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THE DAILY BRITISH WHIG.

YEAR 73. KINGSTON, ONTARIO, SATURDAY, FEBRUARY 3, 1906. NO 29.

NEW ENGLAND'S GREAT MENACE

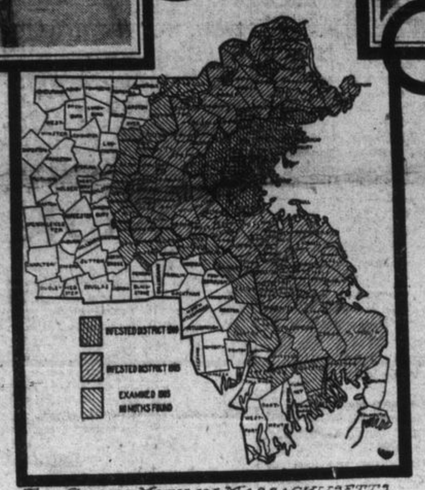
The Ravages of the Gypsy and Brown-tail Moths

WINTER WEBS OF THE BROWN-TAIL MOTH ON ENGLISH OAK

DESTROYING WINTER WEBS OF BROWN-TAIL MOTH

KILLING THE EGGS OF THE GYPSY MOTH

VARIOUS STAGES OF THE GYPSY-MOTH
1. FULL GROWN CATERPILLARS 2. PUPA
(3. FEMALE MOTH, LAYING EGG CLUSTERS)



THE GYPSY MOTH IN MASSACHUSETTS TERRITORY NOW INFECTED

REMOVING THICK GROWTH FROM INFESTED WOODLAND

By Franklin H. Wentworth.

That the crowning glory of the old towns in which their fathers were born—those grand old elms planted by their fathers' hands—should actually have their existence threatened by a vulgar insect; this is too much for the equanimity of New England.

The thought that in a few years the beautiful interlacing branches which cover the streets in which they played as children shall be swept away with their grand old supporting boles, and the streets themselves become as bare and unbeautiful as those of a boom town — this inspires a kind of frenzy.

Yet for forty years the "gypsy" moth has been laying her eggs, her caterpillars increasing until the legislature declared the gypsy moth a "public nuisance." But the moth does not mind legislation and has been joined in its work of devastation by the "brown-tail" moth. Patches of woodland are so stripped of foliage by the end of June that they look like November. Orchards are eaten clean and even the white pine is fed upon by these pests until it withers and stands blackened as by a blast of lightning. Only people of the West who remember the years a cloud of grasshoppers darkened the sky and passed, leaving not a spear of grain to harvest have any parallel by which to imagine the destruction that New England faces.

The gypsy moth caterpillar attacks all trees, though it prefers apple, oak and elm. It will devour nearly every useful crop that grows. Throughout infested portions of Massachusetts it drags its loathsome length along the walk, upon the houses and verandas, and does not leave the interior of dwellings free.

It is usually conceded that the naturalist is a superior person. The naturalist who introduced the gypsy moth from Europe is remembered only for the harm he has done.

As far as records exist, the gypsy moth has been a pest in the Old World, at times increasing disastrously, for other periods decreasing. Now it is most numerous in Southern Russia. Up to 1868 it was unknown in the western hemisphere. In that year the insect was brought from Europe by an experimenter living in Medford, Mass. Its propogation in America was distinctly successful. Numbers of moths escaped from captivity and spread into Eastern Massachusetts, and became by 1890, so serious a pest that the state began exterminative work.

This was continued for ten years and the propogation of the pest so hindered that people relaxed vigilance. No sooner had the state ceased systematic operations than the moth began to gain headway, and today it occurs in enormous numbers over a vastly larger territory than when it first attacked the state.

The gypsy moth exists under four different forms during the year. The eggs of the moth are laid in July and August in a yellowish, hair-covered mass, averaging about one and one-half inches long and three-quarters of an inch wide. The egg mass resembles a small, tightly stuffed, oval, buff-colored cushion, but during the winter the color fades to a dingy, white. In this mass the eggs, to the number of about 500, are packed with yellowish hair from the body of the female moth. An individual egg is scarcely as large as a pinhead, salmon-colored when first laid, but turning dark in a few weeks.

The eggs hatch about May 1, and each "cluster" yields a swarm of small caterpillars, which become grown by midsummer. Gypsy moth caterpillars of any age are hairy. Their heads are large in proportion to their bodies. When mature they have a sooty colored body. Along the back from the head, which is marked with yellow, is a double row of blue spots, followed by a double row of red. The double row of spots may be seen distinctly on a gypsy moth caterpillar which has attained a length of an inch and a half or more. There are five pairs of blue spots and six pairs of red. No other New England larva has this double row of red and blue spots. Until the caterpillar grows to the length of an inch and a half, it does not always show these spots very distinctly.

When fully grown, the caterpillar spins a few threads of silk as a supporting frame work, casts its skin and changes into a pupa, or, as it is sometimes called, a chrysalis. The pupa is dark reddish or chocolate in color and sprinkled with reddish hairs. Unfortunately, it resembles closely the pupae of certain other moths found in New England, and cannot be identified at a glance. From July 15th to August 15th the winged moths emerge, the date varying according to the season and the period of pupation. The male moth is brownish yellow, varying to greenish in color. He is slender and expands about one and one-half inches and flies actively by day with a zigzag flight. The female moth is nearly white, with numerous black markings. She is heavy-bodied and sluggish. The female does not fly; otherwise the spread of the pest over the entire country would be inevitable.

After mating, the moths live but a short time. They take no food; all damage is done by caterpillars. The female dies after depositing her egg mass. While they do not crawl far from the place in which they hatch, except when there is a scarcity of food, they spin down from trees, and falling on vehicles are carried from place to place. It is for this reason that the state in its initial warfare devoted its energies chiefly to trees and woodlots and orchards adjoining highways. The egg clusters themselves may also be transported by any of the numerous objects upon which they are laid. Freight cars that have stood upon sidings near infested foliage for a period long enough for the laying of eggs in their crevices may even transport the pest over long distances.

From August to May the egg masses may be found in places near where the moth emerged from the pupa case. In laying, the female moth chooses tree trunks, under sides of limbs, sheltered crotches and holes in trees. The egg clusters are also found on shrubbery, buildings, scattered and heaped rubbish, barrels, boxes and similar objects standing out of doors, woodpiles, stonepiles, fences, walls, boulders and the like. The tendency is to deposit the eggs on the lower or inner surface of the object, but when the moths swarm in one place, they disregard all rules, and egg masses may be found in plain sight.

From May to August the caterpillars may be found in various stages of growth, diminishing rapidly in numbers after the middle of July. In the spring the small ones appear on the foliage, feeding on the upper side of the leaf. As the caterpillars gain size their instinct leads them to begin to feed at night and during the day seek shelter in any accessible place affording shelter from discovery.

This habit has suggested means of extermination, especially in orchards and upon shade trees. All one has to do is to furnish a good place in which they may hide, and slaughter them in the day, when they may be seen by uncovering their refuge. A good way is to tie a short skirt of burlap upon the bole of the tree, and on some of the larger limbs. When daylight comes the caterpillars crawl to the trunk of the tree in processions. Finding the burlap, they crawl under it, until their enemy, man, lifts the skirt and scrapes them off into a pan for burning.

But to dress all the trees in the infested district with burlap skirts and attend to them daily would require half the population of New England. That is merely to protect certain trees after the eggs have been hatched. There are acreages of brush and sprout land in which the pest also breeds. When such a plot becomes infested there is but one thing to do—clear it and burn it. But the burning must be well done. As eggs withstand the New England winter, so are they resistant to fire. An intense heat applied directly to the clusters is required to kill.

Where low cost woodland and tracts of brush are infested, and it is not desired to save any saplings, it is thought wise to burn the ground over with oil after the brush is cleared, to destroy eggs scattered in cutting. If it is desired to save the saplings they require to be carefully gone over, after the brush is cleaned out and burned, the egg clusters searched out and destroyed by painting with a mixture of creosote. Then the trees must be sprayed in the spring with a solution of arsenate of lead and burlapped to kill those which escape the spraying.

The "brown-tail" moth, although differing in its habits from its companion, is as destructive, and in some localities has been more so. Somerville, Mass., let loose this pest. In Europe it is called the "common caterpillar." In America it began feeding upon fruit trees, but it has adapted to various forest trees, notably oaks.

Unlike other caterpillars, most of which may be handled with impunity, when the caterpillar of the brown-tail moth comes in contact with human flesh there is produced a most painful nettling. This is due apparently not to any poisonous secretion in the hairs, but rather to the finely barbed and brittle hairs themselves, which enter and break off in the flesh. Many Massachusetts people have been made ill by it.

The egg mass of the brown-tail resembles that of the gypsy, but is seldom laid anywhere save on the underside of a leaf. It is smaller and more elongated than the gypsy cluster, and of a brighter reddish-brown color. The eggs do not hatch till August. They cause but little damage the year they are born. When they first hatch they feed on the upper surface of the leaves, but soon commence spinning winter webs. In making the web a number of leaves are drawn together, and a tenacious silken thread woven about them. The web is grayish in color, composed of dead leaves and silk, and very hard to tear. Each web contains about 250 caternillars. With the cold weather the caterpillars enter and close the exit holes.

Then is demonstrated the strange phenomenon of a caterpillar "wintering over." They emerge early in April—eat first buds, then the blossoms and attack the foliage. The full-grown caterpillar is about two inches in length, with a broken white stripe on either side and two conspicuous red dots on the back near the posterior end.

The moths are pure white on the wings. The male slender-bodied, while the female has a bunch of brown hair at the tip of the abdomen, whence the name "brown-tail". Both males and females fly by night and are attracted to lights. All the destructive work is done by its caterpillar, which feeds by day. It travels extensively by way of moving vehicles.

The brown-tail is most accessible in the caterpillar web. The winter webs may be sought out and removed by the use of pole shears or long-handled pruners, and then burned. When a light snow is on the ground the work of web destruction can be best carried on.

The female winged brown tail moth, like the male, is a strong, swift flier and can carry her eggs long distances before depositing them. For this reason the brown-tail has spread much farther from its point of introduction in Massachusetts than has the gypsy. In its flight it is often aided by strong winds, and is also transported on steamboats and in electric and steam cars, to which it is attracted at night by the lights.

The brown-tail is already known to have spread at least as far northeast as Eastport, Maine, and as far south as Cape Cod. To the west it has been found at Amherst, Mass. The eastern portion of Massachusetts from north to south is now quite solidly infested, although less so south of Boston. The extermination or suppression of these pests can never be successfully accomplished by leaving the matter to individuals. Unless a parasite can be found to prey upon and destroy the eggs of these moths—and the state of Massachusetts is already experimenting with a tiny fly which it is hoped may perform this useful service—it will require the persistent action of the people as a state as well as individually to make headway against the wholesale devastation. If the mania of the small boy for the collection of birds' eggs be diverted into as ardent a liking for the discovery of the nests of the gypsy and brown-tail moths, the New England lads could render a distinct and wholesome service.

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Mrs. Charles Keeling, Sr., Owen Sound, Ont., writes: "It is a pleasure to tell what benefit I have derived from Dr. Chase's Nerve Food. I am about fifty-five years old and for about five years my life was one of great suffering from nervousness, weakness and extreme physical exhaustion. I could not sleep and hot flushes would pass through my body from feet to head. I consulted my family physician and two other doctors, but they told me that about my time of life I was likely to be troubled that way. I continually grew worse and despaired of ever being cured. Dr. Chase's Nerve Food came to my notice and as we have Dr. Chase's receipt book I have confidence in the doctor. I was so surprised at the help I received from the first box that I bought three more. They built me right up and made me feel healthy and young again. They have proven a great blessing to me and I hope this testimonial will be of help to some weak nervous women suffering as I did."

It is well worth your while to put Dr. Chase's Nerve Food to the test, and, while the blood and nerves are being revitalized and the form rounded out, note your increase in weight, so that you may have positive proof of the blood-forming value of this great medicine. 50c. a box, at all dealers, or Edmanson, Bates & Co., Toronto. Portrait and signature of Dr. A. W. Chase, the famous receipt book author, on every box.

CHERRY SELLER WINS £80,000

Lucky Workmen Share First Prize of £240,000.

There is great rejoicing in Barcelona where the first prize of the Christmas state lottery, worth £240,000, has been won.

The lucky ticket was No. 52,884, and was divided into ten shares. Seven of these were held by the firm of Java and Blanch for their employes, who will thus have £188,000 to share among them. Another share was won by a fishmonger, one by a coffe house keeper, and one by a woollen merchant, who each get £24,000.

As yet the second prize of £120,000 is unclaimed; but the third of £80,000 has been won by a cherry seller and some friends of his who subscribed for a ticket and purchased No. 15,554.

Among other prize-winners are a number of Spain's most prominent literary men, including Aurelio Varella, and Joaquin Dicenta, the dramatist.

It is noteworthy that not one of the four winning numbers contains the figure seven, nor does the total of any one of them form a multiple of that number. This, to so superstitious a race as the Spaniards, is a remarkable occurrence.

Six other prize-winners are natives of the town. Twenty prizes fell to tickets sold in Madrid, among them being the second and third, and Valencia has four prizes, including one of £40,000.

A baker's apprentice named Gevin, at Chaffagne, near Macon, France, who took five tickets in a Christmas lottery, won prizes with three of them. The total amount won was £422.