

PROCEEDINGS OF THE THIRTEENTH MEETING  
HOLLY SOCIETY OF AMERICA  
RUTGERS UNIVERSITY  
New Brunswick, New Jersey  
November 12, 13, 1953

Awards to three of its members constituted one of the many highlights of the Annual Fall Meeting of the Holly Society of America at the New Jersey Agriculture Research Station, Rutgers University, New Brunswick, N.H. Here, nearly one hundred members from Maryland, Delaware, Connecticut, New Jersey, Indiana, Pennsylvania, Massachusetts, West Virginia, New York, Tennessee, Florida and North Carolina participated in the activities planned for their two-day affair.

On Thursday afternoon, November 12, Professor Robert B. Clark, Department of Ornamental Horticulture, Rutgers University, began the meetings with a tour to Holly Hill, well-known estate of Judge and Mrs. Thomas Brown, at Locust, New Jersey. Judge Brown explained that some thirty-six years ago the estate was virtually a wilderness. By patience, hard work and planning, the transformation, as all could see, was miraculous. Featured plants throughout the grounds were hundreds of native American hollies, transplanted from the surrounding wooded areas. Some of the trees were estimated to be 175 years old.

A leisurely hour was spent about the estate viewing and studying the many variations which exist in great numbers among the hollies. The prospect from the roof of the Brown's three-story mansion was breath-taking. Of unusual interest to all was the desk made entirely from the wood of holly salvaged from trees damaged by storms at the holly forest on Sandy Hook, New Jersey. Of special attention, however, was the Judge Brown Holly. This is an American selection made by Dr. Charles H. Connors, vice-president of the society, and a member of Rutgers University's Department of Ornamental Horticulture. The Judge Brown holly is noted for its symmetry, its brilliant red fruits and bright glossy foliage. Numerous pictures were taken by the members of this handsome tree.

Thursday evening the society assembled in the informal atmosphere of the Log Cabin Lodge for a chicken dinner. With cheery fires blazing in two gigantic fireplaces, the members dined, visited, made new friends and renewed acquaintances in a most leisurely and relaxing fashion.

Christmas Decorations Demonstration

Following dinner, Harry Wm. Dengler, Extension Forester, University of Maryland Agricultural Extension Service, College Park, Maryland and retiring secretary-treasurer of the Society, gave a two-hour demonstration on making Christmas decorations. Dengler, who considers himself strictly an amateur, has taught thousands of Maryland homemakers the principles of making attractive yet inexpensive Yuletide decorations. He joshingly remarked that nurserymen were raising so many holly plants that someone had to show people how they can use their holly at Christmas time.

A family favorite was a youngster's toy wheelbarrow placed on sprigs of holly for a table centerpiece. Stand a candle in the center and pile it up with pine cones. Add Christmas balls and artificial berries for color. A doll's crib on a sleigh is equally effective. Paste on glittered or silvered cut-out letters spelling "NOEL" for an added touch. Vary the contents during the holidays, Dengler recommended. Fill it entirely or in combination with Christmas balls, fruits, candy and nuts, or cellophane-wrapped popcorn balls for the youngsters.

Old vinegar jugs or large pickle jars take on glamour when coated with silver or aluminum paint. Paste on a red NOEL and tie a bow to the neck. Use this, the secretary showed, as a vase for whatever holiday greenery or flowers might be available.

A dust pan makes an unusual base for a clever holiday arrangement. Punch a small hole at each end of the top; thread with wire or a ribbon for hanging purposes. Wad the lip tightly with newspapers and place branches of greenery. Fasten a short wire through the two holes and across the front of the branches to hold them securely in place. Cover the pan with a strip of foil, add a big bow to the handle and hang it almost anywhere. Add balls, cones, or berries, if you so desire.

A large, empty, fruit juice can with a short piece of pipe stem cleaner to simulate a wick makes a beauty of a candle when painted with two blocks of melted household paraffin. This looks most dramatic when bedded in sprigs of evergreens as a table center-piece or for display on the fireplace mantle.

Tin cans can be cut with ordinary scissors into intriguing Christmas Trees of varying sizes. The lids, by fastening candles to them with florists' clay and covering with foil, make decorative candle holders.

Candleboards are a decorative must for all seasons of the year. Get your candles first before boring any holes; this way you'll be sure to have them the exact size. An ordinary cake pan, however, makes an acceptable substitute. Wrap the pan with foil, fasten in candles with florists' clay and surround these with balls, cones, greens, or flowers for effective centerpieces.

Old coat hangers serve well for wreath frames; merely bend them into rough circles and wire on greens and trimmings. After a little practice you'll be surprised at what you can make, Dengler stated.

Two coat hangers, bent into circles and fastened top and bottom at right angles to one another, make the basis for an endless variety of old-fashioned "Kissing Rings", hang mistletoe, clusters of colorful berries, cones, bells, or balls inside the sphere. Add touches of greenery and a bright, gay bow for extra color.

For inexpensive bells, cover funnels with aluminum foil. Use foil-covered measuring spoons for clappers. A nice cluster of bells can be made from various sized funnels with graduated measuring spoons. A kitchen grater and a large wooden spoon, both foil covered, make a simulated cow bell.

The speaker concluded his demonstration with the remarks that you'll be amazed at what you can find around the house that will make inexpensive and attractive Christmas decorations. Get your children in on the act, wear your old clothes, don't strive for perfection, and to have an ample supply of holly for yourself and friends, plant a few to grow about your own home. That is, he admonished, if you have neglected to already to do so.

### Business Meeting

The society's president, Mr. C. R. Wolf, President, New Jersey Silica Sand Company, Millville, New Jersey, called the 13th meeting to order at nine-thirty, Friday morning, November 13th 1953. He extended greetings to all and remarked that it is a never ceasing delight to him to see the interest taken in society affairs by the members. He expressed his pride in the growth of the society and its accomplishments. This, he said, is the result of the fine cooperation of all the society's members, and the work of the various committees.

We all should feel proud of the fact, Mr. Wolf said, that member Wilfrid Wheeler, Falmouth, Massachusetts, was recently honored by a citation from the Garden Club Federation of Massachusetts. Mr. Wheeler was formerly Commissionery of the Department of agriculture for the state of Massachusetts and has long been interested in protecting and promoting the use of holly in the New England area. The garden club award resulted from this work and from Mr. Wheeler's generosity in sharing his holly knowledge to all.

C O P Y

McLEAN AND KOEHLER  
Certified Public Accountants

William H. McLean, Jr.  
Frederick W. Koehler

32 South Street  
Baltimore 2, Maryland

November 3, 1953

Holly Society of America

Gentlemen:

We have examined the records of your organization and present here-  
with a Statement of Cash Receipts and Disbursements for the period of  
from June 12, 1952 to October 17, 1953.

In our examination we reconciled your Checking Account, but did  
not confirm same with the depository. We examined paid vouchers at our  
disposal and the allocation of the entry. We did not confirm the dues  
status of your members in any way. We suggest that a system of  
accounting be established to show the status of each individual member's  
account.

Respectfully submitted,

McLean and Koehler

Signed W. H. McLean, Jr.

M/rk

C O P Y

HOLLY SOCIETY OF AMERICA

Statement of Cash Receipts and Expenditures

For the Period June 12, 1952 to October 17, 1953

Balance per Check Book June 12, 1952					\$ 832.04
<u>Plus Receipts:</u>					
Membership and Dues				\$1,455.00	
Sale of Publications & Proceedings				17.25	
Sale of Christmas Cards				<u>4.38</u>	1,476.63
Total to be accounted for					2,308.67
<u>Less Expenditures:</u>					
Post Cards, Stamps & Envelopes				\$ 257.08	
Office Supplies & Expense				113.90	
Printing & Mimeographing				52.90	
Spring Meeting Expenses				111.21	
" " Box Lunches-Paid		\$ 85.00			
		-Collected	58.00		27.00
" " Bus Trip		-Paid	68.32		
		--Collected	43.00		25.32
" " Banquet		-Paid	154.00		
		-Collected	<u>142.00</u>		12.00
Winter Meeting Expenses				55.79	
Fall 1952 Meeting Expenses				14.00	
Chapel Hill, N.C. Meeting Expenses				22.20	
Honoraria				337.87	
Miscellaneous Expenses				23.65	
Newsletter				34.20	
American Nurseryman Magazine (10 copies)				2.00	
Dues-American Horticultural Council				10.00	
-American Horticultural Society				5.00	
<u>Special Account "Humes Holly Book"</u>					
Disbursements		\$ 476.16			
Receipts		<u>465.82</u>		10.34	
Shipping Holly Trees to Japan-Paid		68.02			
		-Collected	<u>19.50</u>	48.52	\$ <u>1,162.98</u>
Balance per check book October 17, 1953					\$ <u><u>1,145.69</u></u>

### Good Will Hollies

Considerable excitement was aroused by the secretary's announcement of what happened to the three small hollies sent to Auckland, New Zealand, during the spring 1950 meeting at the University of Maryland. These were to be planted about the spacious grounds of New Zealand's two million dollar War Museum Building as trees representative of countries of New Zealand's allies in World War II. Because the trees were very small and because of New Zealand's reversed climate, the hollies had to be given special greenhouse and nursery care prior to planting out permanently.

This fall the three hollies were judged sturdy enough for this purpose. On October 14, Vice-President and Mrs. Richard Nixon, on their world-wide good will tour along with Auckland's mayor, Sir John Allum, planted the trees in their permanent positions. Excellent photographs and a newspaper clipping of the tree planting ceremony were sent to Mr. Dengler and these, along with a complete file on this subject, are in the hands of a feature writer for the District of Columbia's Washington Star. A Sunday edition story is planned by this newspaper; timed for publication about the time the Nixon's return to Washington in mid December.

### Wolf Re-elected President

The nominating committee of holly nurserymen Edgar S. Diehl, and Gustaf Malmborg, both of Manheim, Pennsylvania, and the society's historian, Maynard M. Fulton, Harrisburg, Pennsylvania, recommended that Mr. C.R. Wolf, and Dr. Charles H. Connors, be re-elected president and vice-president respectively, and that the former secretary-treasurer, Charles A. Young, Jr., Park Forester, Baltimore, Maryland be re-instated to the position he had to vacate when recalled to active service by the Army during the Korean War. The members instructed that an unanimous vote be cast to that end.

### Dr. Hume Honored

President Wolf's first act as an officer during his new two-year term was to introduce Dr. H. Harold Hume, dean emeritus, College of Agriculture, University of Florida, Gainesville, Florida. Dr. Hume, he related, is the well known author of several books and a respected writer on many horticulture subjects. He is the recipient of many medals and awards for his works in the advancement of American Horticulture. It, therefore, was a difficult task to determine how best the society could honor him for his new book, The Hollies. He had, he said, appointed a committee composed of Dr. John C. Wister, the Arthur Hoyt Scott Horticulture Foundation, Swarthmore College, Swarthmore, Pennsylvania, holly nurseryman, H. Gleason Mattoon, Narbeth, Pennsylvania, and the society's artist, Forrest Crooks, Doylestown, Pennsylvania, to select an appropriate award. After a thorough study, Mr. Crooks, designed and prepared a medallion of leaded, stained, glass which Mr. Wolf presented to Dr. Hume on behalf of the society. In his acceptance remarks, Dr. Hume stated that over the years he has learned many interesting things about the hollies and that his only wish has been to share this knowledge with everyone. Hume's modest response produced a rousing applause from the society.

The society's artist Forrest Crooks, Doylestown, Pennsylvania, reported briefly on the progress of the eight 4 by 9 foot holly murals he is painting for the 60 by 30 foot multiple-purpose Holly Room in the Y.M.C.A. Building, Millville, New Jersey. Each of the eight murals, Crooks related depicts an important

historical aspect in the culture of holly throughout the ages. The building and murals will be ready for the society's 1954 fall meeting at Millville.

On display was a full-sized charcoal drawing of the first panel. This depicted a forest scene of many millions of years ago in western North America in the days when *Ilex Oregona* flourished there. A smaller painting in color gave the members an idea of how these murals will appear when completed. Others in Crooks' series include the uses of holly in superstitions, Roman weddings, medicines, traditions, beverages, wood utilization, and landscaping.

Dr. Betty Thomas, Department of Botany, Connecticut College for women, New London, Connecticut, was introduced to the group. President Wolf said that Dr. Thomas has just completed a bibliographical digest of important published articles on the hollies.

#### Holly Test Gardens

Professor Robert B. Clark reported on activities of the arboretum committee. Dr. Henry Skinner of the National Arboretum, Dr. George Avery, Brooklyn Botanic Garden, and Dr. John Wister of Swarthmore College have been made members of his committee, Professor Clark said. The United States National Arboretum, the Missouri Botanic Gardens, and Swarthmore College, among others, are now approved testing grounds for selections and new species of hollies. They will receive cuttings or plants for this purpose as they become available from the principal test plot at Rutgers University.

#### Holly Check List

Dr. John C. Wister, Director, the Arthur Hoyt Scott Horticultural Foundation, Swarthmore College, Swarthmore, Pennsylvania reported on bulletin 6, published by the Holly Society of America, November 13, 1953. He stated that because of the present great interest in the holly group many people have complained about the lack of reliable information on the holly names, what these hollies were, and where they could be obtained. The check list was prepared to help remedy this situation, he related.

The fifty-six page bulletin brings together for the first time a complete list of all the hollies, whether of wild or garden origin, introduction of these hollies, and about the persons responsible for their discovery, description, selection, propagation and introduction.

The bulletin contains a bibliography and is divided into five parts. Section one is devoted to a list of botanical authors of names, of species, and botanical varieties; a list of discoverers and those who have selected, named and/or introduced varieties and clones; list of nurseries specializing in holly list of arboreta and public or semi-public gardens designated as official society test gardens.

Section two contains an alphabetical list of species, hybrids, botanical and horticultural varieties, forms, and clones. This includes all the holly species and gives brief but pertinent information as to the plant's introducer and its origin, where described, and what nurseries have the plants for sale. The third portion contains six separate reference lists of the varieties, clones, and hybrids of the American, English, Chinese, Japanese, other evergreen hollies, and the deciduous hollies.

A list of unaccepted, unrecognized, or doubtful holly names is in part four. While the fifth section contains a supplementary list of holly species and varieties apparently not in cultivation in America at the present time.

Dr. Wister stated that his report is purely a preliminary one and that he hopes it will be continued and constantly corrected. He paid tribute to Professor Robert B. Clark and Dr. Charles H. Connors, for their work on his committee in preparing this bulletin.

President Wolf commended Dr. Wister and his committee most highly for their outstanding and painstaking piece of work. It is a much needed addition to knowledge concerning the hollies. Because of the cost in printing such a bulletin, general distribution to society members is not planned. Copies may be secured at their printing cost of one dollar each from the Secretary, Charles A. Young, Jr., Bergner Mansion, Gwynns Falls Park, Baltimore 16, Maryland. Dr. Wister and his committee were given a rising vote of appreciation by the members.

Mrs. John McNair of Baltimore, Maryland reported on Federated Garden Clubs of Maryland's twenty-nine year old Christmas greens show in the Baltimore Museum of Art. For the past four years, this show has had a holly class, she related. At first the exhibitors were somewhat confused, as might be expected, but considerable progress has been made and interest is now growing. The holly society has been asked to put on an educational display. Last year 7,000 persons visited the show.

H. Gleason Mattoon, Wilmat Holly Company, Narbeth, Pennsylvania, presented a report as the society's official representative at the November meeting of the American Horticultural Council in Philadelphia. This group is doing an excellent job on a very limited budget and Mr. Mattoon recommended that the holly society continue its support to the council.

At this point in the program Dr. Ordway Starnes, Assistant to the Director of the New Jersey Agriculture Experiment Station, was introduced to the group. He extended cordial greetings to the society and invited the members to make a thorough visit to the experiment station, the agricultural college, and Rutgers University.

There are many beautiful hollies in New Jersey, the Doctor said, and the holly nursery business here is becoming very important. The station is responsible for much of the information disseminated by the society and evidence of it is showing everywhere.

Dr. Starnes mentioned some of the important work being done at the New Jersey station. He cited as contributions the work on artificial breeding; the institute of microbiology and the development of streptomycin. The doctor commented on the institute of microbiology and said that they hope it will eventually become the world's storehouse for information on this subject.

Dr. Clyde C. Hamilton, Department of Entomology, Rutgers University and Chairman of the society's insect committee presented the following report.

## Report of Insect Committee on Holly Pests

Several interesting developments have occurred since my report at the Spring meeting held at College Park, Maryland on April 23 and 24. It was stated at that meeting that a 2 per cent superior type dormant oil spray was applied the last week in March and the first week in April to approximately 2500 trees in a holly orchard. This spray was applied with a mist blower using 1 1/8 gallons of spray per tree. The spray was applied for the control of a scale insect belonging to the genus Aspidiotus. There is considerable confusion regarding the species which has yet not been determined.

An examination of two shoots, each about 36 inches long, collected April 22 and examined April 25 showed 461 dead scales and no live ones. These scales were on one and two year old wood. Later events, however, indicated the control was not so good. Possibly some of the live female scales on the older and encrusted twigs were not killed. At least scales appeared during the late spring and early summer on this year's growth.

Tests were made during August to determine the phytotoxicity of oil sprays to holly foliage and the kill of the scale insects present at that time.

Nursery Volck, 1 per cent strength, was applied to five rows of trees August 24. Twigs collected August 26 showed 18 per cent dead scales, 11 per cent live scales with about 67 per cent of the scales destroyed by a predator.

Pratt's Scalecide and Pratt's Superior Type dormant oil spray at 1% strength plus 0.5 per cent Pratt's DX Insect Spray (a pyrethrum-rotenone summer oil spray) and Pratt's Scalecide at 1% strength plus 0.125% chlordane and Pratt's Summer Oil Spray 1% plus Pratt's DX Insect Spray 0.5% were applied to scale infested trees August 25. Examinations made August 28 showed 42, 34, 41 and 42 percent dead scales with the remaining scales in all 4 lots having been destroyed by ladybird beetles. No spray injury occurred to the foliage from any of the sprays.

Further tests on which Pratt's Scalecide and Pratt's Summer Spray oil applied at 2 and 4 per cent oil, without and with Pratt's DX Insect Spray 0.5 per cent strength and with chlordane at 0.125 per cent strength were applied to male holly trees August 28, showed no damage to the foliage from these sprays. These trees were not infested with the scale.

Larvae, pupae and adults of a ladybird beetle, Chilocorus bivulnerus Mulsant, were noticed about the middle of August feeding upon the Aspidiotus scale on the holly trees. When the trees were examined on August 26 all stages, except the egg stage, were very abundant. Thousands of the beetles and larvae were present on each of the scale infested trees. Examinations made August 25 and August 28 showed 67 and 60 per cent respectively of the scales had been destroyed by the predators.

Examinations made from twigs collected October 16 showed three live scales out of more than 6400 scales examined on growth made during the spring and summer of 1953.

The control of the Aspidiotus scale by the two-stabbed ladybird beetle was remarkable. It is possible that the control may have been made possible by the fact that only a very light spray of DDT had been applied for leaf miner control in May and no sprays had been applied for spider mite control until in early September. It is known that DDT sprays and phosphate sprays are very toxic to

ladybird beetles, Dr. Hamilton surmised, and it is possible that these sprays in previous years may have prevented the ladybird beetles from developing in sufficient numbers to be an important factor in destroying the scales.

The application of the 2 per cent Superior Type dormant oil spray in late March and early April had a very beneficial effect in controlling the southern red mite. No live mites were observed on the oil sprayed trees until some time in August and sprays for this pest were not applied until early September. A spray consisting of 1 gallon of a 25 per cent Aramite emulsion to 100 gallons of water was applied with a mist blower in early September and again in early October. Meanwhile, young nursery plants which had not received the dormant oil spray had three Aramite sprays up through July and two more in September and October. It would seem that we should give more attention to dormant oil sprays and possibly summer oil sprays. No injury occurred even where 4 per cent Pratt's Scalecide and 4 per cent Superior Type dormant oil sprays were applied in late August, reported.

#### An Ambrosia Beetle Attacking American Holly

The beetles are black and about 1/16 of an inch long. They winter over as adults and appear in April, starting to bore into twigs as small as 1/8 of an inch. They may feed in larger twigs, limbs or the trunk of the trees. Their presence is indicated by fine white sawdust-like borings pushed out through small holes about 1/16 inch in diameter. The beetles make tunnels in the wood which may be an inch or more in length. They inoculate these tunnels with spores of a fungus called ambrosia. Both the beetles and the larvae feed upon this fungus. When the fungus dries up it causes a bluish stain in the wood. All stages may be found from June to September and there are at least two principal broods, Dr. Hamilton said.

The insects may sometimes be quite abundant, 15 to 20 or more frequently being found in a 6 inch portion of a stem 1/2 inch in diameter. Infested limbs die rather suddenly, the leaves turning brown and drying.

This ambrosia beetle is a native insect of Japan, Formosa, and nearby countries. It was first found in the United States infesting the stems of greenhouse grapes in 1932. It has been reared in the United States from elm, oak, red maple, beech, and hickory. This is its first record from American holly. It has also been observed to attack poison ivy. It is more likely to attack subnormal trees, fallen or broken limbs, freshly cut logs, etc. On holly it was found attacking nursery holly plants 2 1/2 to 4 feet tall and the branches of limbs up to 3/4 of an inch in diameter on apparently healthy growing holly trees in a holly orchard.

No practical control measures are available other than to cut out and burn infested limbs or trees as they show up in May or early June. This ambrosia beetle seems to be somewhat generally distributed in several of the eastern states and may not become much of a pest unless the growth conditions of the trees are favorable for its development, Dr. Hamilton felt.

#### Membership Committee Report

Tom H. B. Boothe, Glen Ridge, New Jersey, chairman of the membership committee, stated that the society now has nearly 450 members with seventy-five additional persons in arrears for the current year. His committee is continuing its letter campaign to nurserymen and others who directly or indirectly have an interest in

conserving, propagating, growing, showing or selling hollies. These are not "canned" or letters of a solicitous type; we merely tell them in a brief way of the work we are doing in this important field and invite them to become members if they so desire. Ten thousand holly society seals have been sold since their first printing in December 1951. The committee would welcome names of prospective members, concluded Mr. Boothe.

### Harvesting Christmas Holly

About 17,000 pounds of Christmas gift holly is now harvested yearly from the orchards of the New Jersey Silica Sand Company, at Millville, N.J., Daniel Fenton, the firm's holly specialist announced. This is attractively packed into two thousand boxes, 22 by 16 by eight inches in size. Each box holds fifteen to twenty sprays of holly and weighs from five to six pounds per box.

While the florists like their holly to be of uniform lengths we find that our customers prefer mixed sizes, Fenton explained. We hope eventually to develop a pack consisting mainly of American holly but with a branch of yellow-berried native holly, a branch of English holly, and perhaps a smooth-leaved American holly for added interest. Each of our gift boxes contains a wax dipped and specially selected sprig for use as a corsage. This is placed in a special corsage bag, he added. Also included is a little gift booklet written in a rather personalized style which tells the background, folklove, and how to use holly in order to keep it fresh through out the holiday season.

The holly is not treated with preservatives like that on the west coast since our boxes reach their destination a few days after it is packed. Our cutting period starts about December 8 or 9; only experienced cutters are used for this purpose. The holly is placed in large orchard crates which fit snugly into a pick-up truck. It takes us about a week to cut enough holly to fill the needs. Our trees are not over-pruned because they must be left with an attractive appearance since we have so many visitors to our orchards, Mr. Fenton mentioned.

The crates are hauled to the packing shed where thirty to forty workers to fill the boxes. Two sheets of heavy waxed papers are used as liners. One is red and the other white; these are criss-crossed and this enhances the boxes appearance. It takes about a day and a half to do the packing.

The holly is packed dry to prevent spoilage and also to pack it tight to prevent the berries from shattering off. Clothes pins hold the wax paper in place during the packing. The post office moves a special rail road car onto the company siding to help expedite the shipments. In the spirit of Christmas extra boxes of holly are placed in the car for the railroad employees. Mr. Fenton concluded his talk with a demonstration of holly packaging using the exact materials and methods developed at the New Jersey Silica Sand Company plant.

The morning's session ended with the presentation of a handsome watch to the retiring secretary-treasurer, Harry Wm. Dengler, Extension Forester, University of Maryland, Agriculture Extension Service, College Park, Maryland. In presenting the award on behalf of the holly society, Mr. Fenton stated that Mr. Dengler had served as chairman of the committee which helped to form the society and had served as the society's first vice-president. The watch was engraved: Harry Wm. Dengler, for outstanding service to the Holly Society of American, 1953.

A pleasant and informal box luncheon concluded the morning program.

### Microclimate important

Dr. E. R. Biel, Rutgers University, opened the afternoon session with a scientific discussion of climate and plants. In his talk he pointed out the fact that our American holly is a tropical plant adjusted to more temperate climates.

No where in the world is to be found a climate like that of New Jersey, he said. Here we are completely open to winds of the north and the south; we have no protective mountains to hamper the great air movements such as the cold winds which move during November to May southward from Canada. In New Jersey one may experience every kind of weather phenomenon possible with the exception of dust storms, Dr. Biel reported.

Frosts, which are most important to nurserymen and farmers alike, are of two general types; radiation and transportation. Radiation frosts are the least important of the two since they are more readily averted. These result from the radiation of heat from the earth and the consequent coldness resulting. Transportation frosts are those resulting from the rapid movement of cold air masses. In radiation frost the coldness exists generally only close to the ground surface; an inverted warmer layer of air may exist twenty to thirty feet above the frosted ground. Helicopters hovering over such areas are useful in mixing these layers and warming up the vegetation at the ground level. In transportation frosts the air is uniformly cold of greater mass and helicopters and other air mixing machines are of little value.

In California 95% of all frosts are of the radiation type. In New Jersey transportation frosts are of a much higher percentage; here, infrared heaters of the aluminum reflector type are at present the best protection against these frosts. Frosts always come in New Jersey after the growing season has started; as many as from three to twenty each year, Dr. Biel warned. Helicopters must be used continuously to thoroughly mix up the air; and the practice must continue for prolonged periods to insure a protective atmosphere.

The best protection against frost is the proper selection of the site; nurserymen should avoid frost pockets at all costs. Make a very careful study of this Dr. Biel advised, for there is a very great variation in temperatures in fairly close areas. In the same general area at the very same time temperature differences as great as 50 degrees may exist.

During the daytime it might be 10 degrees warmer two inches off the ground than at head level. At night this might reverse to be 16 degrees colder two inches off the ground than at head height. In New Jersey plants at ground level often experience a climate similar to Georgia in the daytime and that of New England at night. While this study of microclimate is in its infancy its importance to the farmer and nurseryman is becoming increasingly evident.

We should remember, Dr. Biel stated, that winds are great "mixers up" and this is important since we can increase or decrease the wind and thus influence the microclimate. By planting trees strategically we can channel, funnel, force or pinch the winds where they can serve as to a useful advantage. We can reverse this cutting trees if this seems the wise course to do.

Trees and forests have considerable influence on local weather conditions. Tree canopies act as insulators. Fog drip and the hidden precipitation in our forests is more important than commonly supposed. Groves of trees and windbreaks help slow down the movement of transportation frosts. They will not always stop

them Dr. Biel said, but they do help to lesson the coldness and the length of the frost.

#### Hollies As ornamentals

In the field of landscape design there is a big gap between evergreen plants from six feet up to the forest sized trees. Here, the American holly fits in very nicely, said Professor R.P. Korbobo, extension specialist of Rutgers University's Department of Ornamental Horticulture.

As a clipped hedge the American holly is superb. The natural form of holly makes it ideal for this purpose. The availability now of plants of one selection rather than mismatched seedlings enchances the use of holly for hedges.

Because of its many values and attractive powers it makes an excellent specimen tree. Behind a screen or a promontory, a handsome holly is a welcome surprise to the curious garden wanderer. Equally delightful is an unhidden holly specimen as a lawn tree backed up with a shrub border. Likewise, the American holly is excellent for breaking-up big uninteresting areas. As a terminal feature in the garden instead of a bench, bird bath or pool, an American holly is a most acceptable substitute.

In developing landscape plans, Professor Korbobo said, the critical places are where vertical and horizontal lines meet. Here the shrubby hollies fit in nicely, The hollies look natural and free flowing. There just seems to be something about them that makes you resist the desire to shear them.

The hollies are nice for framing buildings and factories. Use them close up or at driveway entrances. The American hollies are excellent for windbreaks and screens. Here, they can serve a dual purpose by providing cut sprays and wreaths for Christmas holidays. Likewise, they can be used for snowfences or for naturalizing on hillsides or large estates.

Professor Korbobo recommended that the hollies be used also for arbors and espaliers.

#### Embryo Seed Culture

Dr. Peter K. Nelson, Brooklyn Botanic Garden, Brooklyn, New York, presented a brief progress report on his experiments with the embryo culture of holly seeds. Because holly seeds are slow to germinate, requiring at least two and usually three years, this delay is a nuisance to the holly hybridizer.

To speed up this progress the embryo, or the baby plant, is extracted from the seed and grown on agar cultures in sterilized test tubes. Dr. Nelson explained the delicate technics and problems involved. He exhibited small plants grown from extracted holly seed embryos and compared them with seedlings grown in the normal manner. The seedlings from the extracted embryos were larger than normal seedlings even though they were a full year younger.

#### Mr. and Mrs. Wolf Honored

Just prior to the close of the Friday program, the retiring secretary arose and remarked that events on today's meeting were somewhat reminiscent of customs observed at Christmas in ancient Rome. Here, it was considered of the highest

honor and a mark of great esteem and affection for friends to exchange wreaths of colorful holly, a practice which still continues to this day. Earlier, he said, several members of our society were similarly honored. Now, it befalls my lot and it is great pleasure to honor two more members of our society. To Mrs. C. R. Wolf, and to our president Mr. Wolf, without whose joint cheerful and generous assistance the society, as we know it today, could never have accomplished the results we have so nicely and proudly achieved since our founding in 1947. Where-  
up, on behalf of the appreciation of the Holly Society, Mr. Dengler presented to Mr. and Mrs. Wolf a most handsome and intricate Christmas Creche set of twenty nativity figures. These were all hand carved from holly wood by members of the John C. Campbell, Folk School, Brasstown, N.C.

The fall 1953 society meeting closed with explanations by Professor Robert Clark of the many experiments now underway on holly by the New Jersey Agriculture Research Station. Professor Clark then conducted the group throughout the station's experimental orchards. Here, various fertilizer experiments were observed along with comparison and evaluation studies of the largest number of holly selections in the United States.