1967 Annual Report of the Bureau of Insect Pest Control

The year 1967 saw the scope of responsibility of the Bureau increased considerably with the addition to Section IX, Chapter 132, G.L. of the words "diseases and leaf eating and sucking insects which damage forests and shade trees". Rather than be limited to specific public nuisances as formerly set forth in Section IX, the Bureau is now in the position to assess for and advise recommendations for control of most of the forest and shade tree pests.

In the past the Bureau has been limited in giving assistance to cities and towns. It will now be possible to assist communities in the removal of maples, for instance, which have died or are dying due to climatic conditions and pose a serious problem in many instances.

The major problem facing the Bureau remains the Dutch elm disease.

It becomes more apparent each year that control can be accomplished throughout the various communities of the state if the recommendations of the Bureau are followed. It can be shown that losses can be held to a minimum in that city or town which follows a good Dutch elm disease program on both public and private trees.

The gypsy moth is at a low ebb at the present time. It will not be a problem for another two or three years.

A detailed report of the activities of the Bureau in the 1967 fiscal year with emphasis on some of the more important phases of the work is as follows.

Dutch Elm Disease - The disease and the beetles which spread it continue to take their toll of elms in the state. Work throughout the state to control the disease continued as usual.

In reviewing the Dutch elm disease situation in other states nearby and noting their accomplishments or lack of accomplishments along this line it is quite evident that the State of Massachusetts has approached the problem from the most practical point of view. The recommendations advanced by this Department and the University of Massachusetts are not exclusive to this state. They are the result of the thinking of many people throughout the United States. In the long run what has given us the edge over other states is the fact that, by law, each community in Massachusetts must appropriate and expend money for the control of the disease.

The results of these expenditures vary from community to community.

The overall result, however, is that by and large the disease has been brought under control. Although we continue to lose trees the rate of loss is far less than in adjoining states.

It has become apparent that the total impact of the disease on the elms in Massachusetts has reached a leveling off stage. For example, figures from the Shade Tree Laboratories at the University of Massachusetts show 7,902 confirmed Dutch elm diseased trees in the year 1964, in the year 1965 a total of 7,505 diseased trees and in the year 1966 a total of 7,851 diseased trees.



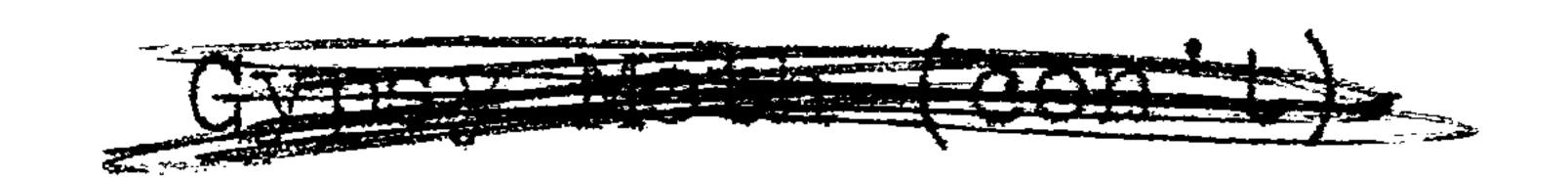
By law, the community that expends more than its legal liability towards Dutch elm disease control may ask for assistance from the Bureau to further its control program. Control in this sense means the removal and destruction of diseased trees or those elms in a weakened condition, from any cause, which attract and harbor the beetles which spread the disease. The assistance is rendered to the communities by means of the four tree removal crews stationed across the state. Statistics pertaining to the crews will be given later in the report.

To date the only known control for the Dutch elm disease is the suppression of the vectors of the disease, the elm bark beetles. Destruction of their breeding areas and protection of the healthy elms from feeding by the bark beetles by spraying are the only proven means of control.

Gypsy Moth)

The gypsy moth aerial survey to determine areas of the state defoliated by the gypsy moth was conducted in July of 1966. As expected the amount of defoliation across the state was insignificant - less than a thousand acre total. The areas noted were in Ludlow, Hardwick and Falmouth.

In the fall these areas were examined on the ground. It was found that the area in Ludlow which had been severely defoliated had no egg masses. Parasites and predators had done their job well. Those areas in Hardwick and Falmouth when examined on the ground showed egg mass populations but not in numbers or size to raise any concern.



Gypsy moth was at a low ebb throughout the state during this fiscal year. It is expected that it will remain so for the next year or two when it will again start building to an eventual epidemic level within a few years.

In connection with the gypsy moth it should be mentioned that other factors working adversly on the oak stands in the state have shown their effects. One of these is the severe drought conditions we have experienced in the past few years. A severe attack by gypsy moth followed by an extremely dry growing season does much to weaken the trees. When the trees have been weakened they are prone to attack by an insect called the two-lined chestnut borer. The larvae of this insect live and feed just under the bark. When enough of these grubs attack a tree they eventually kill it by girdling. This is happening at the present time and no figures are available to give a percentage loss in a stand but it is expected that a certain number of trees will die in a sort of delayed action which can be tack to the fact that they were defoliated by the gypsy moth for one, two or sometimes three years.

Beech Scale-Nectria)

✓ -In the spring of 1967, at the request of the Director, a survey was started to detect the presence and severity of the beech scale-nectria complex throughout the beech growing areas of the state. The services of the foresters was enlisted to do the najor portion of the field work.

Two meetings with the foresters and district supervisors in the beech growing areas of the state were held in April. At this time was explained the primary object of the survey - to determine where in the state the beech scale and nectria disease complex is and to what degree of severity.

At that time a deadline of June 30, was set forth for completion of the field work. On June 1 and 2 Chief Hood and Forester Dane travelled to Lebenon, N. H. for a beech scale-nectria training session. At this time it was learned that the field force may have been overlooking many indications that the nectria is present in a stand. Following this training session another meeting of Department personnel was called. At this time an attempt was made to convey this new information. The deadline for reporting was extended.

The only conclusion which can be drawn at the present time is that we have much more nectria in our beech stands than was anticipated.

Aquatic Weeds)

✓ - As was mentioned in the 1966 Annual Report, the Department is faced with a problem involving the lakes and ponds which are an integral part of our recreational system. The problem is the abundance of growth of aquatic weeds and algae which hamper swimming and boating.

The question to be answered was where, what kind and how much do we have. During September and October of last year a statewide survey was conducted by members of the Bureau. Forty Two lakes and ponds were surveyed in detail to determine whether a problem existed and if so what species of plant life were causing the trouble.

The final report of this survey as received by the Boston office showed that of the 42 bodies of water examined 15 had moderate to severe weed and algae problems.

In each area that weeds and algae were found they were identified and listed in the report. It is quite important to know what we are

dealing with in order to advocate a control measure.

The information gathered during the survey will be filed and added to from time to time. When an appropriation is made to do this control work we will be ready with the basic information needed.

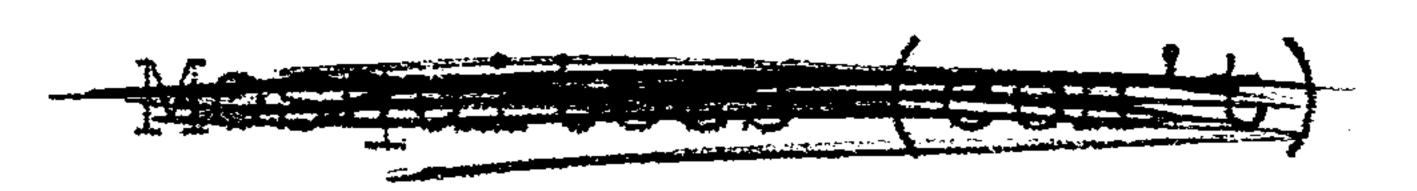
Mosquitoes,

✓ The perennial problem of mosquitoes on the park and recreation areas was with us again during this fiscal year. The Bureau of Insect Pest Control took a more active part in the suppression of these pests than it had for the past two or three years.

In 1966 the three Departmental mist blowers were put into good working condition and assigned to three areas across the state. Insecticide materials were supplied by the Bureau and experienced men were assigned to operate the sprayers. The reguinal supervisors supplied trucks or trailers on which to mount the blowers. Good control was accomplished wherever spraying took place.

To supplement the work of the blowers the small fogging machines were used. At best this type of control gives only temporary relief but in most situations it can be repeated as many times as necessary.

In the spring of 1967 the same proceedures as outlined above were put into effect. Due to the fact that funds were limited and the fact that the insecticides recommended for use against the mosquitoes were much more costly only enough material could be purchased for one application in most of the areas.



Results of this spraying have seemed varied. A number of factors have entered into this. If the spraying was done just prior to rain this seemed to effect the control. Of major importance, however, is the fact that 1967 has been one of the worst years for mosquitoes in a ling time. This coupled with the fact that we did not have enough insecticide to repeat applications has created a serious situation in some areas - particularly those near the coast which are subject to invasions by salt marsh mosquitoes.

Pesticide Board)

-In September of 1966 the Chief of the Bureau was named by the Commissioner as his designee on the Pesticide Board.

Of particular importance to the Bureau and to the cities and towns carrying out the business of the Bureau as set forth in Chapter 132, G.L. were the changes made in the rules and regulations of the Pesticide Board. The most important of these rule changes is that one which states "The Board shall issue a list of certain uses of specific pesticides which shall be prohibited in Massachusetts except that such uses of said pesticides may be made with permission of the Board when an emergency has been declared to exist by proper authority". This addition to the rules and regulations does not outlaw the use of any pesticide, only certain uses of the pesticide.

For example, DDT will not be outlawed both its use for the control of elm probably bark beetles will he prohibited.

P During the year a letter was sent from the Board to all those licensed to apply pesticides. The letter was in the form of a request to those planning

pesticide programs to refrain whenever possible in the use of so-called persistent or translocatable posticides. The attitude of the Board is that whenever possible it should resort to reason when trying to alleviate a major pesticide problem.

The Board gave formal approval to the Department on an experimental basis to use Methoxychlor in combination with Malathion against mosquitoes in the parks and recreation areas. Methoxychlor is not labled for such use. The only stipulation set forth was that we report back to the Board the results of the spraying.



Drought

year and one which does not come directly under work of the Bureau but which cannot be overlooked is that of the severe drought. Probably the most notable damage has been incurred by the sugar maples used in roadside plantings and plantings around homes. They apparently are able to grow quite well under these conditions until some form of stress is applied to them at which time they succumb.

Another tree growing out of its normal environment showing the effects of the drought is white pine. Those growing along roads and edges of fields are dying in great numbers.

Most species of trees which have been planted out of their natural environment have shown some effects of the drought although the two mentioned above have been hit the hardest.

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Elm Leaf Beetle)

This perennial problem which faces most local superintendents of insect pest control hit many communities hard during the past fiscal year. The underlying cause of this may be laid to DDT. For the past few years in many areas of the state the beetle has shown a resistance to this material. Many locals have shifted to using Sevin. This insecticide does not have the residual effect of DDT and therefore the timing of the application must be more accurate. Men in the habit of using DDT may not take this fact into consideration and miss the proper time to apply the material. It may be that climatic conditions were such that populations of the beetle increased considerably. Whatever the reason was, the elm bark beetle was heavy during the past year.

Blister Rust)

✓ -During the past year 1130 acres of premaintainance work were placed on maintainance and 5,938 acres of maintainance were placed on no further work needed. Most of this maintainance acreage was in Hampshire and Worcester Counties.

Pine survey and mapping figures were down considerably during the past fiscal year over those of the previous year. This was due for the most part to the fact that in January we lost both of our year round blister rust men.

Throughout the state we find under the broad category of control area acreage 1,374,728 acres. Of this total acreage we find 571,879 acres of white pine. We find 1,355,766 acres on maintainance and we find 1,133,525 acres in the category of no further work needed.



A total of \$10,342. in salaries was expended by the Department in the past fiscal year on blister rust control work in cooperation with the U.S. Forest Service.



Brown Tail Moth)

✓ - Again this year infestations of brown tail moth were found only on Cape Cod. Its activity is confined to areas along the coast on which beach plum and wild rose are abundant. Two small areas are on Sandy Neck in Barnstable and in Dennis.

The major infestation is within the boundaries of the Cape Cod National Seashore Park out to Long Point and Race Point in Provincetown. There are 9,100 acres of light to heavy infestation in the Truro-Provincetown area.

The Job Corps group from the National Park collected and destroyed more than 40 bushels of brown tail nests during the past winter. In light infestations this is considered a good method of control.

In the Long Point area the Plant Pest Control Division of Agricultural Research Service aerially sprayed approximately 175 acres using Sevinet the rate of 1 pound per acre. Satisfactory control was achieved.



Ticks

- The problem of the wood tick has become acute on Cape Cod and the Islands. Its activity is not confined to this part of the state alone but it is here that population numbers have reached a point where they are becoming intolerable. Moderate to heavy infestations can be found in



communities just to the west and northwest of Boston extending southward to the heavier infestations on the Cape.

Tree Removal Crews;

The recommendation made in the last Annual Report that the tree crews be scheduled for use on Departmental property more than had been done in the past was put into effect this year. Not overlooked, however, was the fact that their primary responsibility still remains the assistance to cities and towns having earned is such assistance.

Crew #1, working in Southeastern Massachusetts, spent 206 man days removing 491 Dutch elm diseased trees from 12 communities for a total Bureau cost of \$5,700. This same crew spent 136 man days scouting and sampling 799 trees for Dutch elm disease at a Bureau cost of \$2,345.

Crew #2, working in Northeastern Massachusetts, spent a total of 382 man days removing 561 Dutch elm diseased trees from 13 communities for a total Bureau cost of \$10,000. This crew also spent 102 man days scouting and sampling 414 trees for Dutch elm disease at a Bureau cost of \$2,510.

Crew #3, covering Worcester County, spent a total of 417 man days removing 557 Dutch elm diseased trees from 25 communities for a total Bureau cost of \$10,400. This crew also spent 123 man days scouting and 1,259 trees for Dutch elm disease at a Bureau cost of \$2,030.



Crew #4, covering Berkshire County and some communities in the Connecticut Valley, spent a total of 426 man days removing 337 Dutch elm diseased trees from 16 communities for a total Bureau cost of \$8,100. This crew also spent 121 man days scouting and sampling 681 trees for Dutch elm disease at a Bureau cost of \$1,820.

Together the four crews assisted other state agencies in the scouting and sampling of 305 suspected Dutch elm diseased trees requiring a total of 41 man days. They also assisted other state agencies for 38 man days in the removal of 43 diseased trees.

A total of 840 man days were spent doing Departmental work other than the removal of diseased trees. This included such work as spraying, removing dangerous trees, working at the nursery, putting in and taking out the floats at Regatta Point, cutting trees for new roads, etc.

Miscellanea)

→ -During the past fiscal year Bureau activities occasionally covered areas somewhat out of the ordinary. In the new Hopkinton State Park was found an abundant growth of poison ivy. It was also found that parts of the area were in need of brush control. Bureau personnel assessed the situation, gave recommendations and supplied material to do the job.

At Robinson State Park was discovered a heavy infestation of pine needle scale on a stand of white pine. A mist blower and spray material were dispatched from Stow in an attempt to bring it under control.

Reports during the past spring indicate that the control measures were successful.

A heavy infestation of the same pine needle scale was reported to the Bureau at the Youth Rehabilitation Center in North Reading. Through the efforts of the Bureau a large hydraulic sprayer was obtained. Bureau personnel spent 3 days spraying this stand of mature white pine. Apparently the efforts were successful.

In the company of officials of the Massachusetts Department of Agriculture and the U. S. Department of Agriculture, the Chief spent a day in Charlton viewing the area in which the insect new to this state, the European Chafer, was discovered. It is an area where large trucks using the toll road occasionally stop. Later a control project eliminated the pest from the area.

Personnelj

A number of personnel changes have occurred during the past year.

Roy Chase retired after sixteen years of service with the Department as

District Supervisor. His position was filled by Clifford Welcome whose

previous job with the Bureau was Plant Pest Suppressor.

With the addition to the Division of the five new positions of Assistant Regional Supervisor, the Bureau lost two District Supervisors, Frank Colombo and Henry Mathieu. Their former positions were filled by two members of the Worcester tree removal crew, Albert Genest and Russell Larson. Men are still being sought to fill the vacancies on the tree crews due to this change.

Recommendations)

—Since 1954 there has been a cooperative effort on the part of the Department and the U. S. Forest Service to control the white pine blister rust in Massachusetts following the drawing up and signing of a Memorandum of Understanding between the two parties. As stated in the Memorandum it "shall continue indefinitely, but may be modified or discontinued at the request of either party".

It is now felt that the time has arrived to discontinue this agreement. When the blister rust disease was introduced into the United States many years ago there were valid reasons and an urgency to eliminate or bring under control this disease which could annually destroy millions of board feet of valuable white pine. A concerted effort on the part of the Federal Government utilizing such agencies as the CCC's and various state governments has brought it to a point where, in Massachusetts at least, well over 95% of the white pine growing areas of the state have been put into the classification of maintainance. This means that the areas have been examined and the currents and gooseberries destroyed or found to be non existent.

Now is the time to re-evaluate the total situation in Massachusetts. Should we spend in the vicinity of \$10,000 to \$12,000 per year on this one forest pest or should we utilize this manpower on projects of more immediate urgency?

YEar

At the present time we have two year round positions and two seasonal positions assigned strictly to blister rust control work. Without changing the location of these positions it is felt that these men can be utilized by the Bureau and the Division to much better advantage if the Bureau is not committed under the present cooperative program for blister rust control.

C. S. Hood

Chief Superintendent