I have observed the adults performing in this manner in Fall Creek and Coy Glen here at Ithaca and in the Salmon River at Truro, N. S. Guided by the activities of the adults I was not long in finding the eggs. They are laid in masses on the under side of stones, usually in the swiftest water. I have found these egg masses in shallow streams and also in rivers where the water was several feet deep, the current often so swift as to render footing difficult. The females when engaged in egg laying are very sluggish and never attempt to escape. One may easily observe the egg-laying process if he is careful to remove the stone on which the eggs are being deposited. Egg laying was common at Ithaca on June 25, 1911, at Truro, N. S. on July 14, 1913.

The eggs are deposited in a single, irregular layer. They are placed closely beside one another, often forming a layer of considerable extent (Fig. 2). At first the eggs are bright orange in colour, soon turning lemon yellow. They are firmly held together and to the stone by a tough, hyaline substance. In examining an egg mass removed from a stone, each egg is seen to be placed in the centre of a gelatinous envelope, hexagonal in outline. A layer of lemon-yellow eggs, each egg placed in the centre of its gelatinous envelope, presents a rather beautiful appearance, (fig. 1). The eggs are practically spherical in shape, measuring .18 mm. to .2 mm. in diameter. Some eggs may be a little larger, others smaller, but the above measurements represent the average size. The eggs are perfectly smooth without markings of any kind.

I was not able to rear the larvæ from the eggs nor study in detail their natural history. It would undoubtably be of considerable interest for any one to study the form of the larva at hatching and what changes it undergoes during its larval existance. No one I believe has examined the stomach contents and nowhere have I found mention of its feeding habits. I did not determine the time between egg laying and the hatching of the larva. Judging from observations, the life-cycle lasts slightly less than a year,—egg-laying taking place during the latter part of June and July, the larvae reaching maturity the following season.

In the references to this species in literature I have found but one note on the pupa. Hubbard in the American Entomologist for 1880, p. 73, speaks of the larva leaving the water and