

to it. When fresh the whole mass is soft and moist, but it soon acquires a firmer consistency. It is often as long as the abdomen, and usually lies in a curved or slanting position. The eggs which compose this mass are laid side by side to the number of from 30 to 100 according to the size of the mass."

Prof. Thomas states that he has obtained the eggs of *Caloptenus femur-rubrum* in rotten wood in which they were placed without any apparent regularity and without being connected by any glutinous secretion.

The sounds made by locusts are produced in two ways, first by rasping the hind thighs up and down on the wing-covers, and second by snapping together the edges of the wings and wing-covers during flight.

Our Canadian locusts fall into two sub-families, *Acridinae* and *Tettiginæ*. To the first belong all those species in which the pronotum (upper surface of thorax) extends only to the base of the wing-covers. This group contains the greater number of our species. To the second belongs a small group of species in which the wing-covers are aborted, appearing as small pads, while the pronotum extends as far as, or past, the extremity of the abdomen.

As regards the time of appearance of our locusts, there is a succession of species from early spring until the fall. As soon as the snow has disappeared from the sunny slopes and grassy banks, several kinds of little locusts may be observed. These are the Grouse-locusts (*Tettix* and *Tettigidea*). They are compactly formed, the body being broadest between the middle pair of legs, tapering gradually to a point behind, the head is very small and the legs are rather short. As already stated, the wing-covers are merely little scales, the wings being folded beneath the extended thorax. The species are all small, measuring about half an inch in length. They pass through their transformations during the latter part of summer and fall, hibernating in the imago or perfect state.

About the end of May and during the month of June a species of locust may often be observed flying with a rustling sound. This is *Tragocephala infuscata*, Harr. There are two forms or varieties. The typical *infuscata* being dusky brown, the wing-covers faintly spotted with brown, wings transparent, pale greenish-yellow next the body, with a large dusky cloud near the hind margin, and a black line near the front margin; length about three-quarters of an inch. The variety *viridi-fasciata* is almost wholly green and is slightly larger; it has been described as a distinct species, but as it occurs in the same localities and at the same season it is probably merely a variety of the same species. They hibernates as larvæ, changing to pupæ early in spring, attaining the perfect state about the end of May and disappearing early in July. Dr. Harris states that they "are sometimes very troublesome in gardens, living upon the leaves of vegetables and flowers, and attacking the buds and half-expanded petals."

As *infuscata* dies out, its place is filled by swarms of *Camnula pellucida*, a small locust very abundant in dry pastures during midsummer. General colour ash-brown, face reddish brown, a dark spot behind the eye and just touching it, and another on the side of thorax, wing-covers brown, marked with yellow lines and dark spots, wings colourless, with black veins. The female measures about an inch in length, the male a little less. The flight of this species is noiseless, extending about thirty or forty feet.

During August and September the fields fairly swarm with locusts, prominent among them being the large species that fly with a crackling or snapping noise. Many of these insects have considerable command of themselves while on the wing, being able to change the direction of their flight at will. The wings are generally brightly colored, reminding us of the lepidopterous genus *Catocala*.

Edipoda verruculata is ash-brown varied with dusky brown, wings yellow at base with a black band.

Edipoda sordida flies with a rustling noise exactly like the species of *Tragocephala*. It is dusky brown, head and thorax varied with patches of lighter and darker shades, wing-covers dark brown with two light bands on the middle portion. Wings pale greenish yellow on the inner half, remainder smoky brown. *Edipoda carolina* is our largest species, the female measuring from 1.5 to 1.75 inches. It is of a dull ash-brown colour, sprinkled with small dusky spots, wings deep black, except the margin, which is pale yellow. When alarmed it flies with a muffled, rustling noise.

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