

Gen. Reference # 589

SENATE BILL No. 184

AN ACT ADOPTING THE AMERICAN HOLLY AS THE STATE
TREE.

*Be it enacted by the Senate and House of Representatives of
the State of Delaware in General Assembly met:*

Section 1. The American holly (*Ilex opaca*, Aiton) is hereby
adopted as the State Tree.

Approved May 1, 1939.

P 29-31

STATE OF DELAWARE

Annual Report

of the

State Forester

to the

State Forestry Commission



DELAWARE STATE FORESTER
DEPARTMENT OF AGRICULTURE
FORESTRY SECTION, DRAWER D
DOVER, DELAWARE 19901

For the Year

July 1, 1936 to June 30, 1937

Bed #2 and also beds #3 and 4 were reworked 10 days before seeding and treated with the usual formaldehyde disinfecting solution (3 qts. 40% formalin in 25 qts. of water).

The three beds were longitudinally divided in the center, one-half of beds #2 and 3 being seeded in white pine, the other half in red pine. Bed #4 was likewise divided and seeded half to loblolly pine and half to norway spruce.

The usual methods of seeding, covering, and mulching were used on these beds and as soon as germination was complete each bed was, (by imbedding lath into the soil), subdivided into 15, 2 ft. x 4 ft. plots with a 1 ft. 3 in. x 4 ft. check area between each experimental plot.

Water solutions of ammonium sulphate varying from $3\frac{3}{4}$ oz. to $22\frac{1}{2}$ oz. per 200 sq. ft. were applied to six sections of bed #3 and #4. Six other sections of these beds were treated with 85% phosphoric acid in water solution in concentrates varying from 100 to 600 cubic centimeters. The three other experimental plots of beds #3 and 4 were treated with mixtures of phosphoric acid and ammonium sulphate in various strengths. Experimental plots in bed #2 were treated with the above materials but because the sawdust and granulated peat, having been applied to opposite ends of the beds the layout of plots, would not permit a wide variation in the quantities of materials used. Applications of the solutions as outlined above were started June 25, 1937, and will be continued at intervals of 4 weeks through the growing seasons for the next 2 or 3 years.

At the present time the areas treated with rotted sawdust and peat moss are poorer in appearance than other plots; the sawdust section of bed #2 being so poor as to be almost a failure.

Christmas Greens Industry Survey:

The Christmas green industry in Delaware has long been recognized as an important one, especially in Sussex County. However, it was not until 1926 that any official effort was made to ascertain the volume or value of the products comprising this trade. The survey made at that time showed it to be valued in the neighborhood of \$400,000.00. Since the industry involves a forest product of nation wide use it has received the attention of

the Department in efforts directed toward (1) ascertaining the quantity and value, (2) conserving the supply by advocating wise harvesting practices, (3) advertising the product as Delaware's own. As in previous years the first feature of this program consisted of making a survey covering the 1936 shipments. Questionnaires requesting information on the quantity, value and kinds of materials shipped were sent to all known dealers and shippers within the State. As a check against the information received by the above questionnaire and to permit a careful allowance for materials shipped by the many small dealers or individuals from whom no reports were received, a survey to determine the number of holly shipping cases sold for use in Delaware by the various case makers, was also made.

Based on an analysis of the information received from the various sources the following summary of production is made:

	<i>Wooden Cases</i>	<i>Cartons</i>
204,000 doz. holly wreaths	12,100	9,625
Miscellaneous Christmas Decorations....	250	4,000
Spray holly	3,375	
	<hr/>	<hr/>
	15,725	13,625
Estimated value of business to State.....	\$220,000	
Estimated number of persons given employment.....	8,500	

The volume of business in holly wreaths and miscellaneous material was about 15% greater in 1936 than in the preceding year and the price was somewhat higher. Because of the relatively small crop of berries last year the amount of spray holly shipped was much smaller than normal. The curtailment in the volume of trade in this type of decorative material naturally prevented much of the "butchering" or even the cutting down of trees to harvest the branches and will react to the definite advantage of the industry in succeeding years. It is regretted that citizens of the State who traffic in holly do not recognize it as the green forest goose that lays the golden Christmas egg, and so modify their holly harvesting methods that the trees are not seriously injured. Observation of simple pruning rules will enable the tree to make a gradually increased annual contribution of sprays rather than a one year slaughter.

Comparatively speaking the income to the people of the State derived from the Christmas greens industry is not large, yet coming at a time when other work is slack, it becomes very important to many families who otherwise would not receive any income at this season of the year.

Last year the Garden Club of Wilmington, through its State Conservation Chairman, Mrs. John P. Nields, launched a drive to encourage the planting of English holly trees and conserve the natural supply through the adoption of wise harvesting methods. The Department is sympathetic to any movement that encourages the practice of wise harvesting methods for any forest product and cooperates with the committee to this end.

FOREST FIRE CONTROL

Forest fire control is the most important responsibility assigned to the Department and one which it continually strives to improve and intensify toward that perfection called "adequate protection." New methods, new implements and improved practices designed to aid in solving the fire control problem are being tried. Some are adaptable to Delaware conditions and finances; others are not. Among those appearing to merit earnest consideration in the Department's organization is radio. It has been adopted in most of the neighboring states as an aid to the tower and detection organization but it has not yet been so perfected that it is as dependable as the telephone. Nevertheless, it may not be many seasons before radio will be essentially a part of the system as other equipment in the towers now is, and definitely accounts for the original adoption of the beacon top cabin design as standard for all Delaware towers.

Fire records vary within the states, within regions of the country and from year to year. In order to provide a uniform basis for comparison, forest fire records throughout the United States are compiled by the calendar year and reported to the United States Forest Service for compilation of information of national importance. However, in order that the date recorded herein will correspond with the period of the report, fire records are carried up to July 1 of the year. (See appended tables.)

*Delaware - Valley
Industry*

STATE OF DELAWARE
ANNUAL REPORT
of the
STATE FORESTER
to the
STATE FORESTRY COMMISSION
For the
FISCAL YEAR 1933



DOVER, DELAWARE

DELAWARE STATE FORESTER
DEPARTMENT OF AGRICULTURE
FORESTRY SECTION, DRAWER D
DOVER, DELAWARE 19901

From time to time as other big trees are found or reported, they will be measured, catalogued, and photographed in order to complete the State's record.

It would seem that old trees deserve greater consideration by those interested in preserving old landmarks and things of historic significance. In the United States and in Delaware there are trees that in age and historical significance are as worthy of preservation and marking as many things that have been preserved and marked. Man-made objects of stone, brick and iron can be duplicated; historic ground can be dedicated and marked, but no amount of effort on the part of man can restore a tree to life once the spark of life has left it. More attention should be paid to the preservation of these old trees, that future generations may have some conception of the big trees that once were a part of Delaware's original forests.

Christmas Greens Survey:

The survey of the State's Christmas greens industry conducted in December and January 1932-33 showed that Delaware continues to lead other states in production of Christmas holly decorations. Returns from questionnaires sent to all known holly dealers in the State showed 6,200 cases containing 17 dozen wreaths per case were shipped out of the State, and that, in addition, approximately 2,000 cartons containing one to two dozen wreaths each were also shipped. Of the approximately 1,275,000 wreaths handled by Delaware dealers, approximately 90% were made in the State by Delaware people from locally grown holly. In addition to wreaths, there were approximately 500 cases of bulk holly and 300 cases of laurel roping, mistletoe, ground pine, boxwood wreaths, paper wreaths and dozens of other creations made both from artificial and natural products shipped as Delaware's contribution to the holiday trade.

From the survey, it is estimated that the industry during the past season was a \$250,000 one, providing employment to some 10,000 people for two months in the collection of sprays, manufacture of wreaths, the manufacture of shipping cases, packing, shipping and transportation of the articles of the trade.

*Delaware - Holly
Industry*

PROPERTY OF
W. GABEL
REPORT
OF
COMMISSION
FOR THE
CONSERVATION OF FORESTS
IN DELAWARE
TO THE
DELAWARE
GENERAL ASSEMBLY
OF
1927

DELAWARE STATE FORESTER
DEPARTMENT OF AGRICULTURE
FORESTRY SECTION, DRAWER D
DOVER, DELAWARE 19301

THE AMERICAN HOLLY

The American holly is not only one of our most beautiful trees but is very valuable commercially as well. It is named the American holly to distinguish it from the European holly, but in all countries where it is found and used, it is usually called the Christmas holly. However, not many people know that these branches and the wreaths made from them, are cut from a tree usually attaining a height of 15 to 30 feet and a diameter of 3 to 8 inches. Trees 50 feet in height and 3 feet in diameter are rather common in the southern part of its range, which extends from Maine to Texas.

The origin of the custom of using holly as a Christmas decoration, is not definitely known, but like most other Christmas customs, it probably had its origin with the ancient Druids. There is reference to its first name having been the Holy tree, and associated with the scriptural incident of the crown of thorns. Hence we have the holly wreaths—the first form in which it was used for decoration—made both in America and Europe from holly native to the country. Perhaps the most conspicuous ancient reference made to the holly speaks of the bright red berries which were supposed to have association with the drops of the blood of Christ which hung fast to the thorny crown and remained bright red for twelve days after the crucifixion. For this reason it is a custom in some remote parts of Europe, to remove all holly from the house before the twelfth day after Christmas.

It should be remembered that there are male and female holly trees and naturally, only the female bears the bright red berries. In the past few years, however; due to the fact that many berries drop off in shipment; artificial berries are being used. This allows the wreath makers to use branches from either tree and otherwise increases the available, merchantable supply.

The tree is found throughout the State on all soils but grows most abundant in the deep woods, swamps and moist depressions, in Sussex and the lower part of Kent Counties. Only in these two counties, is it found in commercial quantities.

A recent survey made of the State's holly industry, shows that wreaths and other holly products valued at approximately \$400,000 are annually shipped from the lower counties. About 7000 cases, comprising some 1,500,000 wreaths and in addition approximately 600 cases of loose sprays and branches, make up this shipment. Principally the poorer class of people gather the sprays and make up the wreaths which they sell on the open market at 5 to 2 cents each. This would indicate that the annual Christmas present, distributed to the hundreds of such people, is close to \$108,000.

The American public has learned to regard the holly wreath and sprays as an essential part of the Christmas decorations; it has ceased to be a luxury and is considered almost a necessity. Many holly collectors make the mistake of cutting the trees down, in order to obtain the branches. It is a well known fact that the holly is a very slow grower—its average height increment being less than 12 inches, annually. At this rate it requires two years for a tree to recover from a two foot spray cutting, which is the average length of sprays used in making wreaths. Careful methods of harvesting will but prolong the time when our holly trees will have become scarce. As the supply decreases prices will increase until a time is reached when it will be a paying industry to artificially propagate the tree. Many of the collectors in Sussex County are already beginning to feel the pinch of the waning supply yet they are not alarmed for it simply means an increase in the prices they can demand. However it must be remembered that Delaware's holly industry has much keen competition from States further south. If we deplete our natural supply before the natural supply of those States is gone, Delaware

will surely lose the trade, not to mention the aesthetic loss to all who enjoy the beauties of our woodlands.

The time is not far distant, in Delaware and in some of the States of the South, when holly farming will be carried on at a profit. Abandoned farms and fresh water swamps of Sussex County, now regarded as of little value may eventually produce financial returns bearing comparison with the finest agricultural lands in the State. Likewise, the farm woodlot will be used to grow this tree, for it is a well known fact that holly will grow in the densest shade and is not often found in the open.

*Delaware - Holly
Industry*

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bisulfide into the soil for a depth of 4 inches to 6 inches at the rate of 2 ounces per 64 square foot apparently did not kill the grubs and when the ounceage was increased, proved injurious to the trees.

Christmas Greens Industry Survey:

For a number of years the Department has been interested in the State's Christmas greens industry and has conducted investigations on the value, quantity and marketing of this special forest product. After the close of the shipping season in 1935, a standard questionnaire requesting information on the quantity, quality and variety of product manufactured was sent to all known dealers and shippers of such product in Delaware. In recognition of the fact that there are many individuals who manufacture, market and ship their own products independent of the larger distributors, a survey of shipping case manufacturers in the State and in Maryland near the State line was made as a check against the questionnaire returns.

Using the information obtained by the method above indicated and through the courtesy of dealers and manufacturers, estimates of the 1935 Christmas greens shipments from Delaware are made as follows:

	Standard Cases	Cartons
180,400 dozen holly wreaths	10,230	6,160
Miscellaneous Christmas decorations	100	2,600
Spray holly	6,000	
Totals	16,330	8,760
Estimated value — \$185,000.		

It is conceded that in comparison with income from other crops, the financial return to the people of the State, as a result of the Christmas greens industry, is not large. On the other hand, observing that the greater portion of the revenue from this forest product is paid to wreath makers and holly gatherers who otherwise would not receive an income at this season of the year; it becomes an exceedingly important industry and one well worthy of measures looking to conservation of the major raw product; namely, the native American holly tree.

Practically the entire crop is harvested, manufactured and shipped to points throughout the country during the last two or three weeks in

November and the first three weeks in December. Usually all members of a family are engaged in making the wreaths and to them, the money they receive for their work is paramount to their Christmas happiness.

Spray or box holly is the unwanted child of the industry in that the general practice is to butcher or even cut down holly trees in order to obtain the red berry bearing sprays. Naturally, such cutting makes serious inroads on the supply for wreath making, which, in the final analysis, is the source of the greater amount of stay-at-home revenue.

It, therefore, seems eminently fitting to recommend that the citizens of the State take a greater interest in the conservation of this replenishable natural resource; first, by the adoption of wise harvesting methods; secondly, by encouraging and protecting natural growth and third, by using the laws of the State which have as their purpose the prevention of vandalism and theft.

It is predicted that in not too distant a future, forests of native and non-native holly trees will be planted for the sole purpose of producing high quality holly sprays. In anticipation of this, 3 pounds of English holly seed were sown at the State Forest Tree Nursery this spring. Since the seed of this species requires two years to germinate, it will be sometime before much is known about the possibility of supplying stock to prospective holly farmers. In the States of Montana, Washington and Oregon, forests of the exotic species are now already producing supplies that go into the making of wreaths which may be found in some of the Eastern markets at Christmas time.

The State now supplies the greater portion of the holly wreaths marketed in the United States and as evidence of the Department's keen interest in preserving the industry for Delaware, recommends the following for the consideration of holly produce shippers: (1), the adoption of a policy insisting on high quality wreaths and other Christmas decorations; (2), the adoption of an attractively designed label for use on the exterior of all holly products containers, said label to carry in large print the phrase "this package contains Delaware holly products," or some other statement that will advertise Delaware as the holly State; (3), encourage conservation of the holly tree by advocating wise harvesting methods.

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DELAWARE STATE FORESTER
DEPARTMENT OF AGRICULTURE
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ANNUAL REPORT

EXPERIMENTS IN NURSERY

White Pine—Fertilizer experiment started 1934

Ingredients	Rate Per acre	Inventory Per sq. ft.	Remarks
Blood and bone	3,000 lbs.	34	Look about the same. Blood and bone heavy application good. Not any better, however, than check areas.
Blood and bone	1,500 "	34	
Crab meal	600 "	34	
Crab meal	300 "	34	
Double superphosphate	218 "	16	Very poor sections not as good as check areas.
Double superphosphate	109 "	16	
Wood ashes	2,396 "	16	
Wood ashes	1,198 "	16	
"Sorbex"	30 tons	11	Damping off bad. Had very good appearance at first but now is not as good as check areas.
Manure and sawdust ..	30 tons	48	
Pond muck	2" top layer	7	As good if not better than check areas.
6-10-2 fertilizer	3,484 lbs.	12	Very poor.
6-10-2 fertilizer	1,742 "	12	
Check		47	Not as good as check areas.

Red Pine—Fertilizer experiment started 1934

Blood and bone	3,000 lbs.	14	Good. Nearly as good as area treated with "Sorbex".
Blood and bone	1,500 "	12	
Crab meal	600 "	40	
Crab meal	300 "	38	
Double superphosphate	218 "	18	Very good. Nearly as good as manure.
Double Superphosphate	109 "	12	
Wood ashes	2,396 "	18	
Wood ashes	1,198 "	30	
"Sorbex"	30 ton	53	Very good, equal to if not better than check.
Manure and sawdust ...	30 ton	53	
Pond muck	2" top dressing	2	Very poor.
6-10-2 fertilizer	3,484 lbs.	3	
6-10-2 fertilizer	1,742 "	20	Very poor.
Check		52	

Note: Compare "Sorbex" on red and white pine. This experiment will be watched for another year and any change in results noted.

Christmas Greens Industry Survey:

For a number of years the Department has been interested in the State's Christmas greens industry and has conducted investigations on the value, quantity and marketing of this special forest product. After the close of the shipping season in

The figures as given above are the results of the most comprehensive survey yet made in the State and although acknowledged as lacking absolute accuracy, may be accepted as very closely approximating the true value of this native forest product to the people of the State

FOREST FIRE CONTROL

Forest fire control is unquestionably the part of the Department's activity most familiar to citizens of the State. Even so, it is surprising how few persons understand what has been done or realize the real progress that has been made in the State. Prior to 1931 the Department existed without adequate legal status of funds to inaugurate the forest protection system which it knew to be necessary if any sustained advancement was to be made in forestry. The 1931 General Assembly supported and granted the Department's legal and financial requests for forest protection and succeeding assemblies have appropriated sufficient funds to carry on the work. Examination of the fire records appended to this report will demonstrate the effect of this action better than a lengthy description of results added in this caption. Sufficient to say that the same people who four years ago scoffed at the idea of any forest protection system being able to cope with Delaware's fire situation now not only accept it as an established fact but are among the first to criticize the Department for closing the fire towers during the least dangerous periods of summer and mid-winter. This sort of criticism is not unwelcome because it indicates that the forest landowner is depending on the Department to safeguard his property. The Department is mindful of this responsibility and at every opportunity seeks to improve its protection system having as its goal the complete elimination of fire from Delaware's forest land.

The towermen, the forest fire wardens, members of the fire crews, the Department foresters, all think, act and talk fire prevention because they know what fire can do when it is out of control. Their action and sincerity of purpose has earned public sanction, appreciation and co-operation.

Suppression Organization:

During the year (fiscal) the number of forest fire wardens has been increased to 73 and the number of registered crew men to 439. All men in the suppression organization are non-salaried