

carried an oviposition of a single Noctuid to the perfect stage, nor can I recall a published record of its having been done. Further, in illustration of the veil that still hides portions of the life histories of these forms which rarely obtrude themselves upon our sight except under cover of the night, it may be mentioned that during the thirty years in which my studies have engaged me to a greater or less extent in the rearing of Lepidoptera, I do not recall an instance where I have observed the Noctuidæ *in coitu*, and therefore have no personal knowledge of the time, place, manner or duration of the initiative of Noctuid life.

It is known that in the Attacinæ, among the Bombycidæ, in confinement, the lives of the moths are very brief. The sexes mate a few hours after emerging from the pupæ, and continue in copulation for twenty-four hours or more. Oviposition may be commenced the following day, and completed within four or five days thereafter. Perhaps a week longer will complete the life period of the female—extending in all to about fifteen days. The male usually dies a few days after copulation—several days before the female.

In the Sphingidæ, the lives as observed, in confinement, are longer than in the Attacinæ, but I have no records from which to give comparative duration. Our observations upon the Phalænidæ lead us to believe that, as a general rule, their lives are shorter than are those of the Noctuidæ.

An approximation to the life period of the Noctuidæ may be obtained from the dates when the several species are observed abroad. The published records of the collections made by "sugaring" will furnish convenient data for this. I regret that at my present writing, away from books of reference, I am unable to refer to the papers of Messrs. Thaxter, Norman, Westcott* and others. From a paper published by myself in *Entomolog. Contrib.*, iv., pp. 43-51, it appears that the period of collection (embracing probably nearly the entire life period, as the examples when first taken at sugar were apparently just from pupæ, and those last taken so worn as to be hardly capable of flight) of quite a number of species was about one month. Among these may be mentioned *Habrosyne scripta*, *Agrotis baja*, *A. subgothica*, *A. bicarnea*, *A. repentis*,† *Hadena verbascoïdes*, *Gortyna sera*, *G. nictitans*, *Leucania pallens*, *L. phragmitidicola*, *L. lapidaria*, *L. pseudargyria*, *Orthodes infirma*, *Orthosia helva*, *Scoliopteryx libatrix* and *Pseudaglossa lubricalis*.

* *Psyche*, ii., pp. 34-38, 80; *Canad. Entomol.*, vii., pp. 3, 21; *Id.*, viii., p. 12.

† Now regarded as distinct from *A. messoria* Harris.