) in water or foam.
Buying tips: Rarely offered for sale as foliage.

## Viola odorata sweet violet

hardy perennial zones 7-9
Part of plant used: fresh Height: to 8 in.
Fracrance: A delightful, nostalgic fragrance, what your grandmother smelled like if she did not like roses. (I find that grandmothers either smell of roses or violets, heavily laced with cookies.) As small as these flowers are, their perfume carries on the still winter air-a remarkable thing.
A nosegay of sweet violets used to be the traditional Valentine's Day gift, until labor costs became prohibitive. (Do you know how long it takes someone on hands and knees to pick a twenty-to-thirty-stem bunch of violets?) The tiny flowers, produced one to a stem, have five petals, two flaring from the top (at ten o'clock and two o'clock), two more slender at the sides (four o'clock and eight o'clock), and one shorter and fatter at the bottom (six o'clock). Colors range from white to rose, lavender, purple, and close to but not truly blue. All of this in a $1 / 2$-inchwide flower, an inch at the most. The most fragrant variety is 'Royal Robe', giving some rebloom in autumn.

Garden availability: early-to-mid spring, capable of flowering in February if there has been a stretch of false spring
Culture for cutting: PS, AvS
Violets spread by tough rhizomes that form mats that nothing planted under them can penetrate. Not a good choice as a ground cover companion for bulbs.
Harvesting, conditioning, vase life: AM, SC (see below), NP, NF
Violets have a particular conditioning regimen that must be followed if you are to enjoy their maximum vase life of five days. After picking enough blossoms to make a sufficiently large posie, tie with cotton string or raffia; soak the entire bouquet in room temperature or slightly warmer water (not hot). After fifteen minutes, remove the violets from the water, give the bouquet a gentle shake, and place directly in a small vase. Once soaked, do not store violets in cold storage. Change the water daily.
Buying tips: Alas, violets are only rarely available now in premade nosegays, often with a few of their heart-shaped leaves as a finishing touch. Should you find such treasure for sale, make sure that the flowers are fresh and not starting to darken or shrivel.

Viola xwittrockiana
pansy
used as annuals zones 4-8
Part of plant used: 黑 fresh Height: to 9 in.
Fragrance: slight when compared to sweet violets, but pretty
Pansies are closely related to violets, but their petals are enlarged and overlapping, giving the flowers a round profile. Available in all colors (including white and nearly black), with both pretty or garish color combos on single flowers. The flowers have a central set of "whiskers," dark streaks of color radiating from the center of the flower, primarily on the lower and bottom petals. Sometimes the whiskers fuse into dark blotches.

Garden availability: Pansies dislike hot summer weather but will flower in autumn, winter, and spring. Plants have been known to freeze solid, thaw, and continue about their business.
Culture for cutting: FS/PS, MS
Pansies flower the first year when grown from seed planted in late winter. In cool summer areas they will be evergreen perennials.
Harvesting, conditioning, vase life: AM, SC (see Viola odorata), P, NF
Because pansies are much like violets, they can be conditioned by dunking single flowers or little bunches in warm water. Suitable for nosegays or for display in a traditional "pansy-ring" container (as seen on page 125 . Will last a week in water.
Buying tips: Make sure the flowers look flat and fresh. Beware flowers that are starting to roll at their edges-they are done.

## Vitis vinifera 'Purpurea’ purple-leaf grape

woody deciduous shrub (vine)
zones 6-9
Part of plant used: fresh fresh
Нeight: 12-15 ft.
The medium-sized grape leaves (to 8 inches wide at most) start life celadon green and turn reddish-purple as the summer progresses to autumn. The small dark grape clusters are decorative, slow to ripen, and too seedy to eat.
Garden availability: autumn
Culture for cutting: FS, AvS
Prune hard-to 3 or 4 feet tall-in midwinter, when the plant is thoroughly dormant.
Harvesting, conditioning, vase life: AM, SC (woody), PF
Lengths of colorful autumn leaves on their vines are a dramatic addition to large arrangements. The leaves can be used on their own, flat like doilies for trays of food (assuming the vines were organically grown). The twigs with grape clusters can also be used in fresh arrangements. Grapes and cut vines
last more than a week in water or foam. Remember, keeping the grapes in floral preservative lengthens their life but renders them inedible.
Buying tips: Avoid shriveled grapes and drying, papery leaves. This plant is not often seen for sale, but as a gardening florist, you will want to grow your own.

## Weigela

woody deciduous shrub zones 5-9
Part of plant used: 䵢 fresh fresh
Height: to 8 ft .
Some weigela are grown for their tubular flowers in white, pink, and red. There is a yellow form, Weigela middendorfiana, but I cannot attest to its viability as a cut flower. There are also forms with highly desirable variegated foliage, and foliage of lime green. Cultivars to look for are 'Bristol Ruby' (radiant red flowers), W. florida 'Variegata' (smartly variegated green leaves, with a natty ivory outline), and 'Rubidor' (dark pink flowers and flashy chartreuse new foliage, which will rejuvenate if consistently harvested).
Garden availability: flowers, April and May; foliage, from June through leaf fall
Culture for cutting: FS, AvS
An easy-care shrub. Because the useful life of the foliage is longer than the blooming period, I tend to hard-prune them (to 2 feet tall) during the dormant season, encouraging strong, straight new growth with large showy leaves. This means I get a fraction of the flowers I would get if I only tip-pruned the shrubs to encourage dense twiggy growth.
Harvesting, conditioning, vase life: AM, SC (woody), PF
I have done side-by-side science experiments with lilacs and weigela flowers-they bloom at roughly the same time-and, all things being equal, weigela flowers last twice as long. This means weigela lasts nearly two weeks as a cut flower. The foliage lasts longer, more than three weeks.

Buying tips: When buying the foliage, make sure the leaf edges are not browning, which indicates excessive cold storage. Cut flowers should not be shedding. Weigela is pronounced "why-gee-la."

## Wisteria sinensis Chinese wisteria

woody deciduous shrub (vine)
zones 5-8
Part of plant used: 劫fresh
Heicht: 20 ft + (perhaps infinite)
Fragrance: rich, flowery scent heavily laden with spices and plum blossom
The long ( 12 -inch), pendant racemes of pealike flowers appear before the foliage emerges, making this the superior wisteria for floral design. Color forms for this species range from white to lavender and nearly blue. Look for the cultivar 'Caroline', with rich lavender flowers generously produced and fragrant.
Garden availability: May, sometimes earlier if the warmth arrives in April
Culture for cutting: FS, AvS
Wisteria trained on garden and house walls must constantly be pruned to remove new growth; masses of flowers burst forth from the older wood in the spring. Wisteria grown from cuttings may take time to reach floral maturity; always buy your plant in bloom, to know that it will bloom and that it is true to its labeled name.
Harvesting, conditioning, vase life: AM, SC (woody), NP, F
Wisteria should be cut when the raceme is at least half open but has not started to lose any florets. Cut a few inches of old woody stem with each flower, as the green stem of the raceme will not drink. Should last about a week in water.
Buying tips: Rarely offered for sale as a cut flower, but a real looker in early spring weddings.

Xerophyllum tenax bear grass
hardy perennial (semi-evergreen)
zones 5-9
Part of plant used: fresh Height: to 30 in.
Bear grass is in the lily family and puts up a tall spire of tiny ivory lilies at midsummer; the flowers are not long lasting, unfortunately. Usually grown for its utilitarian foliage, pliable grasslike blades of green (beware of paper cuts caused by the sharp edges). These are used long, or they can be tied around vases and into knots for interesting, naturalistic alternatives to the typical ribbon bow.
Garden availability: year-round, unless buried by snow, which will cause dormancy
Culture for cutting: FS, MS
Widely seen in sunny patches within high-elevation forests; unfortunately, this plant may become extinct in the wild due to overharvesting of native populations. This would be an easy plant to grow in gardens with dry summers and moist winters, and some flower farmer should start producing bear grass as a row crop.
Harvesting, conditioning, vase life: AT, SC, PF Bear grass foliage is extremely long lasting in fresh arrangements. Everything else in the bouquet will have died, and you will be left with a handsome, glaucous tuft of grass for the next arrangement.
Buying tips: Bear grass with browning tips has been stored for some considerable period of time. These tips can be cut off, and you will still get three weeks out of it.


Zantedeschia aethiopica
calla lily
hardy perennial
zones 8-10
Part of plant used: ${ }^{\text {s. }}$ fresh fresh
Нeight: to 3 ft .
Has stately flowers on tall scapes. The flowers, consisting of a white rolled spathe surrounding the gold spadix, are a classic design motif. The leaves are decorative, and one or two are often included in a bunch of the flowers. The variety 'Green Goddess’ has a longer spathe than the species, and it is tipped in green, with green around the edges-a distinctive flower.
Garden availability: May and June, with a much longer season along the mild Pacific coastline (from Vancouver, British Columbia, south to San Diego)
Culture for cutting: FS (coastal), PS (interior), MS Tolerant of moist, often wet soils. In the colder reaches of their hardiness, the plants look like mush by the end of winter. This debris should be removed before new foliage emerges.
Harvesting, conditioning, vase life: AM, SC, PF Remember that excessive cold storage is not recommended for this flower, which will brown at its tips and acquire an unsightly, crapey texture. Fresh stems will tend to float in water until they are fully hydrated. Just wait for them to sink, which takes several hours. Callas are often harvested when still very tight for shipping. These should be put into a sugary warm preservative solution when they are received, in order to impel the flowers to begin unfurling. Unfortunately, most wholesalers slap them right into their coolers, and they never do amount to anything. Should last more than a week.
Buying tips: As stated earlier, buying very tight callas is a risk, and if they are not starting to open, they may never do so. Also, open flowers that have been bruised or are showing age are sometimes sprayed with white floral paint by unscrupulous bucket vendors.


Zea mays ‘Tricolor'. Photo by Linda Beutler.

Zea mays 'Tricolor' ornamental corn
annual
Part of plant used: fresh Height: 5-8 ft.
This corn has wide grassy blades like edible corn, but they are bright green heavily streaked with pink and white, exceptionally showy.
Garden availability: August and September
Culture for cutting: FS, AvS
Easily grown from seed, matures quickly.
Harvesting, conditioning, vase life: AM, SC, PF
This gorgeous member of the grassy grains lasts more than a week in water or foam. Fabulously useful.

Buying tips: This plant is still only grown as a vegetable oddity, but I am telling you, this is the flashiest grain I have ever seen. Grow your own!

## Zinnia elegans zinnia

annual
Part of plant used: fresh Height: 2 ft .
Zinnia is grown for its double, daisylike flowers with papery petals that come in a festive array of colors, everything from white to pale green, shades of yellow and orange, red, tones of pink, and dark magenta. If you have not grown the antique zinnia 'Envy', you should get some seeds and have a go. The pale creamy-green flowers are unique. You will be jealous of those who have it if you do not grow it for yourself.
Garden availability: from July through frost
Culture for cutting: FS, AvS
Easy to grow from seed but should not be planted until the soil and night temperatures are warm. In
climates with moist summers, mildew on the foliage will be a problem. There is no room for compro-mise-zinnia must have full hot sun.
Harvesting, conditioning, vase life: AM, SC, NP, F Although zinnia can last as long in fresh water as it does in foam (nearly two weeks), it dislikes preservatives. At harvest all but the leaves closest to the flower should be removed. The leaves divert water from the flower, and zinnia foliage does not age as gracefully. Interestingly, zinnia makes lousy corsages and boutonnieres. One would think that the papery petals would hold up for days if properly wired, taped, and stored, but once they are pinned to a hot body, they decline rapidly.
Buying tips: Examine the petals for brown patches on the edges or tips; also rub your thumb over the central disk to make sure you are not picking up much pollen, which would indicate a blossom past its prime.

## THE MEANINGS OF FLOWERS

Flowers are words which even a babe may understand.
-Bishop Arthur Cox, The Singing of Birds

Throughout the ages, emotions and personified characteristics have been attributed to flowers, and these have endured to modern times. The language of flowers, reaching its height during the Victorian era, is simple yet magically articulate. Flowers keep secrets, and they don't lie, but in a few cases, as in the case of yellow roses, twentieth-century marketing has stepped in to make a flower more politically correct and therefore more salable. Yellow roses were traditionally the symbol of jealousy, but sometime in the 1920s they became associated with friendship instead.

Here, then, are the deeper messages hidden within as many of the flowers mentioned in this book as it was possible to find.

Acanthus mollis: artistry, having artistic talent
Achillea millefolium: healing
Aconitum napellus: need to beware
Adiantum formosanum: sincerity, secret love
Agapanthus campanulatus: secret love
Alcea rugosa: ambition
Allium: courage and faith, patience

Alstroemeria: wealth and prosperity
Amaranthus caudatus: hopelessness
Anemone coronaria: unfading love
Angelica gigas: inspiration
Antirrbinum: deception
Aquilegia: folly
Arbutus unedo: only love

Armeria maritima: sympathy
Artemesia ludoviciana: dignity
Aster novi-belgii: daintiness
Astilbe: I'll be waiting for you
Calendula officinalis: joy
Camellia japonica: admiration
Centaurea cyanus: celibacy
Cbaenomeles: temptation
Clematis: cleverness and intellect
Cleome hassleriana: desire to elope with me
Consolida ambigua: fickleness, haughtiness
Convallaria majalis: sweetness
Cosmos bipinnatus: modesty
Cyclamen persica: resignation and good-bye
Cytisis: humility
Dablia: instability
Delphinium elatum: well-being
Dianthus barbatus: gallantry
Dicentra spectabile: elegance
Digitalis purpurea: youth
Eremerus stenophyllus: endurance
Eucalyptus: respect
Euphorbia marginata: persistence
Eustoma: calm
Filipendula rubra: uselessness
Foeniculum vulgare 'Purpureum': worthy of praise
Forsythia $\times$ intermedia: anticipation
Freesia: trust
Galanthus nivalis: hope

Galax urceolata: encouragement
Gladiolus: love at first sight
Grasses (ornamental): submission
Gypsophila paniculata: everlasting love
Hamamelis xintermedia: reconciliation
Helenium: tears
Helianthus annuus: loyalty
Helleborus $\times$ hybridus: tranquillity
Heuchera: challenge
Hyacinthus: rashness, sport
blue: asking forgiveness
red: playfulness
white: loveliness
yellow: jealousy
Hydrangea macrophylla: thanks for understanding
Iris: wisdom, valor
Ixia: happiness
Fasminum sambac: amiability
Lathyrus odoratus: good-bye, departure
Lavandula: devotion
Lilium:
orange: hatred
white: virginity
yellow: gaiety
Limonium sinuatum: remembrance
Lonicera: generosity and devotion
Magnolia denutata: sweetness and beauty
Molucella laevis: good luck
Myosotis sylvatica: true love, memories

| Narcissus: egotism | Rosemarinus officinalis: remembrance |
| :--- | :--- |
| daffodil types: respect, desire | Rudbeckia triloba: encouragement |
| one daffodil: bad luck | Salvia officinalis: |
| jonquil types: love me | foliage: domestic virtues |
| Nigella damascena: perplexity | flowers: thinking of you |
| Orchidae: love, refinement | Scabiosa caucasica: unlucky in love |
| Paeonia: aphrodisiac | Strelitzia regina: magnificence |
| Papaver somniferum: endless sleep | Syringa vulgaris: humble beauty |
| Pelargonium: | Tagetes: comfort for the heart |
| flowers: folly | Tanacetum parthenium: protection |
| scented foliage: preference | Tulipa: fame and charity |
| Philadelphus: deceit | red: believe in me |
| Pblox paniculata: united souls | striped/streaked: beautiful eyes |
| Phyllostachys: loyalty | yellow: hopeless love |
| Primula veris: pensiveness | Veronica spicata: fidelity |
| Ranunculus asiatica: radiance, you are attractive | Viburnum opulus: winter, age |
| Rosa: | Vinca major: new friendship |
| buds: beauty and youth | Viola: modesty |
| bouquet of open flowers: gratitude | Viola $\times$ xittrockiana: thoughts |
| cabbage types: ambassador of love | Wisteria sinensis: welcome |
| damask: brilliance | Zantedeschia aethiopica: beauty |
| lavender: enchantment | Zinnia: thoughts of friends |
| peach: desire |  |
| pink: perfect happiness |  |
| red: love |  |
| red and white: unity |  |
| thornless: love at first sight |  |
| white: eternal love |  |
| yellow: friendship (formerly jealousy) |  |

## HELP WITH BOTANICAL LATIN

## I didn't know the names of flowersnow my garden is gone.

-Allen Ginsburg, Winter Haiku

All plants are given botanical names that are specific to each type of plant. Commonly the name is of Latin derivation, less often Greek. This name has two parts and thus is called a binomial. The first is the genus name, describing a group of plants with similar characteristics. The genus name in a binomial is always capitalized. The second part of the name is the species epithet, describing one particular type of unique plant within a genus. This word is never capitalized. Occasionally the species epithet will consist of more than two words-for example, Digitalis purpurea is the botanical name for wild foxglove, and Digitalis purpurea f. albi flora is the name for the white form of that plant. You usually see botanical names italicized.

Botanical Latin is meant to show both the similarities and differences in plants. By giving a description of some distinctive attribute of a plant (where it grows, how it grows, who found it, what color it is), botanical names identify plants specifically in a way common names cannot.

The following groupings of Latin words and prefixes are meant to help you recognize likenesses from one botanical name to another. I hope this will start to demystify latinized words you will see often.

## Geography

These epithets identify where on the planet a plant can be found:
canadensis (Canadian)
chinenesis, sinensis (Chinese)
damascenus (Damascene)
japonicus, japonica (Japanese)
novae-angliae (growing in New England)
novi-belgii (growing in New York)
occidentalis (Western growing)
orientalis (Eastern growing)

## Habitats

These names indicate the environment a plant prefers:
arvensis (grows in meadows)
convallis (grows in valleys)
maritimis (grows on seashores)
montana (grows in mountains)
palustris (grows in marshes)

## Color

Latin words indicating color sometimes bear a suffix indicating whether the word refers to flower color (-iflora) or foliage color (-folia). Often no suffix is attached to the color word, so we don't always know whether flower or foliage is being referred to.

| Red | Yellow | Blue |
| :---: | :---: | :---: |
| roseus (pink) | aureus (gold) | azureus |
| ruber, rubra | flava | coeruleus, caeruleus |
| sanguineus | luteus | cyaneus |
|  | sulphureus | glaucus (blue-gray) |
| Green | Purple | Orange |
| viridis | риrpurea | aurantiacus |
|  | violacea |  |
| White | Color Qualifi |  |
| $a l b a$ | atro- (darker) |  |
| argenteus (silver) | floridus (bright) |  |
| candidus | marginatus (fo | ed in yellow or white) |
| niveus (pure white) | nitidus (glossy) |  |
|  | pallidus (pale) |  |
|  | variegatus (fol | ed with white) |

## Manner of Growth

These epithets describe how the plant behaves as it grows, or its shape:
campanulatus (bell shaped)
crispus (curled)
elatus (tall)
labiatus (liplike petals)
nana, nanus (dwarf, short)
normalis (typical for the species)
pyramidalis (pyramid shaped)
rugosa, rugosus (rough texture)
serratus (sharp-toothed edges)
stellatus (shaped like a star or a wheel)

## Use

Any plant with officinalis as its species epithet is now, or was at one time, used for some medicinal purpose. Here are some examples:

Rosa gallica var. officinalis
Rosmarinus officinalis

## Salvia officinalis

## CONVERSION TABLES

| inches | $c m$ | feet | $m$ |
| :--- | :--- | :--- | :--- |
| $1 / 10$ | 0.3 | 1 | 0.3 |
| $1 / 6$ | 0.4 | 2 | 0.6 |
| $1 / 4$ | 0.6 | 3 | 0.9 |
| $1 / 3$ | 0.8 | 4 | 1.2 |
| $1 / 2$ | 1.3 | 5 | 1.5 |
| $3 / 4$ | 1.9 | 6 | 1.8 |
| 1 | 2.5 | 7 | 2.1 |
| 2 | 5.1 | 8 | 2.4 |
| 3 | 7.6 | 9 | 2.7 |
| 4 | 10 | 10 | 3 |
| 5 | 13 | 20 | 6 |
| 6 | 15 | 30 | 9 |
| 7 | 18 | 40 | 12 |
| 8 | 20 | 50 | 15 |
| 9 | 23 | 60 | 18 |
| 10 | 25 | 70 | 21 |
| 20 | 51 | 80 | 24 |
| 30 | 76 | 90 | 27 |
| 40 | 100 | 100 | 30 |
| 50 | 130 |  |  |
| 60 | 150 | temperatures |  |
| 70 | 180 | ${ }^{\circ} \mathrm{C}=5 / 9 \times\left({ }^{\circ} \mathrm{F}-32\right)$ |  |
| 80 | 200 | ${ }^{\circ} \mathrm{F}=\left(9 / 5 \times{ }^{\circ} \mathrm{C}\right)+32$ |  |
| 90 | 230 |  |  |

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## COMMON NAMES CROSS-REFERENCE



| bistort........................... Persicaria bistortabittersweet.............. Celastrus scandensblack-eyed susan .......... Rudbeckia hirtablack fountain grass ......Pennisetum alopecuroides'Moudry' |  |  |
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| English delphinium ......Delphinium elatum |
| :---: |
| English holly............... Ilex aquifolium |
| English ivy .................. Hedera belix |
| eucharis lily ................. Eucharis amazonica |
| eulalia .........................Miscantbus sinensis |
| false goat's beard ..........Astilbe species |
| false queen anne's lace ..Ammi majus |
| feverfew...................... Tanacetum parthenium |
| flamingo flower.............Anthurium andraeanum |
| fleur-de-lis................... Iris hybrids |
| florist's cyclamen..........Cyclamen persicum |
| flowering quince ...........Cbaenomeles speciosa |
| flowering tobacco ........Nicotiana hybrids |
| forsythia ..................... Forsythia species |
| fountain grass.............. Pennisetum species |
| foxglove...................... Digitalis purpurea |
| forget-me-not ............... Myosotis species |
| French lavender...........Lavandula dentata |
| French marigold ...........Tagetes patula |
| fringe flower................ Loropetalum chinense |
| frangipani.................... Plumeria alba |
| freesia .........................Freesia hybrids |
| galax .......................... Galax urceolata |
| gardener's garters.........Pbalaris arundinacea var. picta |
| gardenia...................... Gardenia jasminoides |
| gayfeather.................... Liatris spicata |
| geese-go-walking..........Lysimachia clethroides |
| geranium ..................... Pelargonium species |
| gerbera daisy ................ Gerbera jamsonii |
| geum ......................... Geum coccineum |
| globe bellflower ........... Campanula glomerata |
| globe thistle ................Echinops ritro |
| glory bower................. Clerodendrum species |
| golden elderberry .........Sambucus racemosa 'Sutherland |


lamb's ears .................... Stachys byzantina
larkspur ........................ Consolida ambigua
laurustinus....................Viburnum tinus
lavender........................ Lavandula species
lemon geranium............Pelargonium crispum
lemonleaf ..................... Gaultheria shallon
lenten rose.................... Helleborus $\times$ bybridus
licorice plant ................. Helichrysum petiolare
lilac...............................Syringa vulgaris and its hybrids
lily ................................Lilium species and cultivars
lily-of-the-Nile ............. Agapanthus species and hybrids
lily-of-the-valley ...........Convallaria majalis
lily-of-the-valley bush ..Pieris japonica
lily tree Magnolia denudata
lisianthus Eustoma grandiflorum
lobster claw Heliconia caribaea
lodgepole pine Pinus contorta
lords and ladies Arum italicum 'Pictum'
love-in-a-mist ............... Nigella damascena
love-lies-bleeding .........Amarantbus caudatus
lupine
Lupinus species and hybrids
maidenhair fern ............ Adiantum formosanum
mallow
Lavatera trimestris
masterwort ...................Astrantia major
meadow-rue ................. Thalictrum species
Mexican sunflower........Tithonia rotundifolia
Michaelmas daisy..........Aster novae-angliae, A. novi-belgii
milky bellflower ............Campanula lactiflora
mock orange ................ Pbiladelphus species and hybrids
money plant ................. Lunaria annua
monkshood ................... Aconitum species
montbretia ................... Crocosmia hybrids


Peruvian lily.................Alstroemeria aurea
pikake ........................... Jasminum sambac
pincushion flower .........Scabiosa atropurpurea,
S. caucasica
pineapple broom............Cytisus battandieri
pineapple sage...............Salvia elegans
pittosporum ..................Pittosporum species
plantain lily ................... Hosta cultivars
plume poppy ................. Macleaya cordata
plumosa fern ................ Asparagus setaceus
Point Reyes creeper......Ceanotbus gloriosus
poppy anemone............. Anemone coronaria
porcelain-berry vine .....Ampelopsis brevipedunculata
pot marigold ................ Calendula officinalis
prairie gentian................Eustoma grandiflorum
primrose ....................... Primula hybrids
purple coneflower.........Echinacea purpurea
purple-leaf grape..........Vitis vinifera 'Purpurea'
queen anne's lace...........Daucus carota
queen of the prairie ......Filipendula species and hybrids
rattlesnake flower..........Calathea crotalifera
red bistort ...................... Persicaria bistorta 'Superba'
red clover ..................... Trifolium pratense
red hot poker ............... Kniphofia species and hybrids
red-stem or red-twig ...Cornus alba
dogwood
red valerian .................. Centrantbus ruber
regal lily ....................... Lilium regale
ribbon grass.................. Phalaris arundinacea var. picta
rose.............................. Rosa species
rose campion................ Lychnis coronaria
rose geranium .............. Pelargonium graveolens
rosemary ...................... Rosmarinus officinalis
Russian sage .................. Perovskia atriplicifolia

salal................................ Gaultheria shallon
scarlett trumpet............. Lonicera $\times$ brownii
honeysuckle ............. 'Dropmore Scarlet'
Scotch broom................ Cytisus scorparius
seafoam statice .............. Limonium brassicifolium
sea holly ........................ Eryngium species
sea lavender................... Limonium latifolium
sea pink, sea thrift.........Armeria maritima
sedge ............................ Carex species
shampoo ginger ............ Zingiber zerumbet
Siberian bugloss............Brunnera macrophylla
Siberian forget-me-not. Brunnera macrophylla
silk tassel bush............... Garrya elliptica
smokebush .................... Cotinus coggygria
snake's-head iris ............ Hermodactylus tuberosus
snapdragon.................... Antirrbinum majus
snowberry .................... Symphoricarpos albus
snowdrop ...................... Galanthus nivalis
snow-on-the-mountain .Euphorbia marginata
solomon's seal ............... Polygonatum multiflorum
Spanish lavender ...........Lavandula stoechas
speedwell....................... Veronica species
spider flower ................. Cleome bassleriana
spiderwort..................... Tradescantia virginiana
staghorn sumac ............. Rhus typhina
statice ............................. Limonium sinuatum
St. John's wort............... Hypericum species
Stokes' aster .................. Stokesia laevis
stonecrop ...................... Sedum species
strawberry tree.............. Arbutus unedo
summer lilac.................. Buddleja davidii
summer snowflake ........Leucojum aestivum
sunflower....................... Helianthus species
sweet bay....................... Laurus nobilis

| sweet pea ..................... Lathyrus odoratus |
| :---: |
| sweet violet .................. Viola ordorata |
| sweet william............... Dianthus barbatus |
| switch grass ................. Panicum virgatum |
| Tahitian ginger ............ Alpinia purpurata |
| Texas bluebell.............. Eustoma grandiflorum |
| threadleaf cypress ........ Chamaecyparis pisifera |
| thrift........................... Armeria maritima |
| toad lily ....................... Tricyrtis formosana |
| toothed lavender..........Lavandula dentata |
| torch ginger ................. Etlingera elatior |
| Transval daisy............. Gerbera jamesonii |
| tulip............................ Tulipa hybrids |
| viburnum.................... Viburnum species and cultivars |
| wallflower.................... Erysimum cheiri |
| wandflower.................. Galax urceolata |
| weigela ........................ Weigela cultivars |
| white mountain bluet.... Centaurea montana var. alba |
| wild carrot................... Daucus carota |
| willow gentian.............. Gentiana asclepiadea |
| windflower .................. Anemone coronaria |
| winterberry ................. Ilex verticillata |
| winter creeper.............. Euonymus fortunei |
| witch hazel .................. Hamamelis $\times$ intermedia |
| wolf's bane................... Aconitum species |
| yarrow ......................... Achillea species |
| yellow-stem or $\qquad$ Cornus sericea 'Flaviramea' yellow-twig dogwood |
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| zinnia.......................... Zinnia elegans |

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[^0]:    Cotinus coggygria
    Hydrangea quercifolia
    Salix babylonica var. pekinensis 'Tortuosa’

