

early tulips and should be kept back as long as possible. As about half of the bulbs do not bloom they should be planted rather thick in large pans, pots or boxes. The double tulips are also very satisfactory for forcing in the house and succeed better than outside. Some of the best are: Murillo, Couronne d'or and Imperator rubrorum. Murillos when well grown in the house and fully expanded have measured nearly six inches in diameter. If the house is not too warm the flowers of double tulips will last from ten days to two weeks.

The perennial border is often bare looking

after the spring bulbs have done blooming, but we find that the border may be kept bright by growing Iceland poppy, the seed of which should be sown broadcast. This beautiful poppy makes a fine show of colour until other flowers begin to bloom. They also take away the patchy appearance of a border which has but a few clumps of perennials and fill up the gap until the annuals begin to flower.

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NOTES FROM THE BIOLOGICAL DEPARTMENT OF THE ONTARIO AGRICULTURAL COLLEGE.—IV.

THE BUFFALO TREE-HOPPER.

FRUIT-GROWERS during the spring pruning of their orchards frequently come across limbs disfigured with oval-shaped scars (Fig. A) which are decidedly injurious to the tree. Frequently the affected limbs break off during strong winds, and as the grubs of borers are often found in these broken limbs, the inference is too often made that the borers are the mischief-makers. The real cause of the scars, however, is a greenish bug about one-third of an inch in length, triangular in shape, and with some slight resemblance to a buffalo, hence the name—*Buffalo Tree-Hopper*. (Figs. C and D).

In late summer and autumn, it is often possible to catch these tree-hoppers, or to watch them at work depositing their eggs in slits on the twigs. My illustration (Fig. B) shows the slits, not at the time of deposition, but in the spring when the scars have become quite large and unsightly.

The females deposit their eggs on young wood in late summer, preferring but little the two or three years old growths on young trees to those on old trees. The curved slits are made close to each other, enclosing a portion of bark, and in each of these slits six or more eggs are laid. The purpose of the double slit is apparent, for if only one were made the eggs deposited in it would almost certainly be damaged by the subsequent rapid healing process. With the two slits, arranged as they are, the enclosed portion of bark is killed, and the eggs are preserved from injury by any subsequent growth.

The eggs remain over winter in the slits and hatch about the first of June. During the winter and following seasons the slits gradually widen, and the scar becomes oval in outline on account of the dropping away of the enclosed central piece of bark.

It would appear that the Buffalo Tree-Hopper does not confine its attentions to apple and pear, but will produce scars on