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accommodating provision, which is so often most beautifully illustrated in the habits of insects? <sup>c</sup>

Denmark Hill.

G. MOORE.

19. *Metamorphosis of Ephemera*.—On a fine evening, towards the latter end of May, I was collecting in the neighbourhood of Brixton, near some ponds, when I was suddenly covered by a multitude of a small species of *Ephemera*,—I think the genus *Cloeon*. They settled on me apparently from my being the most conspicuous object near on which to undergo their final transformation. Their colour was of a dusky white, and opaque. They retained their position without moving, enabling me to observe beneath the glass the process by which these fragile creatures withdraw themselves from the comparatively cumbrous garment which envelopes their beautiful and aerial form.

Immediately on settling, the wings were laid flat at right angles with the body, and the insect remained about half a minute in a state of repose. A slight motion then appeared about the bases of the wings, which gradually collapsed, and were drawn alongside the *abdomen*. At this moment the insect resembled a piece of dirty cotton wool with little form. The elevated portion of the *thorax* now distended, and then gave way longitudinally, exhibiting the bright brown *thorax* of

<sup>c</sup> The *Chelifer cancrroides* is very abundant throughout the year on planks and bricks that are placed on decayed vegetable matter, where it preys on minute Diptera, (*Molobrus*, *Scatopse*, &c.) *Lonchæa vaginalis*, a fly common in the same situations during the month of June, is particularly infested by it, and also by *Acari*, and may be often seen on windows with from one to four *Cheliferi* attached by the claw to its *trochanteres*, and apparently without sustaining any injury from them. The other day we put several of both into a bottle, and often, when the fly approached the *Chelifer*, the latter immediately extended one of its claws, and seized the fly by the end of the *tarsus*; with the other claw it grasped either the middle of the *tarsus*, or the costal nervure of the wing, and then loosened the hold of each of its claws alternately till it arrived at the *trochanter*, where it remained fixed. We added three other flies, belonging to the genera *Anthomyia*, *Sepsis*, and *Borborus*. The first, a much more active insect than the *Lonchæa*, was soon seized by a *Chelifer*. It used its utmost efforts to disengage its *tarsus* without success; however, the *Chelifer* soon relaxed its hold of its own accord. When we looked at the insects the following day, the *Lonchæa*, the *Anthomyia*, and the *Borborus* were alive, and only the first had a *Chelifer* attached to it; so, likewise, had the *Sepsis*, whose death was probably occasioned by confinement, not by an injury.—ED.

the insect, which was rapidly followed by the head and anterior legs. After this effort the insect rested a few seconds. The next discernible motion was in the two or three last segments of the *abdomen*, where the muscles were in violent agitation, evidently for the purpose of extricating the fine *setæ* which adorn that part. The contractions continued upward; and the wings, freed from their flimsy covering, were fully developed, and in an instant the delivered captive took its flight: the whole process strongly resembling the drawing off of a tight glove. The whole operation did not, in most cases, exceed three minutes; in some cases less. Scarcely an instant elapsed between the full development of the insect and its taking flight: so rapidly did they acquire consistency. In some few instances I observed them coupled, in which case they soon died. I made a dozen or so find their way into a phial; they instantly deposited their eggs and died: one only, which I believe was a male, survived when I reached home, less than one hour after.

The number of the insect was truly surprising: they covered every part of my apparel, and my face and hands were not exempt. On my arrival at home my hat looked like a miller's, from being completely covered with the *exuviae*. I had taken several of these insects during the evening, and had put them into pill-boxes; almost all, however, were immature, and died without undergoing their metamorphosis; from which it would appear, that light and a free atmosphere are essential to its accomplishment. The principal swarm, however, appeared about an hour before sunset, and, I presume, enjoyed their hour's existence in one of the finest sunsets of this glorious summer.

The remarkable, and, I believe, peculiar habit, of the *Ephemeræ* to undergo a quadruple metamorphosis, deserves more notice than it has obtained. The insect appears to possess all the faculties of the perfect insect prior to this last change: it is true it does not fly so readily, and it is apparently of a more yielding matter: if disturbed in this state, although inactive, they will escape. Can any of your correspondents inform me as to the prior state of this tribe, and the characters of the *larvæ* and *pupæ*?

A. H. DAVIS.