

"Every week, whether there are insects or not, I have a number of braziers containing burning charcoal distributed through my houses. On each brazier is placed an old sauce-pan containing about a pint of tobacco juice of about the strength of 14°. This is quickly vaporized, and the atmosphere of the house is saturated with the nicotine-laden vapour, which becomes condensed on everything with which it comes in contact—leaves, bulbs, flowers, shelves, etc. When the contents of the sauce-pans are reduced to the consistency of a thick syrup, about a pint of water is added to each, and the vaporization goes on as before. I consider a pint of tobacco juice sufficient for a house of about 2,000 cubic feet. The smell is not so unpleasant as that from fumigation, and the tobacco juice can be used more conveniently than the leaves. Plants, no matter of what kind, do not suffer in the least, and the most delicate flowers are not in the slightest degree affected, but continue in bloom for their full period, without any alteration in their appearance. When the operation is completed, if the tongue be applied to a leaf, one can easily understand what has taken place from its very perceptible taste of tobacco. The process requires to be repeated in proportion to the extent to which a house is infested. It is not to be imagined that these troublesome guests are to be quite got rid of by a single operation. A new brood may be hatched on the following day, or some may not have been reached on the first day, so that the vaporization should be frequently carried on till the insects have entirely disappeared, and after that it should be repeated every week in order to prevent a fresh invasion."

In France, Dr. Lintner adds, tobacco juice of the strength required can be purchased at the tobacco factories for about fifteen cents a quart, so that the expense is very trifling. Where the juice cannot be readily bought, it may be prepared by boiling coarse tobacco leaves and stems, till the decoction is of the required strength.

THE HOP APHIS, (*Phorodon humuli*, Schrank.)

While the hop, like most other cultivated plants, is liable to the attacks of a great many insects, it is in this country specially injured by two very different creatures, the Hop Aphis or Plant-louse, and the Hop Snout-moth. The latter is referred to in another part of this Report by Mr. Fyles. Regarding the former, a most important point in its life-history has at last been cleared up. Till very recently it was not known exactly how or where the insect passed the winter, and consequently it was not possible to be quite sure what preventive measures were the best to adopt. Four years ago, Miss Ormerod, Consulting Entomologist to the Royal Agricultural Society of England, published in her annual Report on Injurious Insects, an account of her observations of the Hop Aphis, and stated the conclusions at which she had arrived. These are so important that I quote her own words: "(1) The first attack of Aphis to the hop begins in spring from *wingless females (depositing living young) which come up from the Hop-hills.* (2) The great attack, which usually occurs in the form of 'Fly' about the end of May, *comes on the wing from Damson and Sloe, as well as from Hop, and the Hop Aphis and the Damson-hop Aphis are very slight varieties of one species, and so similar in habits as regards injury to hop that for all practical purposes they may be considered one.*"

These observations, while they confirmed what had been stated by some few entomologists at different times, threw a flood of new light upon the life-history of the Hop-Aphis, and led to further investigations by other competent observers. In the November, 1888, number of "Insect Life," Dr. C. V. Riley, United States Entomologist, publishes a paper on this subject, in which he announces that "We have been able to say for the first time the past year, that we now know positively the full life-history" of the Hop Plant-louse, and states that the questions as to its migration from the Damson to the Hop, and its winter resting place, have now "been fully and thoroughly settled."

The following is his summary of the life-history of this insect: "Hibernating at the present season of the year (March), the little glossy, black, ovoid eggs of the species are found attached to the terminal twigs, and especially in the more or less protected

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