

"Probably no person in the United States has studied the Curculio and its habits more carefully than William B. Ransom. For fifteen years he has been trying newspaper experiments unsuccessfully. Last year, when bugging, he discovered that all the Curculios dropped within two or three feet of the roots of the peach tree, and on examination found the little Turk sheltered on the trunk and in the holes near the base and on the under side of the principal limbs.

"For the last fortnight Mr. Ransom has spent most all the hours of the day lying on the ground in his orchard, patiently watching and waiting for the first Curculio to show himself. On the fourth of May a few single Curculios were discovered, but not a single pair; on the 5th a few pair were found coupling. Constant, careful observation has led Mr. Ransom to these conclusions:

"In the fall the Curculios seek a warm and safe shelter to hibernate; this is either the ground, or leaves, stumps, logs, old fences, woods, or other congenial places of concealment. The first warm day in spring that starts vegetable life, calls the Curculio forth, and it proceeds to its feeding and breeding ground.

"They walk very fast, and they fly and feed generally at night, eating the young and tender leaves. The first warm days this year they fed, then the weather fell cold, and for a week Mr. Ransom found no indication of their feeding. Since Friday night, the 13th, the weather being warm, the Curculios have been feeding. They scatter all over the tree to feed, and come down towards morning, and as late as 7 a.m., to hide.

"They crawl on cold days and nights, and hide under the shelter of the trunk of the tree, waiting to feed when the nights become sufficiently warm. The Curculio uses the green peach only to hold its egg. It sometimes eats the ripe peach, also blackberries, quinces, and other fruits.

"Some idea of the quantity to be taken from a single tree may be found from the following: Mr. Ransom states that on the 14th he took 25; on the 15th, in the morning, 50; in the evening about sundown, 15, and on the 16th, 60 were killed on the same tree, and of these 11 were taken in a cluster, under a chip two by three inches.

J. E. CHAMBERLAIN,
Secretary St. Joseph Fruit Growers' Association and editor St. Joseph Herald."

ENTOMOLOGICAL SPECIMENS may be sent for identification or for information respecting history and habits, to the office of the CANADA FARMER, or direct to the Entomological Editor, Rev. C. J. S. Bethune, Credit, Ontario. The postage should be prepaid. The specimens should be sent in a pasteboard or other box, not loose, but packed with cotton wool, or some similar material. The name and address of the sender should also accompany the package, not necessarily for publication, but as an evidence of good faith, and that we may know where to apply for further information, if required.

Entomological Queries and Replies.

POTATO BEETLES.—James Taylor, Kilmartin, Ont.—The insects, of which you sent us specimens, and which you say are destroying the potato plants in your township, are the well-known "Three-lined Potato Beetles." (*Lema trilineata*, Oliv.) They may be at once recognized by the three black lines on the pale yellow wing-covers. Their larvæ are very disgusting in appearance, being covered with their own excrement, and bearing a considerable resemblance to slimy slugs. They may be destroyed by (1) picking off and killing the beetles, (2) dusting the larvæ with lime, ashes, or soot; (3) brushing off the larvæ from the plants to the ground when its surface is dry and hot.

SPECIMEN WANTED.—B. Pearson, Aurora, Ont.—You either omitted to enclose the specimen referred to in your letter, or else it escaped from insufficient packing—at any rate it has failed to reach us. Please send another, and we shall probably be able to identify it for you; and be careful to pack it in a pasteboard or other box that will bear knocking about in the mail-bags.

ENTOMOLOGICAL APPARATUS.—W. Munro, Embro, Ont. The Secretary of the Entomological Society (Rev. C. J. S. Bethune, Credit, Ont.) can supply you with the best German insect pins imported by the Society, at the rate of 50 cents per packet of 500. There are six sizes, of different degrees of fineness. A set of 500 each of Nos. 1 to 4, and 250 each of Nos. 5 and 6, will be sent free by post for \$2 65. Sheet cork, imported from England by the Society, is sold for 16 cents per square foot; six square feet free by post for \$1 10. Cabinets can be made of all sizes, materials and descriptions, and of course vary very much in price. An estimate could be obtained from any good cabinet-maker.

NAMES OF BUTTERFLIES.—*Ibid*—If you send to the Editor of this department (address as above) a specimen of each of your butterflies, carefully packed in a box, and free of charges, we will return them to you with the names attached; or if you send us specimens of your duplicates with a number attached to each, and corresponding numbers affixed to the specimens you retain, we will give you a list of the names, and thus save you the charges on the return of the box.

There are only four species of Canadian butterflies that are identical with British species, namely, *Pieris rapæ*, *Panæssa antiope*, *P. atalanta*, and *Pyrausis cardui*.

The best books you can get on the subject are Harris' Injurious Insects (\$6 with coloured plates, \$4 plain plates), and Packard's Guide to the Study of Insects (\$5 in parts unbound, \$6 bound in cloth). We can send you these works free of carriage at these prices, or you can obtain them through the leading Toronto booksellers.

LUNA MOTH.—*Ibid*—The large green moth with tails to the hind wings, of which you gave a very good description in your note, is the beautiful Luna Emperor Moth (*S. luna*, Drury), the most lovely of all our night-flying insects.

REARING BUTTERFLIES AND MOTHS.—C. Fletcher, Salford, Ont.—It is difficult to tell you in a few lines how to rear butterflies and moths, and we have not space at this time of year for a long article on the subject. We shall endeavour, however, to answer your question. By beating the branches of trees and shrubs over an inverted umbrella, you can obtain plenty of caterpillars to experiment upon. Place them, with some of the leaves upon which they were feeding, in any convenient box—the larger-sized chip boxes answer very well for most species—and supply them with fresh food every day, removing the old, and being especially careful not to handle them if it can be avoided; when they have done feeding, and formed a chrysalis or cocoon, they can be removed into a gauze covered box, prior to the emergence of the perfect winged insect. All sorts of devices are used by different entomologists for breeding insects, some using elaborate cages and others any kind of box that comes to hand; the description of box is not of so much importance as attention to feeding and cleanliness. If the specimens are enclosed in boxes large enough, their food may be kept fresh for a considerable time by sticking the end of a twig of the food plant in a phial of water or a juicy potato. Try a few common caterpillars first, and you will soon learn how to manage them better than by following any number of printed directions. The best work that we know of upon this subject is Dr. Knagg's "Lepidopterist's Guide," published in London, England, by Van Voorst, at 1s. 6d. You can, of course, capture many fine specimens for your collection by means of an ordinary butterfly net, and the exercise of a little patience and perseverance.

PLUM CURCULIO.—J. P. K., Widder, Ont.—The specimens sent by you, taken from your plum trees, did not include the notorious Curculio. The pale brown beetle is a specimen of *Dendroides Canadensis*, which is chiefly remarkable for its curiously branched antennæ. It is a harmless insect, living in the larva state in the form of a flat grub under the bark of trees. The steel-blue insect is a sand wasp, (*Pelopæus ceruleus*, Lin.) and may be considered rather beneficial than otherwise, as it stores up insects as food for its young. The small black insect, with transparent wings, is another species of wasp. You will find figures of the plum curculio in the June number of the CANADA FARMER, which can be procured at this office for ten cents. You can breed specimens by keeping the stung plums that have fallen to the ground in a jar, or other vessel, with a few inches of earth in the bottom.