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Fragments in the Life-habits of Manitoba Insects. By Norman Criddle, dominion entomological laboratory, Treesbank, Man.

Field work such as is carried on by the staff at an entomological laboratory naturally presents many opportunities for insect studies apart from the major problems for which the laboratories were primarily established. Thus the odd hours when more important matters are temporarily absent, or the less frequent occasions provided by the stops between trains, present opportunities for numerous minor studies resulting in the accumulation of various more or less disjointed notes which under ordinary circumstances remain unpublished. As such notes might well prove of interest to others, I have taken advantage of the Editor's request for an article to bring a few of them together under the above heading.

Pœcilopsis (Apochiema) rachelæ Hlst.

This moth has usually been considered rare but in reality is probably more numerous than is generally supposed. It appears quite early in the spring at the time when the first willows are flowering, though I have never observed it actually resting upon the flowers. It becomes active at the time when the beauties of sunset are darkening into twilight, and for that reason we christened it "the Twilight Moth." At that time the male moths may be seen flying in a jerky, up and down flight not unlike that of the buck moth (Hemileuca) and if we watch carefully, the hovering of the male over a certain spot will occasionally reveal the wingless female. The latter, however, is very difficult to find, and more often than not its discovery is due to accident rather than to search. The females have been found resting upon the ground, on the trunks of trees, or on the smaller twigs of shrubs such as willows. Aspen poplar appear to harbour them most frequently, possibly because the moth shows a wonderful colour resemblance to the bark. Willows, too, are often chosen for resting places, and here again the little bundle of fluff, of which the female moth reminds one, is very like a pussy willow.

The life-history of Apochiema rachelæ was described in the Canadian Entomologist by Mr. Arthur Gibson, Vol. XLV, No. 12, 1913, but the egg-laying habits, of which the strange ovipositor had occasioned considerable speculation, remained in some doubt at the time, and the observations which eventually filled the gaps have remained unpublished since 1915. In that year a female Apochiema was found running actively along the ground in broad daylight on April 13, having probably been disturbed by the building operations taking place close at hand. She was placed in a cage in which a goodly number of twigs, rotten wood, sods and other objects were added for ovipositing purposes. During the day time she remained quiet, but as the shades of evening approached she became active and was used to lure males within reach. Later it became evident that she was seeking a suitable situation for her eggs, and as she showed