

Holly

for all seasons

BY VALERIE SUDOL
STAR-LEDGER STAFF

Few holiday greens are as prized as branches of glossy, green holly laden with berries — and that was as true in the days of the ancient Romans as it is today.

But after the Christmas tree and garland come down, holly keeps on giving real value in the winter landscape. Its bright berries generally persist until late winter, when they become palatable to wildlife. In the heart of winter, when the view from the window can be dreary, the glossy, broadleaved foliage of hollies catches the pale winter light, offering a sparkle and gleam that dull needle-leaved foliage cannot match.

"It's a focal point no matter how you use it," says Barbara Taylor, owner of a landscape business in Tennessee and chairwoman of the Holly Society of America's international Arboretum Committee. "Holly is beautiful as a hedge, in foundation plantings and as a screen. An outstanding specimen tree can take your breath away, it's that overwhelming."

You can have holly of your own, for cutting or year-round interest, and optimum planting time is coming right up. But given the diversity in the genus *Ilex* (pronounced eye-lex), it may take you from now until spring to sort through the choices and settle on a specific variety.

There are prickly types and smooth-leaved kinds,

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At right, a deciduous winterberry holly presents clusters of bright berries on bare branches.

Above, 'Jersey Delight,' one of 28 hollies introduced by Elwin Orton of Rutgers University.

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And now for something really different: The brilliant red berries of the winterberry holly have no competition from foliage, which drops from this deciduous species in fall. The cultivar shown above in detail and below in full, is 'Harvest Red,' the first cross between American and Asian species. A mature shrub achieves a size of about 10 x 10 feet.

HOLLY

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At home after the holidays

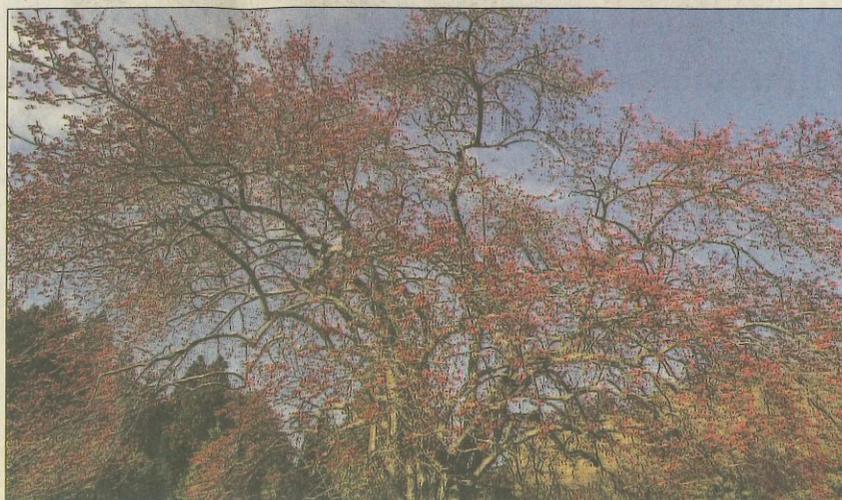
soaring trees and dwarf rock garden specimens, tiny-leaved hollies resembling boxwood and species that atypically lose their leaves in winter. Showy berries can be red, orange, yellow and even ivory. It's no stretch to say there's a holly for every purpose.

With some 700 species of it worldwide, there is scarcely a culture that

settlements. But even though it was winter hardy — thriving where English holly could not — the wild American version was less favored than the European because its leaves were duller and lighter in color, its form more open and rangy, and its berries less prolific.

The aim of modern breeding programs was to make the American holly more like the English without impairing its hardy constitution. But before serious hybridization could begin, holly fans already had grown concerned about native stocks, depleted in an unregulated holiday cottage industry that marketed holly branches cut in the wild.

Here's where the story begins to focus more tightly on New Jersey. In 1926,



as interesting as the holly."

Where else will you find a group willing to throw birthday parties for specific, notable trees? Society members gathered in Oxford, Md., for instance, to toast the original 'Nellie Stevens,' a cross between English and American holly, and met in Atlanta just last year to toast a 100-year-old Burford holly.

Pontti also enjoys the way holly becomes a wildlife circus — in May and June, the bees work the blossoms, and in late winter, robins, cedar waxwings, wild turkey and 15 other bird species take the fruit, often in a short, frantic feast. (Be warned: The berries are eaten by deer, too. But in a 1999 survey of deer-resistant plants, our readers

didn't use or admire holly. The Romans exchanged holly wreaths during their winter solstice celebration, Saturnalia, and the Chinese favored their native species for New Year's decorations. South American Indians brewed from holly a tea-like beverage, yerba maté, and northern Native Americans believed spiny holly leaves symbolized the fierceness of their warriors, who painted holly emblems on their shields.

It is more specifically from the British Isles that Americans take their holly lore. The Druids believed that as long as the sacred holly remained green, the earth would be beautiful; they wore holly sprigs in their hair (ouch!) for solstice celebrations. Britons adopted the Druidic notion that forest fairies sheltered from winter's cold among holly's dense branches, and decked their halls with boughs of holly as protection against evil spirits.

English holly (*Ilex aquifolium*), a symbol of good will, was wedded to the Christmas season as early as the 1500s, according to written records. The traditional holly of Christmas cards, this is a handsome species, often variegated, with shiny leaves and brilliant red berries.

British settlers in the New World must have been delighted to discover the American equivalent, *Ilex opaca*, growing along the coast near their early

Clarence Wolf, owner of the New Jersey Silica Sand Company in Millville, began sending holly cuttings to clients and friends at Christmas. Twelve years later, when wild stocks had begun to peter out, he planted a 55-acre holly orchard with some 41,000 trees, mostly transplanted from local swamps and forests.

Dan Fenton took over the Holly Farm and, in 1947, helped form the Holly Society of America in Millville with Wolf and Elizabeth White, a woman otherwise known for introducing the nation's first cultivated blueberry. These founders also conspired to have Millville officially named America's "Holly City." Cuttings from the Wolf and White holly collections were planted at the Rutgers Gardens in East Brunswick, which was the largest accumulation of American hollies in the eastern United States for decades until superseded by the Bernheim Arboretum and Research Forest in Kentucky.

The Rutgers Gardens are still a good place to get an idea of how impressive a mature American holly can be. And nothing could be better than tramping through the holly grove with the unassuming and professorial Elwin Orton, a Rutgers University researcher who has galvanized modern holly breeding since his arrival on campus in the 1960s.

"You start with the best genetic mate-

rial you can get and go through thousands of seedlings, discarding maybe 98 to 99 percent of them," says Orton describing the laborious mechanics of hybridization. "It can take 15, 20 years — sometimes more — to grow them out, make selections and come up with something commercially interesting."

But he's been extraordinarily good at it, producing no fewer than 28 new cultivars. Orton's first introduction in the 1970s, 'Jersey Princess,' was an upright, conical tree bred for darker leaf color and heavy berry set. Following it into the market were 'Dan Fenton,' a profuse fruiter; 'Jersey Gold,' with yellow berries; 'Jersey Knight,' a male pollinator; and entire series of dwarf clones suitable for rock gardens ('Jersey Jewel,' 'Jersey Midget,' 'Jersey Sprite').

The breeding program became more cosmopolitan as crosses were made with English, Chinese and Japanese species. Orton improved on the box-like Japanese hollies with 'Beehive,' a dense, compact, mounded specimen. In the deciduous group, his program produced the first cross between native and Asian winterberry species, a heavy berry producer known as 'Harvest Red,' followed by the equally gorgeous 'Autumn Glow.'



Elwin Orton, a research professor in plant biology and pathology at Rutgers University, examines a berry infected with the holly midge, which prevents berries from turning red. Orton is a leading holly breeder who has introduced 28 new cultivars.

This spring, Orton will have yet another new introduction, a trademarked plant called 'Red Beauty,' designed for smaller properties with a mature height of just 10 feet. The plant, patent pending, will produce royalties for Cook College, Rutgers' agricultural school, and some of the proceeds will eventually filter back to Orton's research program in plant biology and pathology.

"You can take a holly plant from the wild, but the modern varieties are just plain genetically superior," says Orton. "They're programmed by their genes to be hardy, to stay compact, have good leaf color and produce a heavy set of berries."

Few individuals have played a more critical role in improving the hollies available in trade, where today you'll find more than 1,000 cultivars of our humble native species.

"Dr. Orton is in a league of his own," says Mike Pontti, president of the Holly Society of America. "His shadow on modern holly breeding is immense."

"I'm not worthy to carry his notebook," jokes Jim Norton of Barnsboro, a trustee of the holly society. "Although holly," he allows, "is just about my favorite plant."

Norton is involved in two of the society's most far-reaching programs: A survey of bloom times aimed at identifying pollinating partners across the country, and a monitoring of seedlings planted nationwide to test cold hardiness. Broad-based projects like these are even more important since the National Arboretum in Washington, D.C., suspended its holly research program.

"There's no central warehouse for information any more, other than the society," says Taylor, who tracks hollies worldwide.

Her partners are Susyn Andrews at Kew Gardens in London, and Carl Suk, a Somerville native now living in Kentucky, who is compiling a comprehensive check list or inventory of holly in arboreta designated by the society as especially holly rich. When researchers need DNA from a specific holly, it is this group who can pinpoint its location. The society also is the sole registrar of new species.

"We're entering a fresh chapter with a move into new headquarters in Millville, where we'll be able to bring all our programs under one umbrella," says Pontti, director of landscape maintenance and design at Georgetown University in Virginia. "Membership is down from our peak of 1,200 in the 1960s, and we need new blood. But the people involved are a joy — I sometimes think the people are

ranked (onage of American holly as among the least palatable to deer, while that of Chinese and Japanese varieties were more readily chomped.)

"You can generally get your Christmas cuttings before the critters move in," says Pontti, "but there's nothing more exciting than a true feeding frenzy, when birds strip every berry off a tree in a matter of minutes."

The aristocratic holly was important to American horticulture from the earliest days of the republic — George Washington's wooden false teeth were made of holly wood, and the maze at Williamsburg is fashioned of American holly. But these plants have fallen out of favor more recently, partly because they grow slowly to marketable size, and don't always winter over well in containers, now the industry's standard.

"Hollies were eclipsed for the last little while by faster growing and grossly overused 'foundation' evergreens, but I think they're poised for a big comeback," says Taylor. "They tolerate more stress and are a lower-care plant in the long run, and they remind you of traditional values in a time when we need traditions."

"Hollies are so...reminiscent," she adds, groping for words. "They bring back some of the glory of childhood. They let you keep some of that holiday spirit all year round."



COURTESY OF ELWIN ORTON

The compact 'Red Beauty,' bred by Elwin Orton, debuts this spring.

How to handle a spiny shrub

BY VALERIE SUDOL
STAR-LEDGER STAFF

Hollies are relatively easy to grow and generally long-lived, slowly achieving their majestic, mature height. New gardener or old hand, don't hesitate to add some to your property for year-round interest and holiday berries.

Evergreen varieties are excellent backbone plants, giving the garden great distinction, while deciduous types make a brilliant display of bright berries that persist after the leaves fall. The hardest thing about holly cultivation may be choosing among the many types in this diverse family of plants.

So many hollies...

While there are hundreds of species and cultivars, those of interest in the landscape fall into a few broad categories.

Most familiar are evergreen trees of the American holly species (*Ilex opaca*), conical in shape and reaching 30 to 60 feet at maturity, with spiny leaves and berries of red, orange or yellow. The smaller, shubbier "blue" or Meserve hollies, originally bred on Long Island by Kathleen Meserve in the 1950s, generally top out at 6 to 8 feet. These are hybrids of English holly, *Ilex aquifolium*, which isn't reliably winter hardy in New Jersey except in the extreme south.

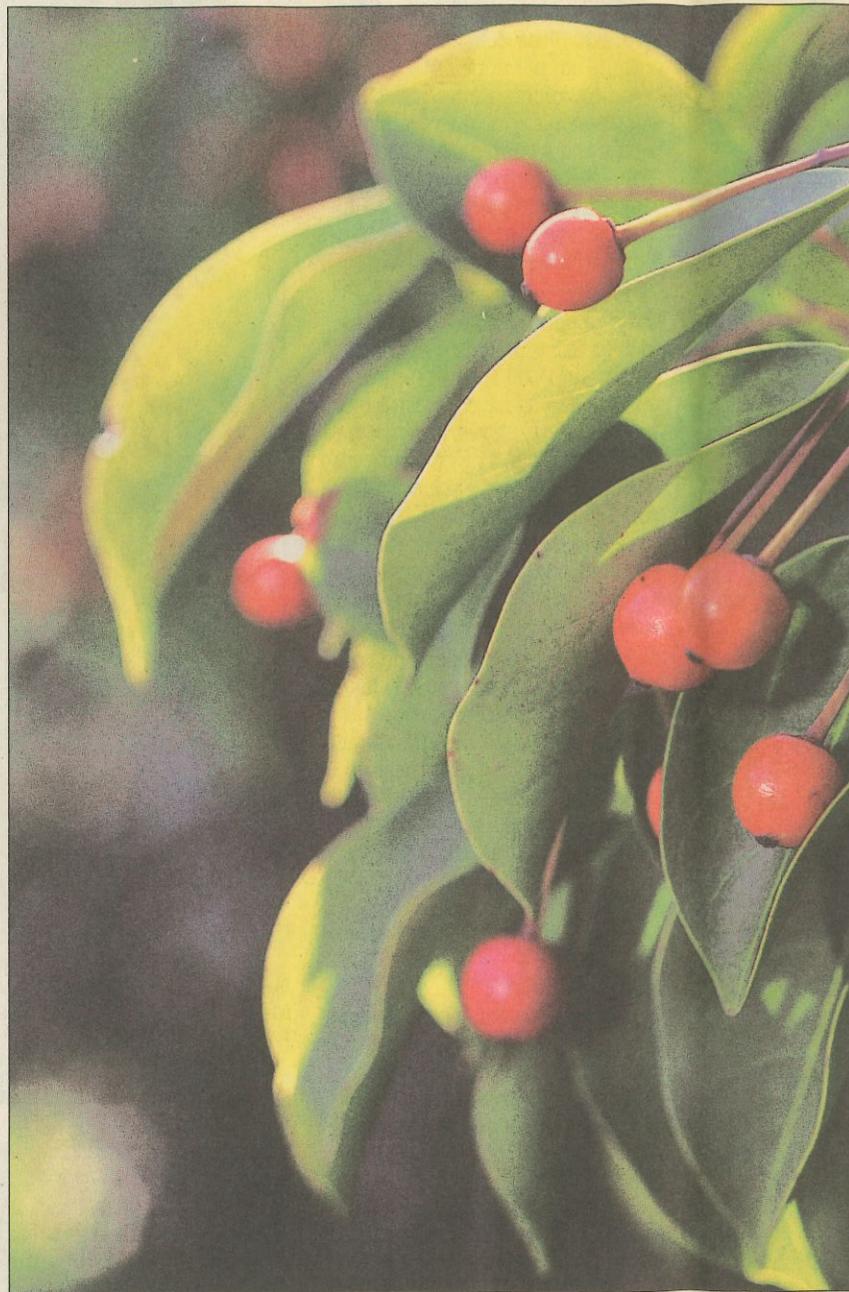
Chinese hollies, *Ilex cornuta* and its hybrids, include many popular tree and shrub forms, and females will produce some berries even without a nearby male. The foliage is glossy and deep green, but the spiniest among the hollies.

Japanese hollies (*Ilex crenata*) are atypical, carrying small, spineless leaves much like boxwood, for which it is often a substitute. Dwarf types can be kept to a height of 1 foot or less, making them ideal in borders. Their black berries are not conspicuous, although cultivars with yellow or ivory berries can be showy.

An unusual and handsome oddball is the Asian long-stalked holly, *Ilex pedunculosa*, which carries berries on elongated stems or petioles. A large shrub, it has spineless, leathery evergreen leaves about 2 inches long and 1 inch wide.

Another smooth-leaved type is the native Yaupon holly, colorfully known in Latin as *Ilex vomitoria*. Its small, gray-green leaves were used dried in a Native American tea. Preparations from fresh leaves were a purgative that produced the effect memorialized in the name.

The deciduous or winterberry hollies



Generally you will want a male pollinator of the same species as your female plant. Suppliers customarily recommend a companion for your lovelorn girl-holly; often the males have study names like 'Jersey Knight' 'Big Bull' or 'Blue Prince.' Generally, one male can service 3 to 8 females — which makes it unnecessary to use excessive numbers of non-fruiting plants.

In established neighborhoods where many hollies are grown, your neighbors' hollies may suffice, but don't entirely

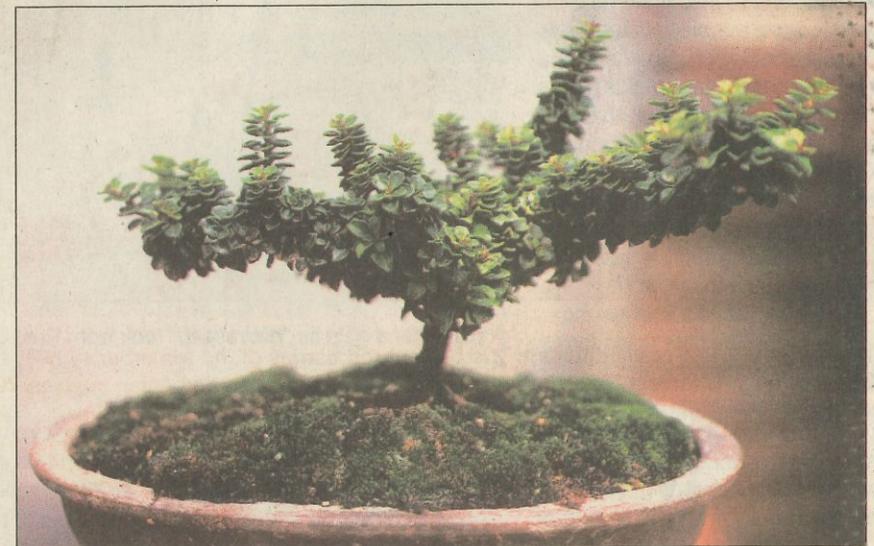
berry set will occur in full sun. Wild holly often grows as an understory species, sheltered by taller trees, and cultivated types often are planted at the edge of woodlands.

Perhaps the most important factor in selecting a site is accounting for the plant's mature size. Hollies grow slowly but inexorably to their full height with a generally dense and often impenetrable branch structure. The spiny-leaf types can be quite brutal on the hands and can catch at clothing; they probably



PHOTOS BY ED MURRAY/THE STAR-LEDGER

At left, the unusual long-stalked holly, growing at Rutgers Gardens in East Brunswick. Above, an Elwin Orton selection of the small-leaved Japanese holly known as 'Beehive.' Below, one of Orton's dwarf clones, 'Dwarf Pagoda,' trained as a bonsai.



uct formulated for acid-loving plants, like Hollytone or Miracid, and keep lime away from your hollies.

Hollies need regular pruning to keep them dense and shapely, and this is best done while they are dormant. December is good — judiciously trim branches for holiday decorations, taking care not to spoil the shape of the tree or bush, and cutting sparingly from young plants that have yet to establish themselves.

Mature, out-of-control hollies can be rejuvenated by a harsh form of pruning known as "hat reeking." This involves

Should berries remain green and then wither and drop off, suspect this pest.

If you've ever been bitten by spiny holly leaves, you won't be surprised to learn that even the tree itself can suffer from those sharp barbs. When branches thrash in high winds, leaves can be punctured by adjacent spines, leaving permanent marks known as "spine spot."

Berry production

Most of us plant hollies anticipating a glorious crop of berries, but sometimes our plants disappoint us. The reasons for

are twiggy shrubs that can reach 10 feet tall and wide. Botanically, they are either the native species *Ilex verticillata*, or crosses with the Asian species, *Ilex serrata*, which produce even heavier berry crops. Once the leaves fall, berries are very conspicuous, and especially lovely against snow. Cut branches full of berries are prized by floral arrangers.

Sex and the single holly

Most hollies are dioecious, that is, divided into male and female forms. Only the females produce berries, but they require a male nearby for good pollination. The pollen from male flowers is carried to the female flower by insects, and commercial holly growers often will place hives of honeybees in the field to assure a good berry set.

Flowers of both genders, borne in May or June, are creamy white and inconspicuous. Male flowers have four upright stamens, while female flowers have a bulb-like structure, which is actually the incipient berry, awaiting pollination. Make sure the plants you buy are properly marked; buying a holly with berries makes identification of a female a sure thing.

hybrids — offspring of two different species — in the wild.) The critical factor is that both male and female plants bloom at the same time, making pollination possible.

Selecting a site

The American holly's native range stretches from Massachusetts to Florida and west to Texas and Missouri. It prefers well-drained, sandy soil; some old growth native stands may be seen along the coast, as at Sandy Hook, part of Gateway National Park. The oldest holly there is estimated to be nearly 150 years old.

Hollies can tolerate a fairly wide range of soil types, although most will not thrive in permanently wet soils or in alkaline ones. They prefer a fertile, somewhat acid soil pH of 5.5 to 7, with 7 representing the neutral point on the scale measuring the range from acid (low numbers) to alkaline (high ones). Too high a pH can cause iron chlorosis, a yellowing of the leaves between veins.

While most hollies will grow in spots with some shade and appreciate protection from harsh winds, the greatest

shouldn't be located close to paths and doorways.

Females are the showboats of this genus, and the only ones to carry berries. These should be more prominent in mixed plantings, while the fruitless males can be placed in the background and at a distance of up to 30 feet.

Planting and aftercare

Hollies are best planted (or transplanted) in early spring, and should always be purchased in containers or with a burlap-covered rootball, never bare rooted, since these have a poor survival rate.

Some peat can be added to the planting hole to enhance the acidity of the soil. Young plants are your best bet; even though they can look somewhat gawky through their youth and adolescence, they establish themselves more readily than older larger specimens.

Keep newly planted hollies well-watered, since they dislike and can be damaged by drought. Mulch to conserve moisture in the soil. In the first winter, young trees can be wrapped in burlap or sprayed with anti-transpirants to protect them from harsh winter winds. Each spring, fertilize with a prod-

known as "hat packing." This involves cutting back every branch by half or three-quarters in late winter or early spring to form a well-shaped framework. Fertilize immediately afterward and water regularly — the skinny, all-but-leafless tree will customarily produce a new, vigorous flush of leaves.

Pests and diseases

Hollies are generally trouble-free, but they are susceptible to red mites, scale and leaf miners, which create brown "trails" on leaves. Powdery mildew may coat the leaves during hot, dry weather in summer. These problems are seldom serious enough to warrant treatment. Try a spray of insecticidal soap if bugs get out of hand.

Japanese hollies in particular are prone to root rot, an often fatal condition, so don't overwater these or plant them in damp locations. Many hollies will perish if their location floods, so bear this in mind if your property is in a flood plain.

Hollies also can be afflicted by the holly midge, which penetrates berries to lay its eggs. Larvae hatch within the berries, preventing them from ripening.

poor berry set can include the following:

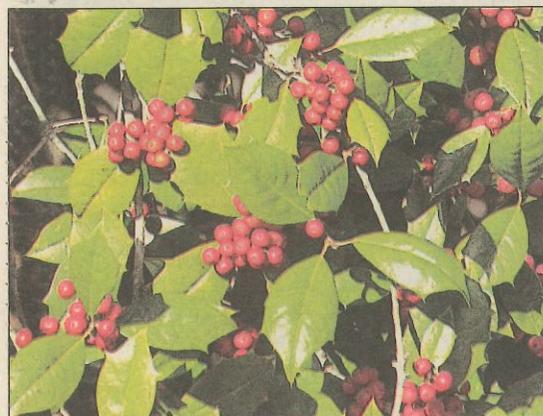
- The plant is male and will never set berries.
- The plant is female, but too young to produce a good crop. It can take up to seven years before flowering occurs, but most hollies blossom by the fourth or fifth season.

■ Excessive fertilization. Too much nitrogen can inhibit flower and berry production.

■ The weather is against you. Late cold snaps in spring can shrivel flower buds. Hot, dry spells in late spring or summer can discourage normal flowering.

■ Poor pollination. Either there is no appropriate male species nearby, or pollinating insects are few. You can hand-pollinate with an artist's brush if you really have time to spare, but for the homeowner, this is probably a last resort only possible for small specimens.

■ **One final note:** Don't eat the berries, since they are both unpalatable and toxic. Consumption can cause stomach upset, vomiting and drowsiness, although fatal reactions are rare.



At left, the American holly, *Ilex opaca*, showing the typical spiny leaves and bright red berries. This cultivar, 'Jersey Princess,' was the first introduction from the Rutgers University breeding program.



At left, the gorgeous blue-green foliage of the "blue" hollies showing their small berry clusters.

At right, a yellow-fruited evergreen holly, *Ilex xanthacarpa* 'Boyce Thompson.'



Join the club that grew from Jersey's 'Holly City'

The Holly Society of America was founded in Millville in Cumberland County in 1947 to promote, collect and disseminate information about the genus *Ilex*. It now has about 450 members across the United States and in foreign countries. At annual meetings held in the fall, the group sponsors a cutting exchange that distributes unusual species for hardiness trials around the country. It is the official registrar of new holly cultivars.

Members receive the quarterly Holly Society Journal and are invited to talks about holly cultivation throughout

the year at regional chapters, which in our area include the Long Island and Delaware Valley groups. To join, send \$25 to Holly Society of America Inc., 309 Buck St., Millville, N.J. 08332. You can reach the society at (856) 825-4300 or via its Web site, www.hollysocam.org, where you'll find a wealth of information about the society's history, services and favorite plant genus, as well as links to local chapters.

More reading

"Hollies: The Genus *Ilex*" by Fred C. Galle (Timber Press, 1997, \$59.95) —

the definitive and authoritative reference, with information on more than 800 species.

"Hollies, A Gardener's Guide,"

Janet Marinelli, editor (Brooklyn Botanic Garden, 2000, \$7.95) — What the gardener needs to know to grow hollies and use them in the landscape.

Plant sources

Most garden centers carry a few varieties of holly, but for the widest selection, try some of these mail-order sources:

Fairweather Gardens, Box 330,

Greenwich, N.J. 08323. Call (856) 451-6261 or log on to www.fairweathergardens.com. Plants are also available for pickup during periodic open houses or by appointment. Catalog, \$4 for a two-year subscription.

Holly Ridge Nursery, 5125 South Ridge Road, Geneva, Ohio 44041. Call (800) 465-5901 or go to www.hollyridge.com. The largest supplier of hollies in the country, if not the world.

Roslyn Nursery, 211 Burrs Lane, Dix Hills, N.Y. 11746. Call (631) 643-9347 or surf to www.roslynnursery.com.

Loads of hollies, featuring many of Elwin Orton's introductions, including dwarf rock garden clones.

Solomon Holly Farm, 2814 Butler Road, Chapel Hill, N.C. 27516. Call (919) 280-4499 or punch up www.solomonhollyfarm.com. American, Chinese, Japanese and deciduous species.

Wavecrest Nursery, 2509 Lakeshore Drive, Fennville, Mich. 49408. Call (888) 869-4159 or check out www.wavecrestnursery.com. Hollies a specialty.

— Valerie Sudol