All the other consignments of these insects which were received proved to be the cater-They appeared in large numbers pillars of the clover cut-worm (Mamestra trifolii). during the month of August and did considerable damage, particularly in fields of peas, turnips and mangold wurtzel. This insect seldom appears in Canada as a serious pest, nor from the condition of the consignments received by me do I anticipate that we shall suffer from their attacks again next year. Of five lots of caterpillars sent from different localities, nearly every specimen was found to be parasitised. lot of over a dozen caterpillars only gave, instead of moths, specimens of Ophion purgatum, an active and beneficial Ichneumon fly, from the other larvæ were reared Tachina flies. A fact which has frequently been observed with regard to these caterpillars, and one which gives great comfort, is that whenever they increase largely in numbers they are invariably checked by the appearance of friendly parasitic insects. It must be remembered that all insects are not injurious, but on the other hand that many are very beneficial, preying upon and destroying injurious kinds. These belong to different natural orders. Amongst the Hymenoptera we find the Ichneumon flies. The female is, as a rule, provided with a long slender ovipositor, by means of which she inserts her eggs beneath the skin of her victim, or, as in the case of our largest species Thalessa lunator, which has an ovipositor between four and five inches in length, pushes it into the burrow of the woodboring host. The eggs of some are laid upon the outside of the skin and not inserted beneath it. These parasites are some of them as Thalessa external feeders lying alongside of their hosts, they pierce through their skins and suck out the juices, some, and probably most, as the grub of the Ophion above-mentioned, after hatching, lie inside the cavity of the body of the caterpillar, growing with it and feeding upon its blood, but avoiding all vital portions. When full-grown they either eat their way out and pupate in the ground or complete their changes inside the dead caterpillar. Of the Diptera or two-winged flies, there are several species of Tachina flies, which closely resemble our common house flies. These lay their eggs on the surface of the skin of the caterpillar, to which they adhere firmly. When the young maggot hatches, it eats its way through the skin into the body of its host and thrives at its expense. In addition to the above there is a class of parasitic fungi which attacks caterpillars when they appear in large numbers. One species Entomophthora virescens, Thaxter, has done good service in this district by keeping down the larve of Agrotis fennica. The work of this beneficial fungus was detected again this year.

The other attack which I have mentioned as having been of exceptional severity during the past season was that of various kinds of locusts. These are generally incorrectly spoken of as grasshoppers. Early in June the fields in the neighbourhood of Ottawa were found to be swarming with myriads of tiny locusts. Later in the season these developed and committed serious depredations upon almost every green plant of a few feet in height. Their numbers were so great that ordinary remedies were useless. In an effort to protect some special plants a mixture of bran, sugar and arsenic, as sugested by Prof. Riley, was used and certainly killed large numbers, but the dead bodies and every green thing near them were soon demolished by the survivors. Mechanical apparatus for catching and destroying them would have been the only way to deal with them after they attained the perfect form. If, however, the hay fields had been cut about a fortnight earlier, I believe enormous numbers would have been destroyed. Hay was cut about the first of July in this district, and just at that time the first perfect specimens of our commonest species Melanoplus femur-rubrum (fig. 7), and M. atlanis



were observed. Had the hay been cut about the 20th June, as it might have been without injury to the crop, the greater part of the first brood must have perished. In a crop like hay, which covers the ground thickly, there is very little active vegetation at the roots, but a great deal of moisture is kept from evaporating. As soon as the crop is cut all that is left on

the fields above the surface is at once dried up by the action of the sun and air and the plant does not shoot up again for some weeks. In very wet seasons, of course, this takes place sooner. Last July, and the end of June were excessively hot and

dry in this secti possibly have su crops. By wait fly, and were endone in their earnot grow gradus moult. Locusts and the perfect second moult, he succeeding moult time and become When the last a time comes, from in length. In a place to place u

An attack of the society at some years that also called "K of timothy (Ph examination the this injury have idea is that it i lower part of th suctorial insect; wheat-stem mag appears to me meadows. This treatment will is very similar in like it, has stead however, that a remedies will be

The many receiving specia.
The apple been destructive

The injurie much reduced by or cutting the fi

The Colora easy and (when Paris green for

I must n
works of excep
by Dr. A. S. Pa
withstanding, as
importance of E
price and conven
great want whic
nence was some
the use of begin
volumes. Copio
as well as referen
section treating