

appearance from the female, and are grown in hop yards at about the rate of six plants to an acre, for the purpose of fertilizing and maturing the hop blossoms.

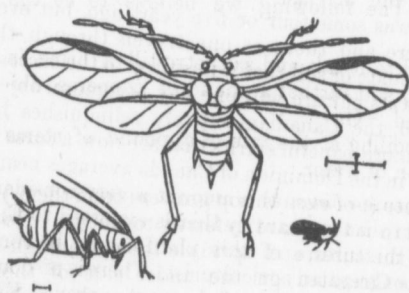
THE HOP APHIS (*Aphis humuli*, Curtis).

1. HEMIPTERA HOMOPTERA—APHIDÆ.

It would almost appear as if no catalogue affecting any particular plant could be complete without referring to some species of Aphis, or Plant-louse, so ubiquitous and destructive are these tiny creatures. We have already noticed in these reports* the particular species that infest the apple and the wheat, and have recounted the damage that they oftentimes inflict. But when we come to the Hop we find that the Aphis, or "Fly" as it is termed in England, is, *par excellence*, its greatest enemy, and that the profits of the grower depends very largely upon the presence or absence of the hordes of this minute foe. As Kirby and Spence so strongly state, "the hop-grower is wholly at the mercy of these insects; they are the barometer that indicates the rise and fall of his wealth, as well as of a very important branch of the revenue—the difference in the amount of the duty on hops (in England, being often as much as £200,000 per annum, more or less, in proportion as the fly prevails or the contrary." In this Province we have seen the produce of a field of many acres almost utterly ruined by this insect—the amount of hops produced being diminished more than one-half below the average, and the quality of that which was gathered very much impaired.

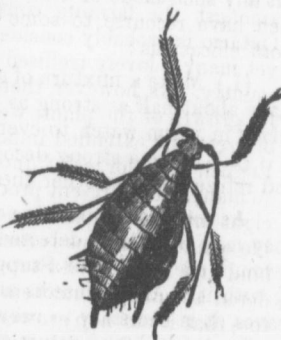
The Hop Aphis resembles very closely in size and appearance the species that infest many other plants. As we have already described similar species in these Reports (1st Report, p. 77; 2nd Report, p. 57), we need do no more than state that the enemy of the Hop is green in colour, and about one-tenth of an inch in length when fully grown. The accompanying illustrations display the shape and structure of the creature. Fig. 16

Fig. 16



represents a highly magnified winged male above; below it, on the right hand side, a male of the natural size, and on the left a magnified female. Fig. 17 represents a female on a very much larger scale. Notwithstanding the similarity in colour which exists between these

Fig. 17.



insects and the leaves and stems of the Hop-plant, their presence may be immediately detected by the blackish discolouration of the leaves below where they are at work. This is caused by the continual exudation from the insects of a sweetish fluid called "honeydew," which is emitted from the two processes that project from each side of the extremity of the abdomen. As we have remarked on a previous occasion, many insects, and especially ants, are very fond of feeding upon this sweet substance; the latter even go so far as to perform upon the Aphis an operation analogous to that of milking a cow, for the purpose of obtaining this sweet fluid. And not content with this, some species of ants make a property of these Aphis cows, jealously guarding them, and using every means to keep them to themselves. As related by Kirby and Spence: "Sometimes they seem to claim a right to the Aphides that inhabit the branches of a tree or the stalks of a plant and if stranger ants attempt to share their treasure with them, they endeavour to drive them away, and may be seen running about in a great bustle, and exhibiting

* First Annual Report—Insects affecting the apple, p. 77; Second do—Insects affecting the wheat crops, p. 57.

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