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BUREAU OF INSECT PEST CONTROL

CHARLES S. HOOD-CHIEF

Read

Trees

Until comparatively recently, with the exception of a relatively small group of people, trees were considered as something that are here, like air and water. Today their value, like that of air and water is becoming more evident to more and more people.

Trees fill a need for shade, a need for screening, a need for softening the harsh stark lines of buildings, a need for adding beauty and graciousness and a feeling of welcome to streets that otherwise are purely functional. Trees also fill some of our more basic needs such as adding to our oxygen supply, filtering out dust and other foreign particles in the air, supplying the basic ingredient for our paper, and yielding lumber from which we build our shelters.

Trees and their well being can no longer be taken for granted. They must be chosen carefully to fit the site in an urban environment and must be managed according to site in a forest situation. Once planted as shade trees or selected to produce timber or pulp the trees must be protected.

Values Assigned

It is not an impossible task to place a value on trees growing in a forest. The end product reaches the market place and simple economics determines its worth. With shade and ornamented trees the end product is the tree as it stands. In this case assigning a value is much more difficult, albeit necessary.

When a stand of timber or a large area of forest land is under attack from an insect or tree disease the value threatened can be balanced against the cost of control. Simple figures will determine whether further efforts need or shall be made. When considering shade or ornamental trees under

attack the dollar value of a tree must be determined by a different set of rules.

Recognizing this the International Shade Tree Conference through the efforts of many knowledgeable people established a set of rules which, if followed, allows one to put a value on an individual tree. Many factors are taken into consideration such as locations, species, size, shape, and condition.

To illustrate consider a sugar maple on a lawn in a residential area with a diameter at breast height of 20 inches or 314.2 square inches in cross section. Six dollars has been established as the value per square inch for a perfect speciman. Multiplying $6.00 X 314.2 determines a value of $1884. This value would diminish if the tree species were to fall in another class of if it were not in perfect condition.

Trees are worth protecting. Protection begins with an understanding of trees and their relation to the environment followed by a knowledge of specific insects and disese which attack the various species of trees. The Bureau of Insect Pest Control has as its major responsibility the protection of trees, both forest and shade, from the ravages of insects and disease.

Advice, Assistance, and Research

Of equal importance are the imparting of knowledge, the technical and practical aid rendered and the search for new knowledge. The Bureau of insect pest control engages in each of these activities. Of primary consideration are the cities and towns of the Commonwealth. To assist them in their endeavors to maintain their shade and forest trees Bureau personnel make frequent visitations to the communities within their districts. Current problems are discussed and, if possible, solutions are worked out.

The Bureau also does its part to maintain Departmental lands and waters in a condition suitable for the use of the general public. Special projects during the past year included mosquito control, rat extermination on four Boston Harbor islands, the removal of dead and dangerous trees from recreation

areas and the surveying for and supervision of a control program for aquatic weeds and algae.

Research

Again this year research continued on the possible use of the synthetic sex attractant, disparlure, to control the gypsy moth. Under the Cooperative Agreement with the Agricultural Research Service of the U.S.D.A. $35,000 in Federal money was granted to the Department to underwrite the cost of the work. The total, to date, of Federal money received for this work is $86,627.

As recorded in the last Annual Report, work in 1974 was concentrated on Mt. Zion Island in the Quabbin Reservoir. The island was treated with the insecticide, Sevin, to reduce the population of gypsy moth to a low level. One third of the island received no further treatment, one third was treated once with 8 grams of lure per acre as microcapsules and one third was treated by mass trapping with 10 high potency disparlure baited traps per acre. The 3 treatments all showed the same degree of mating by exposed females, 2.4-3.2% relative to mating on an untreated (control) island, on which mating was 85.4%.

The 1974 results strongly indicate that the air-permeation technique employing slow-release encapsulated disparlure at the rate of 8 grams lure per acre is effective in reducing mating success in low-level infestations or in infestations reduced to low level with an insecticide.

Follow up work in 1975 was conducted in the same general area of the State and for which no data analysis is yet available.

General Conditions

Gypsy Moth-Populations continued to build from the previous year. The aerial survey conducted in July of 1974 revealed 76,903 acres of visible defoliation, an increase of 34,000 acres over the previous year. Again the major problem areas, were Norfolk and Bristol Counties and south central Massachusetts from Southbridge west to Hampden. For the first time in many years no defoliation was reported from Cape Cod.

Dutch Elm Disease-In the continuing effort to control the spread of the Dutch elm disease the tree removal crews assisted over one hundred communities in the removal and destruction of more than 2,000 trees, all of which were potentially hazardous to the healthy elms nearby. The fact that the Commonwealth still has a large elm population is due largely to the prompt removal and destruction of diseased trees before the bark beetles can emerge from these trees and spread the disease.

Another important aspect of Bureau activity in relation to the Dutch elm disease is that of surveying for suspected diseased trees. Although visible symptoms can lead one to suspect that the tree has the disease samples must be taken, sent to the Shade Tree Laboratories at the University of Massachusetts and cultured before a positive determination can be made. The crew members assist communities in this important work by supplying manpower, equipment and know how.

State property is not immune to tree problems, including the Dutch elm disease. During the months of April and May and at other times when emergencies exist the crews are available for tree work on Environmental Management parks and recreation areas. Diseased and dangerous trees are removed by men skilled in this type of operation. In 1974 the crews worked on 22 different recreation areas and removed 717 trees.

Fall Webworm-In the late summer of 1974 we witnessed the second year of severe defoliation and nest building by the fall webworm. Aesthetically, it is very undesirable and provokes numerous phone calls and letters. It does not, however, create lasting damage to those trees attacked. It should, as past history indicates, drop from epidemic to endemic populations in the near future.

Hemlock Looper-The outbreak of this forest pest in eastern Essex County which has raged for the past two years now shows signs of subsiding. Large numbers of old, over mature trees have succumbed. Most unfortunate has been the loss of trees in this age class which because of location had been an integral part of the landscape. Those owners who sprayed, however, preserved their trees.

Pine Looper-This insect continued defoliating pitch pine trees on Cape Cod and Plymouth County. Although some mortality has resulted the major complaint has been the brown looking tree when they should be green.

Summation

Inasmuch as trees are a major component of our environment their care and maintenance is necessary to their well being. Care of trees involves a number of approaches not the least of which is the suppression of insect pests and disease. Suppression requires an understanding of the particular pests involved.

Chapter 132 of the General Laws places the responsibility for the suppression of these pests in the Bureau of Insect Pest Control. To know the life history and habits of the pests is necessary before proper control methods can be recommended or undertaken. Bureau personnel conduct various surveys to determine the extent and intensity of pests in outbreak state. Control recommendations, when given, are dependent upon knowledge of the life history of the pest in question and the determination of its most vulnerable period. Bureau activity in FY 1975 followed the above procedures in fulfulling its responsibilities.