Observations on the Ant Cricket

Myrmecophila oregonensis Bruner

By GEOFFREY BEALL.

IN THE vicinity of Victoria, especially around Langford and Metchosin, there is an open conifer forest on low-lying hills. The whole place is very dry and altogether admirably suited to the requirements of the mound-ant, **Formica rufa** Linn. subspecies, **obscuripes** Forel. The nests are, of course, piles of conifer needles, twigs, grass, bits of dead insects, which are generally piled against or around an old small stump or a piece of wood. They average about 10 inches high and several such mounds may make up one big colony. In all directions run definite and characteristic roadways out, either for foraging or for communicating with other colonies. Often a route will run along the top of a fallen piece of wood such as a bough or a small tree of perhaps three inches diameter.

Around these mounds may be found the little cricket, **Myrmecophila oregonensis** Bruner. (I am greatly indebted to Mr. Buckell of the Dominion Entomological Laboratory at Vernon for the identification of both ant and cricket.) The adult cricket is some 2 to 3 mm. long, brown and extremely nimble, as are all stages of development. As was seen in observation cage, all move with a rapid scurrying action, casting their long antennae, held parallel, from side to side, turn in a flash in any direction and leap, say 10 cm. Because of this activity no ant could "lay mandibles" on them if she wanted to.

The cricket occurs to some extent in the loose rubble on the edges of the nest, near the surface. It occurs much more frequently under loose stones, or wood, or even dry cow-dung, nearby, and in the greatest numbers along the above-mentioned ant routes. The cricket can be seen under almost any solid object over which the ant route passes, especially under the fallen sticks along which the ants travel, as over viaducts. One can get hundreds of them by banging such a piece of wood over a large piece of canvas and by scooping up the soil from under the stick, in every crevice of which soil the crickets will be found. They take refuge under the debris on the canvas or under the folds, so that a dozen will be found under every chip of wood. A much frequented ant bridge may be made to yield as many as 500 crickets by working over it carefully. The attachment of the crickets to the routes may be emphasized by comparing the number of them found under two parellel and similar sticks—the one used by ants, the other not.

The ant viaduct would yield hundreds, the unused stick, perhaps half a dozen. Sticks near the mounds have more crickets than those distant, and it seems that more of the crickets are under the end towards the mound. Besides skulking along the routes, adults were twice seen travelling along these highways with the ants in broad daylight. This occurrence is all the more striking when it is considered that **M. oregonsis** is generally so fond of hiding.

During the summer and fall past, a colony of **F. rufa** was kept in a modified Janet cage for exhibition purposes. In a glass-covered tray of three compartments, there was a central section covered with orange glass, the two outer with colourless glass. The ants made themselves at home under the orange glass. During the last week in August rubble was added which contained some five hundred crickets, mostly in young instars, though there were about fifty adults. The cage was under continuous observation for ten hours a day for three weeks and under frequent observation for two months beyond that time, but few nymphs were seen to issue from the rubble in the central chamber where they had taken refuge, while the adults came out freely into the side chambers under the clear glass. It was easy to watch their behaviour towards the ants, whom they would approach from behind (rarely from in front) and, starting from the tip of the abdomen, would "lick" the ant, working carefully over every part, including the legs. Especially did they "lick" dying ants and those very much preoccupied ones that were feeding from the honey or drinking from the sponges. Incidentally, in all that time no cricket was ever seen to touch either water or syrup that was supplied the ants. At times the cricket would rest, but it never settled down right among the ants, rather it would perch on pieces of sponge or on the heads of carpet tacks in the cage. During the period of observation, i.e., late summer and early fall, the crickets were seldom seen to react towards one another. Dead ones were never seen on the rubbish-heaps, although some were drowned in the water which condensed on the glass of the cage.

In summary of observation of **M. oregonensis** it may be said that this cricket can be readily found in the immediate neighbourhood of the nests of **F. rufa**, whose travel-routes it particularly frequents; nymphs are strongly negatively heliotropic, and adults markedly less so; the crickets seem to subsist on some ant secretion which they "lick" off their hosts with seemingly all due precaution.

While searching ant mounds for these crickets, it was noticed the surface, for a depth of one inch, to have large numbers of a small caterpillar in it. The biggest seen were about 12 mm. long, although at the same time one could find them down to 3 mm. They are brown and have bunches of bristles for each segment. When the rubble was dug

up and spread out so that they were on the surface they burrowed back into it. About 50 of these were put into the exhibition cage, where they immediately went into the rubble. The ants did not harm them.

While searching in the neighbourhood of a certain mound for **F. rufa** a rather peculiar situation was met with, at the beginning of September. On lifting up a piece of a stick close to a mound there were found beneath it some of the mound ants, one or two crickets and about a dozen small white leaf-hoppers. Three were taken. Unfortunately, there was little time to spare on these observations so that no more cases of this fraternizing were seen, but it does seem possible that this was connected with the honey-dew collecting habits of the mound-ant.

Injury to Primulas from Vine Weevil

By W. B. ANDERSON, *Victoria.*

THE paper I have prepared for this meeting may seem, perhaps, to be one better suited to a gardeners' meeting than to one of entomologists, but if, as it appears to me, that entomology is to be of assistance to the horticulturist, then I hope that these remarks on my practical experience of combatting a serious pest will be of some use to plant growers. Although the European Vine Weevil, **Brachyrinus sulcatus** (Fabricius), has long been known as an enemy of the strawberry grower in this province, not many complaints have yet been made by gardeners of its attacking other plants at all seriously.

The genus Primula is one most seriously affected by this pest in some places on the coast, and the probable reason for its not having been more complained of is, I think, due in most cases to the presence of the pest being unsuspected. The fact of some plants in a Primula bed dying off at about the flowering season, is mostly attributed to a rotting of the roots during the wet weather, if the weevil is not known as an enemy by the gardener, and, in, consequence, its presence is unsuspected.

My attention was first called to the insect's depredations among Primulas some years ago by a Victoria gardener's complaint to me that something was rotting off his bed of fine English Primula hybrids. He had noted some larvae in the soil under the plants affected, but could not quite satisfy himself as to this being the cause of mortality. Upon examining the bed, many larvae were found, in various stages of devel-