

of the pest and advise methods of control. All of this goes to emphasize the necessity of investigating carefully, and as thoroughly as possible, using proper judgment of course, insects and their attacks upon vegetation, regardless of whether they are at the time injurious or not. It may be that, even at that very time, the insect is seriously injurious, but its injuries are of such an obscure nature as to be overlooked entirely or perhaps confused with those of some of the older and better known pests. Entomological investigations cannot be undertaken, carried through, and completed by contract, as the erection of buildings, construction of railways, or excavating of canals, but opportunities must be judiciously seized upon, and if the problem is followed faithfully wherever it may lead, one will be surprised at the number of instances like the foregoing, when the final outcome has more than justified the investigation.

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NOTES ON THE PUPATION OF THE HOUSE-FLY (*MUSCA DOMESTICA*) AND ITS MODE OF OVERWINTERING.\*

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The migratory habit of the larvæ of *Musca domestica* evidenced prior to pupation has been observed by most of the investigators who have studied the insect's life history, and these observations have been collected by Hutchison (1914). Levy and Tuck (1913) appear to be the first workers to call attention to the practical value of this habit in fly control, and Hutchison has extended the work along lines that will undoubtedly provide us with an additional means of control of no little value. The principle involved is the capturing of the mature larvæ leaving the manure to pupate, in accordance with their usual custom, either in the cooler outer portions of the piles or in the subjacent soil.

The migratory habit of the larva has also another interest, namely, its relation to the suppression of flies breeding in the usual type of insanitary privy and in latrines. While a few isolated observations have been made in India and elsewhere, I do not know of any exact record of the extent to which the larvæ migrate

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\* Contribution from the Entomological Branch, Department of Agriculture, Ottawa.  
March, 1915