



## The long, thin line at Holden

“Prime horticultural displays in key areas of the Holden Arboretum every day of the year for the benefit, enjoyment, and education of all visitors are my objectives for 1977,” says Winfried K. (Marty) Martin, superintendent of maintenance.

If past efforts are reliable indicators, Martin will succeed this year in achieving a garden-like appearance of the complex’s Thayer Center, rhododendron collection, and Corning Lake area. He will accomplish this while deploying men and equipment over an additional 11 major and 3 minor areas, an enormous task involving the care of 7,000 species and subspecies of cultivars.

Arboretum maintenance is somewhat of an uphill struggle for Martin. This stems partly from the fact that the arboretum has grown in leaps and bounds from an original 100-acre tract in 1931. Holden directors have invested wisely in the future through programs emphasizing the acquisition of land and the



preservation of natural eco-systems. Holden is therefore a relatively "young" arboretum, and one that has expanded more rapidly than allocations for the care of such vast grounds. This also may be translated into a great potential, or bright future, for "the world's largest" arboretum.

In total, the arboretum consists of 2,643 acres in northeast Ohio — about 25 mi east of Cleveland and 15 mi south of Lake Erie. Over half of this hilly Western Reserve land is preserved as forest and monitored by a naturalist. The remaining grounds range from a public-entrance area, which is highly maintained, to outlying areas providing a natural transition into the woods. In fact, naturalist considerations sometimes outweigh those of grounds care, keeping maintenance at lower levels than desired by Martin.

Scattered throughout Holden's in-between areas are its famous collections — planned, organized plantings of trees and shrubs that

*Continued on page 24*

## Holden, nature's "work of art"

One of the world's largest "museums of woody plants," The Holden Arboretum in northeast Ohio is a 2,643-acre showcase for over 7,000 different species, varieties, and cultivars of trees, shrubs, and vines. Native and foreign plants under cultivation range from exotic nut trees to ornamental shrubs. Collections, or living displays, include a wild-flower garden, experimental nurseries, a hillside of azaleas, maples, and viburnums, and entire forest eco-systems replete with deer, birds, and small animals.

The reach of the arboretum extends from nearby communities to international arboreal circles. Plant material, seeds, and scion wood are exchanged with arboretums and botanical gardens throughout the

temperate world. New plants are propagated in the nurseries, which are also used to test unusual and foreign trees and shrubs for aesthetic appeal and climatical hardiness. Hundreds of woody plants are given annually to municipalities, churches, schools, and hospitals.

A resident staff of experts — arborists, horticulturists, and naturalists — direct Holden programs, hold talks and demonstrations, conduct youth and adult classes, serve as public consultants, and provide services such as plant/disease identification and species recommendation. These activities are multiplied through many volunteers from the Western Reserve area, plus representatives of universities in Cleveland (25 mi west of the Arboretum). Grounds of the four-square-mile complex are open to members throughout the year, and to the public from April through October.



*Holden Arboretum hosts a multitude of activities from special events, to picnics and field days, to lazy summer afternoons by a pond.*



# Holden *Continued*

are maintained at medium to low maintenance levels. Increased maintenance would provide a more effective setting for some of the collections, says Martin, especially the shrubs in certain public areas.

The arboretum's 5-tractor/7-truck fleet and 8-man crew are spread pretty thin over the 1,300 acres under maintenance. Martin jokingly refers to his task as one of "keeping things together with baling wire and C-clamps." He is slightly apologetic about less-than-desired maintenance levels. He is firmly dedicated to his job, present and future. And he is very serious about constantly improving appearance levels as much as possible within the constraints of funds, manpower, and equipment.

Nonetheless, Martin is intent on transforming Holden into a truly great arboretum. He wants to equal or surpass European arboretums of which he is quite knowledgeable.

Trained in silva-culture, Martin was a forest ranger for the Bavarian government until 1953. His first 15 years in the U.S. were devoted to machinery maintenance. He joined Holden in 1968 and became its grounds superintendent in early 1974.

The grounds crew consists of Martin, one janitor, two maintenance men and four gardeners. This year-round force is supplemented by two part-time students from a nearby vocational school, a student from one college in the spring, a student from another college in the fall, and eight summer interns — men and women majoring in horticulture at various universities. In addition, members of the arboretum volunteer to care for the wildflower garden.

Student workers offer much-needed labor and represent potential additions to the staff. But they require considerable supervision, especially when certain equipment, operations, or plantings are involved. Attracting and keeping com-

*Continued on page 45*

*Sixteen operations in four categories keep Holden's eight-man crew busy the year-round. This force is supplemented by part-time high-school students, summer interns from colleges, and member volunteers. The arboretum annually attracts about 100,000 visitors and 20,000 school children. Gates are opened to the public in April when over 100 varieties of crab apples start blossoming. Visitation remains high with the blooming of lilacs and rhododendrons in May and June, respectively. Attendance slackens for two and a half months, then peaks again during the fall coloring in September and October.*

## Blending Maintenance with Public Viewing

Operations	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Collections of trees and shrubs</b>												
Prune, trim		■	■	■	■							
Transplant			■	■	■	■			■	■	■	■
Apply herbicides		■	■	■								
Fertilize				■	■	■	■	■	■	■		
Irrigate							■	■	■			
Clean-up, chip	■										■	■
<b>Grounds</b>												
Fertilize			■	■	■							
Mow				■	■	■	■	■	■	■		
Leaf removal										■	■	■
<b>Nurseries*</b>												
Prune		■	■	■	■							
Apply herbicides		■	■	■								
Till					■	■	■	■	■	■		
Irrigate							■	■	■			
<b>Other</b>												
Snow removal	■	■	■	■								■
Roads, trails, and picnic areas	■	■	■	■	■	■	■	■	■	■	■	■

Key: ■ regular program, ■ as needed

\* Excludes manual digging, balling, staking, mulching, etc.

## Holden *Continued*

petent help is always a problem, with the higher wages of nearby landscapers often luring away the more experienced help.

Three 32-hp diesel units and two older utility models comprise the tractor fleet, along with four 15-hp compact tractors and two interchangeable power units. The major attachments are two 60-in. flail mowers, three 60-in. rotary mowers, one 72-in. disk harrow, one front-end blade, four angle-type snow blades, and allied units for the compacts and power units.

Small powered tools at Holden include a push mower, 18-in. rotary tiller, 30-in. rotary tiller, leaf blower, and two chain saws. Three large self-powered units are a 500-gal. sprayer, portable irrigation pump, and wood chipper. The next item on Martin's most-wanted list is a backhoe. His truck fleet consists of two four-wheel drive models, a 1 1/2-ton stake-bed and, a 1 1/2-ton dump type, a 1/4-

ton pickup, and a van.

The busiest season is in the fall when containerized nursery material is transplanted. There are 20 acres of nursery on the main grounds, plus green house, and a much larger network of nurseries on a nearby 600-acre tract of land.

Weather permitting, most leaf removal and chipping operations are performed in the fall. Snow removal proved to be an especially big job last winter, when county plows were unable to get anywhere near Holden. The jury is still out on how much damage the harsh '76-77 winter did to plant material. Some evergreens and test plants are visibly affected, but Martin is waiting until June to assess the full extent of damage.

An annual affair at Holden is operation of a Sugar Bush. The maples yielded 250 gal. of syrup this spring under the tutelage of nearby Amish farmers, who also are called on to make building repairs.

Main preparation for the tourist season involves clean-up, trimming, and mowing operations. Applica-

tions of Casoron herbicide are made in the spring. Pests are not much of a problem at Holden, says Martin, but he uses Malathion when necessary. The only recurring pests seem to be birch borer, scale in general, and leaf mites on holly. Grounds are fertilized in the spring, whereas shrub/tree collections receive random applications through the spring and summer. The irrigation period occurs during late-July and August.

This year's goals — prime displays in key areas — will be attained in part through close cooperation with a new horticulturist, Peter Bristol, and the plant propagator, Steve Lamore. Also, the landscape design for Thayer Center is being revised, increasing the amounts of labor and concentrated supervision, in order to ensure speedy performance of work and an improved finished appearance.

A consistent, long-term management plan is being formulated for Holden's prize rhododendron collection — one that Martin hopes "to be proud of" when he retires.

*Continued on page 46*

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# Holden *Continued*

This collection presently consists of about 3,000 plants in 25 beds featuring 325 different cultivars and species.

Also under development is an even longer term master plan. Although still tentative, it has key provisions allowing much higher levels of maintenance and calling for the establishment of a mini-arboretum within the complex, with maintenance and appearance levels of the first rank.

For now, Martin has a budget of \$300,000 for labor, equipment, and supplies (double the amount of two years ago). Regardless of funds, Martin and his men consistently achieve yearly incremental improvements in maintenance operations. Some of the chief reasons for this lie in his management techniques.

At the outset, Martin broke down the arboretum into a hierarchy of 14 key areas. Many of them are further divided into sub-areas. The breakdown enabled him

to rank the areas according to maintenance priorities based on amount of visitor traffic and density of plantings in a collection. The payoff for all this is evident in a coherent system for scheduling manpower and equipment — an imperative when there is not enough of either to go around.

For example, areas with dense plantings and/or heavy visitor traffic are mostly likely to be mowed with push or compact-tractor mowers. Remote and open areas of the arboretum are mowed less often with 60-in.-wide flail or rotary units mounted on utility tractors.

Another management tool of Martin's is a scheme for monitoring work performed in each area on a daily basis. This is accomplished through time slips, or sheets, which are turned in by each crewman for each site he worked at that day. These records help to plan daily and weekly work routines, and are essential in calculating the annual distribution of hours spent on various areas. Such a breakdown is pitted against appearance levels — those

achieved versus those desired — and used in setting new maintenance objectives for the coming year.

The time-slip system promotes smooth execution of work anywhere in the four-square-mile arboretum. It also helps to minimize the number of daily rounds Martin and a ¾-ton pickup must make over a complex having an end-to-end distance of four miles. As it is, supervisory rounds and administrative details keep Martin from spending more than 20% of his time performing on-site work with his men. Eventually, he hopes to get this figure into the 40% to 50% range.

Two foremen help Martin to maintain Holden's far-flung collections of woody plants. One foreman is responsible for the multi-faceted main-display area, which includes Thayer Center. The other is in charge of the prestigious rhododendron and quercus collections. At peak times, a foreman can request the help of other crewmen. Mini-task forces are thus hastily formed, but they are just as quickly abandoned and redeployed as soon as the critical jobs are completed. □

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