Notes on the production of the Peach worm or Grub by the fly — the operation of the Grub on the Tree, and the effect of the same — together with a proposed means of prevention of the attack of the fly.

The fly which produces the worm or grub in appearance resembles a species of wasp, and about the size being about one inch in length. The females have a bright orange Coloured belt around them, the Colour a deep blue. The males have not the belt, and are rather differently formed. They Commence their work soon after they fly. which is by puncturing the bark at, or very near the surface of the ground. when they deposit the nits or eggs which produce the worm. I have noticed the worms in a very small state (just discernable with the naked eye.) in the fall. but most commonly in the Spring after the ground opens, when they take a rapid growth, and go ahead with their work of destruction.

The first evidence of the existence of the worm in the Peach Tree is the oozing out of the gum at or near the surface of the ground. which being removed, and the ground around the tree scraped away, the wound made by the grub may be discovered. tho' in some Cases is hardly perceptible, but on close examination, and by the aid of a sharp pointed knife or other instrument the perforations of the worm may be traced in the bark, generally in a diagonal direction, or in a Course rather around the tree, most Commonly downward, to one or more inches below the surface of the ground, tho' sometimes but seldom the boring takes an upward Course from the surface, at the termination of the boring the worm will be discovered, with a light Coloured body, and a reddish brown head, varying in size from half an inch to one and a fourth inches in length — in the gum may be seen a substance resembling fine saw dust, produced by the boring of the worm, from which together with the gum which seems to act as a Cement, is formed a pod, having a resemblance to the pod of the peanut in shape, with a small aperture in the end in which pod the worm is found after the boring is finished, where he remains, secure from harm

until —

until the wings &c. are formed, having undergone the change the worm comes out the fly. I have taken the pods containing the worm out, and placed them under glass tumblers set in a room near a window, and they have come out the fly generally in about eight or ten days, sometimes less. The months when the fly comes forth, are July, August, & September, sometimes as early as June, and as late as October, (tho' not commonly so early or so late.) when they commence their work as stated at first.

The visible effect produced on the trees varys in proportion to the extent of the injury done in the bark at the root, as it frequently happens when the trees are neglected and a number of the worms are suffered to go on with their work that they completely girdle the the trees which of course dies, shewing before and after its death the usual signs, such as curled and Yellow leaves, which soon begin to wilt, and the branches to wither and die, which soon is the case with the whole tree — When the tree is but partly bored round as one fourth, one half, or even three fourths, it generally lives along for a while, sometimes several years, and bears fruit which in most cases ripens prematurely, the tree shewing evident signs of disease as before described, and frequently putting out weak and sickly shoots from the trunk and branches, which sometimes form thick clusters or bunches, and the tree dies, evidently from the effects of the injury done by the worm. (tho' some contend it dies of the Yellows which is produced by lice, to which opinion I cannot assent, not knowing of any facts to warrant such a conclusion.) But leaving the question for others to decide, it is known to almost every grower of Peach Trees, that the labour and care necessary to get the worms out of the trees after they get in, in order to prolong the life of the trees, is very great, and consequently, expensive, and as prevention is better than cure: (in this case at least.) The following remedy is proposed with entire confidence of success, and claimed as original, to prevent the attack of the fly, and thereby render the impossibility of the worms getting into the tree certain, which is as follows —

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Apply a bandage of sheet lead, around the tree to be protected at the surface of the ground, of the thickness of twenty four ounces to the square foot, or of a lesser thickness will answer the purpose, the width say from four, to six inches, which may be varied some in proportion to the size of the tree, and the state of the bark, the length to be cut according to the circumferance of the tree to be banded, allowing for the anticipated growth of the tree at the surface of the ground for several years, the ends of the band should be lapped accordingly, which as the tree increases in size the flexibility of the lead will allow the bandage to expand by the internal pressure caused by the growth of the tree (the ends being lapped sufficiently for the purpose) a band may be applied which will adapt itself to the growth of the tree for several years, even while the tree is increasing in size by its growth, and after the tree attains its full growth it may remain on for an indefinite term of time, without further attention, should the tree continue to live and bear fruit. —

the lower edge of the band should be placed one or two inches below the surface line of the ground, and the upper edge of the lead should be from two to four inches above the surface, which will allow of the earths being raised around the tree, or of the application of ashes, or other manures, as the wants of the tree may seem to require — the earth, manure, nor any other substance, having a tendency to soften the external bark of the tree, should not be raised above the upper edge of the lead, the object of the band being to protect that part of the bark which is made tender by the moisture of the earth &c. at and about the surface, above which the external bark of the peach tree is impervious to the attacks of the fly —

It is only necessary to fit the lead, particularly the upper edge, so as not to admit of the entrance of the fly, to deposit its eggs within the band. — There might be other materials used for bands, such as tin, Copper, Zinc &c. but there is none perhaps so good as Lead, on account of its flexibility, durability & cheapness. — raw hide, leather, India rubber &c. might be used, but —

but their use would not be economical on account of their liability to decay, and the labour and attention they would require to keep them in place to answer the desired purpose — The lead bands will extend themselves, after they are put on, by the lapped ends slipping outward as the tree increases in size, and the earth or materials put round the outside will give way, and adjust themselves to the internal pressure within, so that there could arise no disadvantage to the growth of the tree in consequence of the bandage of lead being on. —

The application of the bands would be equally advantageous and economical to seedling trees in Nurseries, and standard trees in Orchards, for Nursery trees very light sheet lead, like tea lead, would be most convenient and economical. and after they are set for standard trees, bands more proportionate to their increased size, and future growth might be substituted. —

The usual remedies heretofore recommended for the prevention, destruction, and cure for the injurious effects of the worms in Peach trees, such as hilling up the earth around the trees, putting ashes, Coal dust, Tobacco stems, Saltpetre and Salt, fish oil &c, around the roots of the trees, placing hoops around the trees filled with flax sheaves, Saw dust, Sea weed &c, with various other substances, (all of which have been recommended as remedies, by writers in Agricultural and other papers, published in different sections of the Country, within a few years past) altho they may answer valuable purposes as a manure for the tree and fruit, have as far as my observation has extended, proved almost if not entirely unsuccessful, as a remedy for the purposes for which they were recommended, as by hilling up the earth around the trees, putting ashes, Coal dust &c, around the roots, filled with the various materials recommended as a protection for the tree against the worms, only produces the effect to change the location or point of attack of the fly to make its deposit for the worm, to a place higher up on the tree, as such applications have a direct tendency to soften the outside or paper bark of the tree above the usual surface of the ground, as high up as the surface of the substances thus applied, by the moisture they retain and being in contact with the bark of the tree, while the other ingredients which are

used for their supposed offensive or destructive qualities to the fly or worm soon loose such pernicious qualities (if they possess them) by becoming neutralised, or dissolved by the action of the earth and moisture to which they are exposed,— which would not be the case with the lead bands, as they would retain no moisture at the top.—

The foregoing notes and the invention of the remedy proposed, are the results of the practical observations, and experience of the writer and inventer, without attempting to establish any new theory, in regard to the causes of the loss and decay of peach orchards other than — that by preventing the depredations of the worms most if not all of the supposed Causes and diseases which are said to occasion the destruction of Peach Trees would become extinct, with a very few exceptions, such as peculiar seasons, unusual frosts &c. for which other remedies than the foregoing may be suggested for the purpose of preventing if possible the loss of this valuable fruit, and for the preservation of the life and health of the tree.—

Respectfully Submitted by

Augt G. Millard

Warwick R.I. July 25th. 1844

To Hon. H. L. Ellsworth.
Commissioner of Patents.
Washington. D. C.

Peach Trees