

into the pupa state, (Fig 68 a), from which in about ten days afterwards the perfect beetle makes its appearance, being just about one month from the date of hatching and five weeks after the laying of the eggs. According to Dr. Shimer, the beetle "in about seven days after its maturity begins to pair, and at about the fourteenth day on an average begins to lay its eggs, thus in fifty days after the egg is laid the offspring begins to propagate." The same gentleman also states as some of the results of a most carefully conducted series of experiments that "from an equal number of males and females, well fed and made as comfortable as possible in confinement, I obtained an average of 719 eggs to each female; but in the fresh pure air, sunlight and freedom of nature under propitious circumstances, I have no doubt of its exceeding a thousand. They laid some eggs every day for forty days, commencing July 15th and ending on the 1st September. The smallest average was in the first part of the time, being $7\frac{1}{2}$ eggs per day to each female; the greatest average was about the middle of the time 75 eggs, the last day they averaged $12\frac{1}{2}$ eggs." Mr. Walsh in the *American Entomologist* states "That there are about three broods of larvæ every year in North Illinois and Central Missouri, each of which goes under ground to pass into the pupa state, the two first broods coming out of the ground in the beetle state about ten or twelve days afterwards, while the last one stays under ground all winter and only emerges in the beetle state in the following spring, just in time to lay its eggs upon the young potato leaves." We thus see that at almost any period during the summer months the insect can be found in all its stages. Assuming Dr. Shimer's average of 700 eggs for each female and that there are three broods per annum, and also assuming that one-third of the eggs produce fertile females, we might thus obtain in the course of one season the enormous number of thirty-eight million three hundred and thirty thousand larvæ as the produce of one single pair of beetles. Bearing in mind what we have stated about the voracity of the larva, we may well tremble for our potato crops when the Colorado beetle gets fairly established among us. This beetle, like many noxious insects, will be more numerous and do more damage some years than others, owing to various circumstances, such as propitious weather, and the lack or cessation of the attacks of its various insect enemies, but we may as well make up our minds to seeing this obtrusive stranger permanently located in Ontario whether we like it or not. Mr. Walsh wrote "That we shall have the Colorado Bug, in smaller or larger numbers, always among us, I have no more doubt, than that we shall have always more or less thunderstorms in the valley of the Mississippi."

It now remains for us to see how we are going to fight this prolific foe. In the first place, kind Mother Nature has as usual come to the rescue, and we are able to enumerate some 22 kinds of insects which prey upon the Colorado Potato Beetle, and in all probability the list will increase as our investigations become more perfect. We give below a tabular list of these insects.

COLEOPTERA.

1. *Tetracha virginica*, Hope.—Not taken in Ontario.
2. *Passimachus elongatus*, Lec.— " " yet.
3. *Calosoma calidum*, Fabr.—Common in Ontario.
4. *Harpalus caliginosus*, Say.— " "
5. *Hippodamia maculata*, Geer.— " "
6. " *13 punctata*, Linn.— " "
7. " *convergens*, Guerin.—Not common in Ontario.
8. *Coccinella*, 9 *notata*, Herbst.—Very common in Ontario.
9. *Mysia*, 13 *punctata*, Oliv.—Not uncommon in Ontario.
10. *Epicauta cinerea*, Fabr.— " "
11. " *vittata*, Fabr.—Common in Ontario.
12. *Lebia grandis*, Hentz.—Rare in Ontario.
13. *Philonthus*, Sp. undetermined.

HEMIPTERA.

14. *Reduvius raptatorius*, Say.—Taken in Ontario.
15. *Arma spinosa*, Dallas.— " "
16. *Harpactor cinctus*, Fabr.— " "
17. *Coreus tristis*, De Geer.—Common in Ontario.
18. *Perillus circumcinctus*, Say.—Taken in Ontario.
19. *Stiretrus fimbriatus*, Say.— " "

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