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Bulletin No. 8: The Mamacoke Acquisition and Our Research Program

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THE CONNECTICUT ARBORETUM

THE MAMACOKE ACQUISITION
AND
OUR RESEARCH PROGRAM

CONNECTICUT COLLEGE
NEW LONDON, CONNECTICUT



BULLETIN NO. 8
SEPTEMBER 1955

MAMACOKE ISLAND

The Latest Addition to the Arboretum

RICHARD H. GOODWIN

On March 14, 1955, final payment was made to Merritt-Chapman & Scott Corporation for Mamacoke Island, a forty-acre wooded peninsula connected to the western bank of the Thames River by a small salt marsh. The property was purchased by the Director of the Arboretum with funds contributed by 257 individuals and 29 organizations (see list on page 9) and was subsequently quit-claimed to Connecticut College. The terms of the Mamacoke gift are unique. The land has been given to the College for use as Arboretum. It is to be held in trust for the enjoyment of future generations. The wild character of the island and its salt marsh are to be preserved; no roads to be constructed. In the event that it should become impracticable for the College to administer the property, two organizations, the Connecticut Forest and Park Association and the Nature Conservancy, have been named as contingent "trustees." The complete text of the deed has been reproduced in this bulletin for the benefit of those who may be interested in the legal aspects of the preservation of wild areas. We are indebted to Attorney Belton A. Copp of New London for drawing up this deed.

The main ridge of Mamacoke Island is a rocky outcrop of gneiss rising steeply on three sides to a height of 130 feet above the river. The open crest commands splendid views up and down the river and served as a look-out point and campsite for the Indians in precolonial times. We have an early record of its being included as part of a grant to Deane Winthrop, brother of John Winthrop; but since Deane never settled in Connecticut, because he could get no one to drive his cattle down from Massachusetts, the land was left to the Town of New London. In 1650 at a town meeting it was voted that Mamacoke "be reserved as a convenient place to build a hospitall." Shortly thereafter the grant was deeded to the Rev. Richard Blinman, who sold it to James Rogers in 1657. James' son, John, founder of a religious sect known as the Rogerines, lived on the grant, but not on the island itself. The Rogerines were apparently mistaken for Quakers by some of the local residents, and the section of Waterford along the river north of New London is still known as Quaker Hill. John Rogers and several members of his family succumbed to smallpox in the fall of 1721 and were buried on the bank of the Thames River on land now belonging to the College.

The relation of Mamacoke to the adjacent holdings of the Connecticut Arboretum is shown on the map on page 5. A person wishing to visit the island may park his car on Benham Road about half way down the hill

from Mohegan Ave. (Route 32) and take the bridle path, as indicated on the map, north across the Matthies Tract. This was a 26-acre portion of the Benham Farm previous to its purchase with a gift from Miss Katharine Matthies in 1946. The remains of an old apple orchard may still be found on the hillside. Much of this slope has been planted to white and red pine trees, but to the left of the path may be seen an experimental area which is being landscaped with native plants by selectively killing off the undesirable species with herbicides. The trail crosses a small brook bed over a culvert and then swings down the hill past an enormous red oak into a field at the head of a cove skirted with beech trees. Continuing eastward across a corner of the Avery Tract the trail leads through an abandoned gravel pit and thence over the Central Vermont Railroad tracks to the salt marsh.



The salt marsh and cove west of Mamacoke. A bit of the stone wall mentioned in the text may be seen at the end of the island (left center).

The salt marsh, which is about three acres in extent, adds a new habitat to those previously found within the boundaries of the Arboretum. Here one can find such species as arrow grass (*Triglochin maritima*), black grass (*Juncus Gerardi*), spike grass (*Distichlis spicata*), switch grass (*Panicum virgatum*), the salt meadow grasses (*Spartina patens* and *S. alterniflora*), sea lavender (*Limonium carolinianum*), salt marsh goldenrod

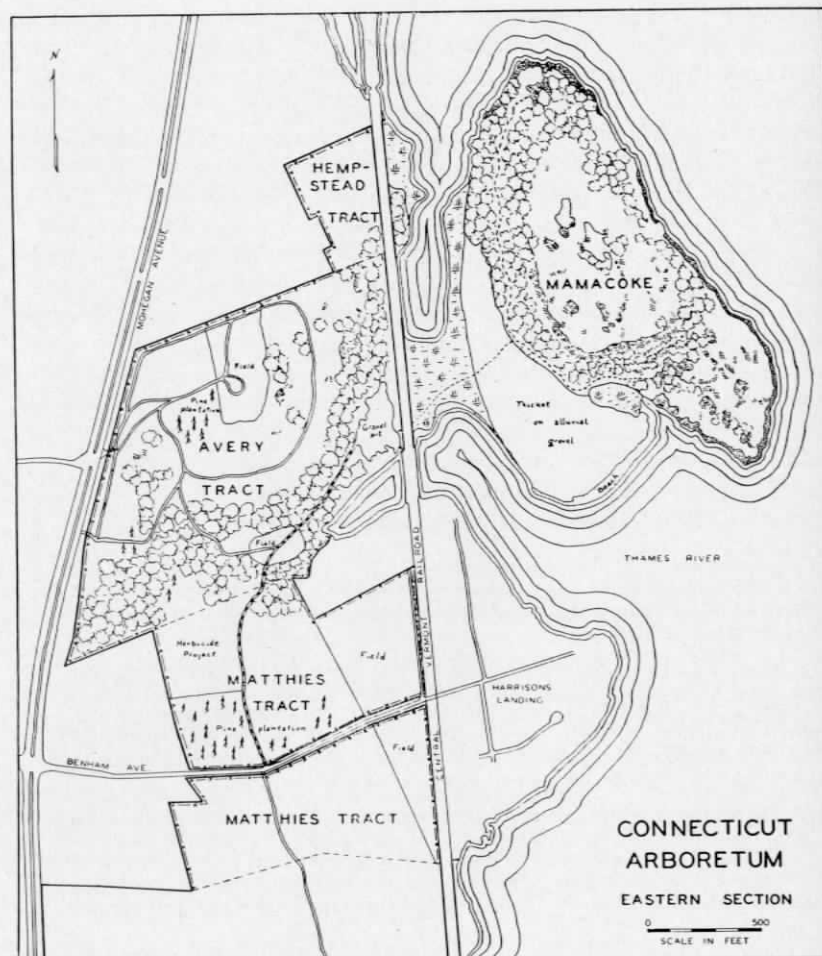
(*Solidago sempervirens*), and two woody composites, groundsel tree (*Baccharis balimifolia*) and marsh elder (*Iva frutescens*). It is of interest to note that Roger Williams in a letter to John Winthrop, dated 1645, mentions that the marshes and meadows were mowed at "upper and lower Mamacock." This was the first year of white settlement, and salt marsh hay was probably the only hay available in the Thames River estuary. "Lower Mamacock" refers to the peninsula upon which Fort Trumbull was built, and "upper Mamacock" is the area we are about to visit.

A path, which is inundated only at very high tide, leads across the marsh to a low river terrace of alluvial gravel. This area was the site of a small shipyard during the early 19th century. It is now growing up to a thicket of sumach, bayberry, brambles, and poplar. Our trail soon branches, the right hand fork leading us past a secluded little marshy area and then gradually up onto ledges which drop off steeply into deep water at the southern tip of the island. Two dolphins just off the southwestern shore were installed as a mooring for lighters by the Merritt-Chapman & Scott Corporation in 1944, shortly after it acquired the property. Following the crest of the ridge to the north across ledges and grassy openings we reach the highest point on the island. Near here may be found a large boulder deposited by the retreating ice sheet. The grassy openings occur where the soil is too thin to support trees. The dominant species, a prairie grass called beard grass or little blue stem (*Andropogon scoparius*), has probably flourished in this spot since prehistoric times.

Taking the left fork of the trail shortly after we cross the marsh we traverse oak woods along the base of steep ledges toward the northern tip of the island. To the left may be seen the remains of an old stone wall which was undoubtedly constructed as a cattle fence at the margin of the salt marsh. Today this wall extends along the shore well beyond any trace of marsh, indicating that a considerable portion of the meadow has been eroded away since the construction of the wall. At the northern end of the island the woods thin out. A cover of blueberry bushes is broken by flat open ledges which slope gently down to the water's edge, making this an ideal picnic area. Here several outdoor fireplaces are available to those approaching the spot by foot or by boat.

Across the cove to the west may be seen the steep wooded slopes of the Avery and Hempstead Tracts. The latter, a five-acre portion of a farm belonging to the Hempstead family for over eighty years, was acquired from Mr. E. Judson Hempstead and his sister, Mrs. Agnes H. Libby, in 1952. Sixteen friends of the Arboretum (listed on page 11) contributed \$435 toward this purchase. Through the vision of those who love the natural beauty of our countryside and who realize the importance of preserving it for the future, the Arboretum has added four important pieces of property to its holdings—93 acres broken only by the Central Vermont

Railroad right-of-way. As the slopes of the Matthies, Avery, and Hempstead Tracts are developed under the management of the Arboretum, they give promise of making a perfect setting for Mamacoke Island just off shore.



This map shows the eastern portion of the Connecticut Arboretum with its system of bridge trails and present land-use pattern. The approach to Mamacoke from Benham Avenue across the Matthies Tract is shown. The foot trails on the island are indicated by a broken line.

The Mamacoke Island Deed

TO ALL PEOPLE TO WHOM THESE PRESENTS SHALL COME,
GREETING:

KNOW YE, that I, RICHARD H. GOODWIN, of the City and County of New London and State of Connecticut, for the consideration of ONE DOLLAR (\$1.00) and other good and valuable consideration received to my full satisfaction of THE CONNECTICUT COLLEGE FOR WOMEN, an educational institution incorporated and existing under the laws of the State of Connecticut and located in New London, Connecticut, do remise, release, and forever QUIT-CLAIM unto said CONNECTICUT COLLEGE FOR WOMEN, its successors and assigns, while, until and so long as said releasee, its successors and assigns, use the hereinafter described property as an arboretum for recreational, educational or scientific purposes, said land and salt marsh remaining substantially in its wild character with its natural features preserved, and while, until and so long as no roads or ways are built or established, except paths for pedestrian and/or equestrian use only, all the right, title, interest, claim and demand whatsoever as I, the said releasor, have or ought to have in or to all that certain tract of land situated in the Town of Waterford, with any appurtenances, emblements, fructus naturales, fixtures, and improvements thereon standing, known as Mamacoke Island, and described as follows:

A peninsula-like piece of land and marsh, containing Forty and one-half (40½) acres, more or less, bounded westerly by land now or formerly of the New London-Northern Railway Company and on all other sides by the waters of the Thames River.

Being the same premises conveyed to the releasor by the Merritt-Chapman & Scott Corporation by its Quit-Claim deed dated the 14th day of March, 1955, and recorded in Volume 106, Pages 504-505, of the Town of Waterford Land Records, excluding only the right-of-way as more particularly described therein, which right-of-way is deeded to the releasee herein by the releasor under separate deed dated 16th day of March, 1955.

For a more particular description of said premises reference is hereby made to a plan entitled "Plan of 'Mamacoke' Waterford, Conn., Showing 'Right-of-way' from Mohegan Avenue to Land of the Railway Company. Conveyed by The Savings Bank of New London to Merritt-Chapman & Scott Corporation. September 21, 1943, Scale 1"=80'", which plan is on file in the Waterford Land Records.

Said premises are conveyed subject to the condition that the releasee, its successors and assigns, provide a right-of-way suitable for pedestrian and/or equestrian purposes to Mamacoke Island, which said right-of-way shall be appurtenant to said premises and pass with the fee in the dominant estate. Said premises are further conveyed together with whatever right, title, and interest the releasor may have in and to a right-of-way over and across the land of the New London-Northern Railway Company land to and from said Mamacoke Island.

Upon the failure of any of these conditions or limitations then said property shall pass over subject to the conditions and restrictions of this deed to the Connecticut Forest and Park Association or its successors or successor by merger or consolidation, if in existence, or if not, then to the Nature Conservancy or its successors or successor by merger or consolidation, providing, however, that the releasee, its successors or assigns, is hereby expressly empowered to transfer and convey all of its right, title and interest in said premises for no consideration, or for a consideration of less than FIVE HUNDRED DOLLARS (\$500.00) in money or value, to either of the above-named organizations or their successor willing to accept said premises for the purposes described and on the conditions hereinbefore set forth, said premises to be offered to the organizations or their successor in the order they are listed above by a registered letter addressed to the secretary of the organization annexing a copy of this deed; on the failure of all the above mentioned organizations to elect to receive and maintain said property for said purposes, which election if made shall be in writing and shall be delivered to the releasee within ninety (90) days from the date the said offers as aforesaid were made to said organizations respectively, said releasee, its successor or assigns, may transfer and convey said premises or any part thereof by sale, mortgage, lease, gift or pledge to any person, persons or corporation and for any consideration, free of all conditions and limitations; in such event said conditions and limitations are terminated and are of no force and effect.

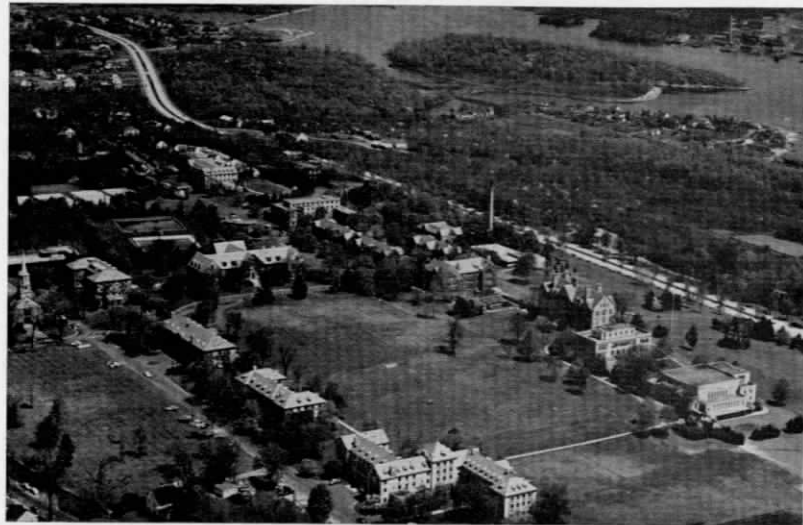
In the event that said premises are taken by process of eminent domain for public purposes, all proceeds realized as damages and compensation for such taking in any such action, or as a result of any such action, shall be kept by said College as an endowment fund, to be administered by the trustees of said College, the income of which is to be used for the maintenance and development of the Connecticut Arboretum for as long as an arboretum is maintained by said College, and in the event that said College shall no longer maintain an arboretum, then thereafter the principal and income of said endowment fund, may be used for the general purposes of said College.

It is the intention of the releasor that these premises be part of the Arboretum of the College, and be used for arboretum purposes as hereinbefore set forth, since it was only through the contributions of the many generous people who gave money to acquire land for these purposes that the purchase of these premises was made possible. Provision is made, however, for the contingency that should management of these premises for such purposes prove to be totally impracticable the releasee may transfer said premises as hereinbefore set forth.

TO HAVE AND TO HOLD the premises, with all the appurtenances, emblements, fructus naturales, fixtures and improvements, unto the said releasee upon the conditions and limitations stated and to its successors and assigns forever, so that neither I, the releasor, nor my heirs nor any other person under me or them shall hereafter have any claim, right or title in or to the premises, or any part thereof, except as hereinbefore stated, but therefrom I and they are by these presents forever barred and excluded.

The consideration is such that no documentary stamps are required.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this first day of June, A.D., 1955.



Air view looking northeastward across the Connecticut College campus. The Avery and Matthies Tracts and Mamacoke Island can be seen in the distance.

The Mamacoke Island Fund Financial Statement

Contributions from 29 organizations	\$ 5,844.42
Contributions from 257 individuals	9,344.40
Special contribution toward endowment for the Island from the Conservation and Re- search Foundation	1,000.00
Total contributions	16,188.82
Savings bank interest	38.32
Total receipts	16,227.14
Payment to Merritt-Chapman & Scott Corp.	\$15,000.00
Expenses of the purchase transaction	89.20
Total expenses	15,089.20
Balance credited toward endowment	1,137.94

Contributors to the Mamacoke Island Fund

ORGANIZATIONS

American Tree Association	\$2,000.00	Garden Club of New Haven	25.00
Bodenwein Public Benevolent Foundation	500.00	Glastonbury Garden Club	25.00
Branford Garden Club	25.00	Greenwich Garden Club	25.00
Cheshire Garden Club	10.00	Homeland Foundation, Inc.	200.00
Chester Garden Club	10.00	Middletown Garden Club	50.00
Connecticut Botanical Society	50.00	Mystic Garden Club	25.00
Connecticut Nurserymen's Association	200.00	New London Garden Club	200.00
Conservation Class, Willimantic State Teachers College	4.42	North Stonington Garden Club	10.00
Conservation and Research Foundation	1,000.00	Old Saybrook Garden Club	10.00
Coventry Garden Club	10.00	Palmer Fund	1,000.00
Dart & Bogue Co.	10.00	Sarah Ludlow Chapter, D.A.R.	5.00
Emergency Conservation Committee	100.00	Thames River Garden Club	30.00
Essex Garden Club	10.00	Tudor Foundation	200.00
		Waterbury Naturalist Club, Inc.	50.00
		The Wednesday Afternoon Club (Norwich)	10.00
		Westport Garden Club	50.00

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 Mrs. Malcolm J. Edgerton
 Mr. George Haines, IV
 Mr. Chauncey H. Hand

Miss Louise C. Howe
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 Dr. Harold J. Lutz
 Miss Cora A. Marsh
 Miss Katharine Matthies
 Miss Rosemary Park
 Miss Marcella Putnam
 Miss Elizabeth C. Wright

Long-Range Studies in the Natural Area

WILLIAM A. NIERING

The Connecticut Arboretum Natural Area, established in 1952, is one of two such tracts now found within the state. These areas have been set aside as samples of our natural heritage, where native plants and animals will remain undisturbed by man. Along with their aesthetic, educational and recreational values, they afford exceptional opportunities for long-term biological investigations, especially when administered by an educational institution and situated as this one is immediately adjacent to the campus.

The long-range studies in the Natural Area were initiated by the Director in the summer of 1952 and have since been continued each summer through the financial support of the Connecticut Geological and Natural History Survey. Students majoring in botany participate in the field studies, thereby gaining invaluable firsthand experience in ecological research.

The field work thus far has included mapping the vegetation along permanent transect lines and studying the breeding bird population. The vegetation studies involved the establishment of four equally spaced transects,

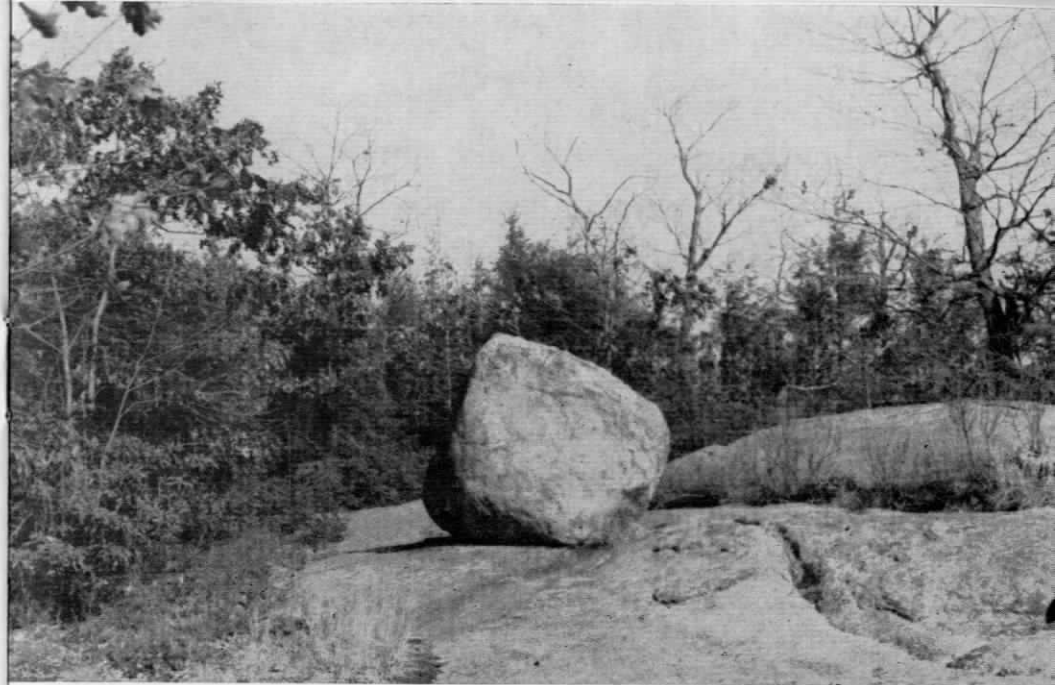
twenty feet in width, running east and west across the area. Permanent markers have been placed every fifty feet along the lines so the exact area can be relocated. Along these transects the vegetation, including trees, shrubs, herbs, mosses and lichens, has been accurately mapped. In addition, permanent photographic records have been taken at fifty to one hundred foot intervals. These photostations can also be precisely relocated. The data are now being compiled and reproduced on microfilm for deposit in the archives of the library.

The transects cross the well known Bolleswood which, prior to the 1938 hurricane, was dominated by two-hundred year old hemlock. Most of the large trees were felled by this storm, and today the area is recovering with many small hemlock scattered among the larger oak. Other habitats covered by the survey include a ravine forest, red maple swamps, rock outcrops, abandoned pastures, thickets, and a sphagnum bog.

The vegetation of many of these areas, as in the case of the Bolleswood, is in a relatively unstable state, and therefore, marked modifications can be expected in the future. The fundamental purpose of the present program is to follow these changes through the years by resurveying the transects at suitable intervals—five, ten, or twenty-five years, depending upon the rapidity of change.

The breeding bird population was also studied during the spring seasons of 1953 and 1955. The census involved early morning observations along parallel trails throughout the area. All birds seen or heard were plotted on species maps. The reoccurrence of a given pair in the same general vicinity, after several trips, is indicative of a breeding territory for that particular species. Upon compiling the data it has been found that approximately thirty different species nest within the Natural Area. The restriction of certain species to certain habitats is most striking. For example, in the wooded areas the red-eyed vireo, black-and-white warbler, wood thrush, oven bird, veery, and hooded warbler are the most conspicuous. In contrast, the semi-open and shrub lands are dominated by the northern yellowthroat, towhee, cat bird, and chestnut-sided warbler. This year two new species, the yellow-breasted chat and Carolina wren, were found nesting for the first time. In addition, the number of hooded warblers increased markedly, while there was a decrease in number of Canada warblers. The Louisiana water thrush, so characteristic along the stream in the ravine, was not found this year. As the vegetation of the various habitats throughout the Natural Area gradually changes, one can expect correlated shifts in the bird life. It is hoped to repeat these studies periodically to see how this occurs.

Further studies are planned for the rock outcrops. Here very detailed transects will be laid out in order to follow the exact process whereby lichens, mosses and other plants eventually cover these exposed surfaces.



Rocky outcrop found within the Natural Area. One of the transects crosses this ledge just to the south of the large boulder which is a glacial erratic. This is an excellent area on which to study the succession of lichens, mosses and other early pioneers upon bare rock surfaces.

Beside the numerous other possibilities, it is hoped that joint studies with the zoologists can be arranged in order to survey some of the other faunistic aspects such as the small mammal and insect populations.

In addition to the long-range studies, the Natural Area provides unlimited opportunities for students to carry on independent research. Already one student interested in learning more about mosses and lichens has studied the role of these and higher plants on the rock outcrops. This report, which adds greatly to our knowledge of the area, will be filed, along with other data, for future reference.

Among the many other changes, it will be possible to follow the exact transformation of an old field, with its characteristic plant and animal life, into a thicket and eventually into a forest. The basic data to initiate this long-term research have been ascertained. Free from the interference of man the Natural Area will continue to increase in value as the future reveals its dynamic story.

Research Projects on Herbicides

Practical Applications of Interest to Property Owners, Sportsmen, Foresters, and Public Utilities

WILLIAM A. NIERING

Chemical weed killers offer a new and fascinating approach in weed control. Today it is possible to control most weeds and to manipulate the vegetation by selectively eliminating certain species while leaving desirable ones unharmed. These chemicals appear on the market under such trade names as Ammate, 2,4-D—2,4,5-T Brush Killer, Esteron 245, and Weed-one. With the many potentialities opened up by these herbicides the Arboretum has initiated a program which embraces weed control in the tree and shrub collections, forest management, manipulation of vegetation for landscaping and wildlife, and right-of-way maintenance under power lines.

Weed control in tree and shrub collections. In the tree and shrub plantings woody species such as poison ivy, greenbrier, oriental bittersweet and Japanese honeysuckle are most pestiferous. Various techniques are being tested in order to determine the most effective treatments to eliminate these species. Among the variables being assessed are type and concentration of compound and season and method of application.

Although the findings are still preliminary after two years of work, certain results are worth reporting. Of the four species mentioned Japanese honeysuckle seems to be the most difficult to eradicate. However, spring treatment with an aqueous spray of 2,4-D appears promising. The others are controlled by summer applications of herbicides containing mixtures of 2,4-D and 2,4,5-T, but at least two treatments are usually necessary for eradication. Where feasible, a mixture of oil and water plus the chemical appears even more effective than water alone in getting complete kill with one application. In all cases wetting the stems may be more important than spraying the leaves. Treatments during the winter, except on greenbrier, are relatively ineffective. Where spraying is being done close to desirable specimens extreme caution must be exercised. This is especially important in early spring, when an oil carrier is being used, since the volatile fumes have adverse effects upon the foliage of adjacent trees and shrubs. In areas where the weed species twine around the stems of plants to be saved, the vines must be removed by hand for several feet in order to avoid getting the chemical on the stems of the valuable species. Since drift may also be dangerous it is undesirable to spray on windy days. When these precautions are followed herbicides can be used safely.



Botany majors mapping the vegetation along one of the permanent transect lines in the Natural Area. Cover sight is being used to measure the density of the leafy canopy.

Forestry Practices. In areas where evergreen plantations are being established competitive species such as black cherry and tree-of-heaven are being eliminated. For cherry, Ammate placed in notches cut in the base of the trunk is very effective. During late summer, basal bark treatment with 2,4,5-T gives a good kill with little or no resuckering after two years. The basal bark technique involves soaking the lower 12 inches of the stem down to the ground line. No definite results are yet available for eliminating tree-of-heaven.

In a young sprout-oak forest on the Avery Tract a selective thinning operation is in progress using basal sprays during the winter.

Manipulation of vegetation for landscaping and wildlife. With the advent of herbicides, abandoned fields and thicket areas now afford a new adventure in landscaping. Ornamentally undesirable species can be selectively removed by basal bark treatment leaving attractive shrubs such as mountain laurel, flowering dogwood, red cedar, gray birch, bayberry, high bush blueberry and others to develop. These can be left as scattered specimens in a grassland matrix along with black-eyed Susans, daisies, butterfly weed and other attractive perennials.

A hillside on the Matthies Tract, formerly occupied by an old orchard and now abandoned, is the site of a demonstration area of this type. Another smaller one is just behind the Outdoor Theatre. In these areas black cherry, sumach, and blackberry are being eliminated in order to allow the high bush blueberry, flowering dogwood, gray birch, red cedar and mountain laurel to stand out more conspicuously.

With the current trend of more and more people acquiring an acre or two in the country, this technique offers unlimited possibilities in natural landscaping. No longer is expensive hand clearing required. With chemicals, encroaching brushland or forest can be transformed into a picturesque semi-wild landscape.

In another area of the abandoned orchard, plans are being made to manage the vegetation for wildlife. Since animal life changes with corresponding changes in plant life, it is desirable to maintain as many different types of habitat as possible in order to insure a variety of wildlife. For example, certain open grasslands favor the seed-eating song birds, quail, young grouse and those animals typically found breeding in such a habitat. In contrast, shrublands furnished excellent food and cover for rabbits and such birds as the northern yellow-throat, chestnut-sided warbler, towhee and cat bird. Therefore, grass and shrub lands will be created. Since these areas, if undisturbed, usually grow up to forest in this region, the existing vegetation is being retrogressed to grassland or shrubland merely by eliminating all woody species in the former and the potential trees in the latter.

Of course, the question may well be asked, how long will these manipulated areas remain as grass and shrub lands? Will not the forest eventually take over? There is evidence that in the northeast these areas, after being set back, do not rapidly return to shrubland or forest. A study of these areas through the years will add to our knowledge concerning this fundamental ecological problem.

Right-of-way demonstration area. In recent years utility companies have also turned to chemicals as a means of controlling the vegetation along their rights-of-way. However, much of this spraying has been done indiscriminately, creating unsightly brown swaths across the countryside which have attracted considerable public attention. This indiscriminate spraying, with little or no regard for the aesthetic or for ecological principles has prompted the establishment of our demonstration area. Here current and new techniques will be impartially analyzed from the standpoint of creating a desirable plant cover under the lines with maximum stability and wildlife values. To satisfy the utilities the rights-of-way must be free of trees which would eventually grow or fall into the lines. They must also be readily accessible to repair crews. Therefore, the Arboretum demonstration area is being managed with these various needs in mind.

Immediately under the lines a road will be maintained for the use of the maintenance crews. Trees which would eventually grow into the wires will be eliminated by various treatments. Low shrubs, except for green-brier, will be left under the lines as long as they do not impede access to fallen wires. They have value as food and cover for wildlife, and there is evidence that tree seedlings do not readily become established in a dense shrub layer. Beyond the wires toward the forest, shrubs and scattered low trees such as witch hazel and flowering dogwood will be maintained. In the adjacent woodland along the rights-of-way, those trees which are sufficiently close to fall into the lines will be treated before they attain a height higher than the wires. Numerous plots have already been sprayed using selective basal bark and commercial water-born techniques. It is anticipated that this demonstration area will eventually exhibit results which will be of value to all those interested in power easement maintenance. Here it will be possible to observe the effectiveness of different techniques in manipulating the vegetation. In addition, various cover types can be evaluated from the standpoint of right-of-way maintenance as well as for maximum stability and conservation values.

The Arboretum Association

The Arboretum Association is the organization responsible for the Arboretum and its welfare. Arboretum maintenance and development costs are met in part by funds from the College and in part by the Arboretum Association. Association membership comprises organizations and individuals interested in the Arboretum and its conservation program, who give evidence of this interest by joining the Association.

Connecticut College is a private institution without state support. It is therefore necessary for a large part of the cost of development of the Arboretum to come from its friends.

Garden clubs and other civic-minded organization members of the Association may secure "tree dividends" (gifts of young trees and shrubs for civic plantings), and all members may use the Arboretum and its facilities, including Buck Lodge, receive its bulletins, and share in creating landscapes of the future.

Individual Memberships

Any interested person may become a member upon payment of an annual fee of \$5. The *Bulletin* will be sent to members without cost. Individuals may become sustaining members upon payment of \$10 yearly.

Organization Memberships

Civic- and state-minded organizations may become annual members upon payment of \$10 yearly; sustaining members, \$25 yearly; and supporting members, \$100 yearly.

Checks should be made payable to the Connecticut Arboretum and mailed to Richard H. Goodwin, Director, at Connecticut College.

The Advisory Committee

The Advisory Committee of the Association is the policy-determining body. It includes representatives from the Federated Garden Clubs of Connecticut and other persons throughout the state who are leaders in conservation. Its present membership is as follows:

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