

REPORT

OF THE

STATE BOARD OF AGRICULTURE

ON THE WORK OF

EXTERMINATION OF THE
GYPSY MOTH.

JANUARY, 1903.

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MASSACHUSETTS STATE BOARD OF AGRICULTURE,
BOSTON, Jan. 23, 1903.

HON. JAMES J. MYERS, *Speaker, House of Representatives, State House,*
Boston, Mass.

DEAR SIR:—I have the honor to transmit to you the report of the gypsy moth committee of this Board, under authority of chapter 210, Acts of 1891, which legislation is still in force.

Respectfully,

JAMES W. STOCKWELL,
Secretary.

Commonwealth of Massachusetts.

To the Massachusetts State Board of Agriculture.

Your committee on gypsy moth, insects and birds submits herewith its report for the year 1902.

It may be well to state at the outset that since Feb. 1, 1900, no legislative appropriation has been available for work against the gypsy moth. Your committee therefore has not been required to carry on an active campaign against this insect; instead, its activities have been along the lines of recording the increase and spread of the moth and of advising property owners how best to combat it. As a consequence, this report deals with the depredations of the moth during the past season and its present known distribution.

Your committee has made inspections of the infested territory before the eggs hatched in the spring, again when the caterpillar plague was at its height, and still later after the eggs had been deposited in the fall. From these investigations, as well as from voluntary reports of reliable observers, it has been possible to follow with a considerable degree of accuracy the development of all the older and more important moth colonies.* We have endeavored to give a faithful yet conservative statement of the present situation as regards the moth, — a situation which even in its best aspects is sufficiently alarming.

WORK OF THE GYPSY MOTH THE PAST SUMMER.

In the spring of 1902 the egg clusters of the moth were present in large numbers in many sections of Arlington,

* For information concerning the spread of the moth we are especially indebted to H. L. Frost, Arlington; C. E. Merrill, Melrose; C. E. Mann and W. G. A. Turner, Malden; and A. H. Kirkland, Reading.

Medford, Malden, Melrose, Saugus and elsewhere, and as soon as the foliage developed swarms of tiny gypsy moth caterpillars attacked it. At first the damage was little noticed, but as the weeks passed and the caterpillars approached maturity it became only too apparent. Local outbreaks nearly as severe as any of the earlier years of 1888-90 occurred in nearly all the worst infested towns. From the rocky hilltops to the north of Boston one could easily detect many brown, stripped areas, contrasting sharply with the normal green of the woodland. Feeding for a few weeks in the colonies where they were hatched, the caterpillars soon exhausted the foliage supply and then began that characteristic migrating in swarms which renders them such an annoying as well as dangerous pest. From the edge of stripped woodlands the insects swept like a devouring swarm over fruit and shade trees, over garden crops and flowers, and even devoured the grass in every line of march.

The experiences related by suffering householders as well the scenes to which this committee was an eye witness simply beggar description. At Lynnfield a strip of woodland half a mile long and from ten to twenty rods in width was completely defoliated and left as bare and brown as if seared by fire. Near the poor farm at Melrose some ten acres of second growth oak were absolutely stripped of foliage; the trees are never more destitute of leaves in midwinter than they were there in the middle of July. In the rear of the Oak Grove station at Malden a plot of old oak growth, containing perhaps half an acre, was stripped, and from the trees overhanging the street the caterpillars dropped in such numbers that passers-by were obliged to raise umbrellas to protect their persons. Over the doors and in the cornices of the station the caterpillars literally hung in festoons. At Baker's Hill Malden, the swarming insects massed on house walls obscured the color of the paint and made all a uniform dark brown.

Serious outbreaks also occurred at Arlington, Belmont and Watertown and to a smaller degree at Lexington, Woburn and Lynn. During a day's drive through the invested territory early in July the committee saw all told at

least one hundred acres of woodland practically defoliated by the moth. By the last of June so formidable had become the caterpillar plague and so unendurable the nuisance that the mayors of four cities in the northern metropolitan district consulted with the Governor and Legislature near the close of the last session asking for legislative relief. Their request for aid by special legislation made at such a late date was not granted. At Malden and Melrose municipal funds were drawn on to pay ten cents per quart for the caterpillars at the time of greatest damage. The insects were gathered by hand, mainly by children, and carried in all kinds of receptacles. While almost incredible numbers of the larvæ were destroyed in this way there is no doubt that this careless method of collecting the insects has resulted in their increased distribution; as a matter of fact only a small reduction in the number of egg masses, even in the largest colonies, was accomplished by this method.

PRESENT CONDITION OF THE INFESTED TERRITORY.

The present condition of the infested territory is indeed serious. From Waltham to the sea there are now a large number of well-established woodland colonies, which wait but for a favorable season to greatly extend their area. In such colonies the egg clusters may be found by the thousand, and here next season there will be outbreaks as bad, if not worse, than those of 1902. These strong colonies are not only a menace to the woodlands where they occur but serve also as plague spots from which a large area of surrounding farm or residential territory may become infested. Thus if they are neglected they easily spread further and further into non-infested territory. We believe these colonies are entitled to special mention, since in our judgment they constitute the most important feature of the infested territory. As long as the woodlands are infested the moth will abound throughout the entire district.

The moth is quite generally scattered throughout the Fells Reservation of the metropolitan park system. The worst infestations, being known, have been watched and treated under the direction of the park commission. It is apparent,

however, that the insect is increasing in these woodlands, and more work will be needed in the future than in the past to suppress it.

The colonies in the residential districts have developed faster than those of the woodlands, but from restricted food supply and greater ease of treatment are not as large or as difficult to control as those of the wooded sections. Their rapid development as compared with the woodland colonies may be due to the more heroic and extra thorough treatment formerly given these latter colonies by the employees of the committee. There is also little doubt that the greater abundance of native insectivorous birds in the wooded sections has resulted in checking to some extent the increase of the moth, while the latter has been directly favored by the English sparrow in residential sections. The colonies in the residential districts are of a very annoying nature. The caterpillars strip orchard and shade trees, thereby destroying fruit and foliage; where abundant they invade houses; when the food supply is exhausted they march, often by night, in search of foliage. It thus results that one may retire the owner of trees in full foliage, or garden crops in thrifty growth, and wake to find only bare twigs or riddled leaves where the caterpillar swarm has passed. Again, the residential colonies are the means of spreading the moths to an important degree. The young caterpillars spin down from the trees and drop on passing teams. In sections where the wagons of the milkman, grocer or butcher are continually on the road a general infestation by the moth is bound to result.

At Watertown there is at least one large and important colony in the residential district. In Cambridge and Somerville there are several small colonies. Belmont has one large woodland colony, embracing nearly a square mile. Arlington is generally infested. Along both sides of the "upper mill pond" the willows are thoroughly infested. There is an important colony in the northwestern part of the town, near the Belmont line. Lexington has a few small colonies and one of considerable size near the Woburn line. Winchester shows scattered infestations, with at least one

large woodland colony in the southern part. Medford, Malden and Melrose are thoroughly infested, both in woodland and residential sections. The moth is present in large numbers in each of these cities and here next season, if unmolested, will cause widespread damage. Everett and Chelsea have a fair quota of residential colonies. Saugus, Lynn and Lynnfield have important woodland colonies. The outlying sections — Newton, Lincoln, Georgetown and the north shore — are still in comparatively good condition.

Now that it is well known that relief from the gypsy moth is necessary it will not be amiss to review briefly the history of the State work against the pest. The first notable ravages of the moth took place in 1888-90. In Arlington, Medford, Malden, Everett and vicinity fruit trees, shade trees and even garden crops were ravaged to such an extent, and the caterpillars became such a nuisance, that the municipal authorities of eight cities and towns united in petitioning the Legislature of 1890 for State help in suppressing the moth. The people had combated the swarming insects as best they could, had been defeated at every turn, and as a last resort invoked the aid of the Commonwealth to save their trees from destruction.

The State work, at first carried on by two successive commissions, was placed in charge of the Board of Agriculture in April, 1891. From 1890 to 1899 inclusive the several legislatures appropriated various sums, aggregating about a million and a quarter of dollars, "to prevent the spreading and secure the extermination" of this foreign insect pest. It was a novel undertaking, a step into an unknown field. There was no precedent for a guide. Methods had to be devised and perfected. The territory had to be scouted and the infested areas located. Men had to be selected, trained and organized, so that the greatest possible results might be obtained. Legislative appropriations were ample in certain years, in others much reduced below the needs of the work. Sometimes they were made available when needed, — at others granted after long and expensive delays and consequent loss of working time. In spite of all these difficulties the work went steadily forward toward the desired end,

until in January, 1900, this committee was able to report: "From the results of the past two years it is evident that the work against the gypsy moth in Massachusetts is already approaching its final stages. The large colonies have been practically wiped out; many of the smaller colonies have been exterminated or are thoroughly under control, and need but two or three seasons' work to secure their absolute extermination. Three years ago there were many localities in the infested district where there were large masses of egg clusters. To-day the infestation of the region consists of the scattered remains of former colonies and their offshoots, which must be subjected to careful and continual examination and treatment for a series of years."

The work of the committee was made the subject of a protracted investigation on the part of a special legislative committee in the early months of 1900, and after several examinations of the infested district they too reported: "There are to-day, so far as known, no large colonies."

It has been fully demonstrated that this statement was a fair and temperate representation of the facts of the case. The gypsy moth committee was not mistaken or misinformed. The expert entomologists who had investigated and commended the work had not been misled. The testimony of hundreds of grateful citizens whose property had been freed from the pest was correct. *The moth was under control.* That no alarming outbreaks occurred in 1900 showed most convincingly that there were no important colonies in existence at that time. But the increase of the moth waits not on the bidding of man. It knows no law but the law of nature. The few scattering egg clusters remaining in the spring of 1900 had increased to formidable numbers in the fall of 1901 and the presence and probable danger from the latter were duly reported by this committee: "From the general and increasing infestation of the entire district we are led to fear that soon, unless preventive action is taken, the scenes of the historic outbreak of 1889-90 will be repeated, on an even larger scale."

This prediction unfortunately has been fulfilled. It is not necessary to describe further the caterpillar outbreak of

1902. From some ten years' experience with this pest we believe that, bad as have been the recent depredations, the future has even worse and more widespread damage in store. The year just passed has proved anew the futility of individual efforts in controlling the moth, and the pressing need for thorough-going, concerted, systematic work against the pest over the whole infested district.

AUGUSTUS PRATT.

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