THE CANADIAN ENTOMOLOGIST.

aspect, suffused red and black ; thoracic segments normal ; legs comparatively large ; tarsal joints two, the distal twice as long as the basal, bearing two large claws ; distal end of tibia bearing a semicircle of stout long spines beneath ; femur ochreous beneath ; beak long, 3-jointed, reaching to 4th abdominal segment, black marked with ochreous; abdomen longer than head and thorax combined, broad at base, tapering, 9-jointed, the tergites extending well beneath to the ventrum, and each ending in a leaf-like plate, coloured black and ochreous (two terminal ones black), forming a broad channel along the median line, the bed of which is formed by the sternites ; 3rd sternite bearing a peculiar nipple-like red fleshy process, hidden by the overlapping tergites, minute, analogous to that in the locusts (Acridide) between the bases of the cephalic coxæ. Length, full-grown, 6.25 mm.

After a moult the nymphs are softer and pale, the thorax and head lemon-yellow, the abdomen dark along the mesero-, yellow at the laterocephalic angles and at tip; reddish beneath and along the sides. Eyes black, annulate. Legs and beak pale yellow, the latter with a median line of red. The normal colours are acquired in about an hour and a half.

Pupa (5th stage).—General shape and colour of the preceding stages. Body pale ochreous yellow, mottled on head, thorax and wing-pads with more or less diffuse brown; tip of abdomen verging to black; eyes red, with some black; antennæ black, glabrous; legs concolorous with head and thorax. General colour varies from pale ochreous brown to brownishblack with pale mottled streaks. Underneath ochreous, with red on sides of abdominal segments and black down the median line. Head distinctly striate on ventral and lateral aspect. Wing-pads not large, but easily noticeable; process between abdominal tergites on ventrum absent. Length 6.25-8 mm.

Adult.—June 11th to 21st, adults found and watched continuously, June 22nd, found adults crawling slowly about on the branches, with a movement similar to that of the nymphs; found at rest generally where the young nymphs locate; not easily disturbed, and rather sluggish, but when touched they jump awkwardly to some distance, making a sound similar to that of a steel spring when suddenly loosened; the jump is made with much force. They are easily observed and seem to spend their whole time in feeding, remaining quietly in a position similar to that of the young nymphs. When once settled they very seidom move, but remain quiet like a piece of the tree itself; the only evidence of life is given by the forcible ejection of small, colourless, tasteless drops of

47