

usual. While an occasional thaw came in direct contact with the surface, thus providing a thawing and freezing condition known to be detrimental to insect life, there is no doubt that several species suffered in consequence, but the Colorado Potato Beetle, as a rule, burrows sufficiently deeply to escape the thawing effect, hence frost alone was to be reckoned with.

The result of this lack of snow was very marked the following May. Beetles which had gone into winter quarters in a healthy condition were found huddled together in a state of death, not a single living example being located in the more exposed situations, though later in the season odd individuals turned up on potato plants forming the nucleus for future generations. The country was by no means all affected in the same way: some parts had a light covering, others a foot or more. Consequently the amount of snow necessary for protection could be ascertained with reasonable accuracy. As was mentioned above, complete lack of snow, or less than three inches, did not afford sufficient covering for the beetles. The few survivors having probably sought shelter beneath some straw or brush pile. Where there was a depth of snow amounting to from four to six inches the survivors were considerably increased. At eight inches about half the beetles survived, while a foot or more of snow apparently produced complete immunity from frost.

In the vicinity of the Entomological Laboratory at Treesbank very few beetles escaped, which proved a great boon to potato growers. The effect of this winter killing is still very marked (1916), less than one per cent. of the plants being infected. Near Winnipeg, on the other hand, where the snow fall was ample no mortality was noticeable among the beetles, and they have continued to be a serious pest there.

From the above account it is evident that snow plays an important part in the preservation of animal life, it also saves many a garden plant from destruction. Under normal conditions it will continue to afford protection to the Colorado Potato Beetle, but we can at least see that there will be years of severe check, like the winter of 1914-15. While there is every reason to believe that those portions of the country where snowfall is light will never prove a prolific breeding ground for that insect.