

mainly those who deal in humbug, claptrap, and lies, make money, in Entomology as in other things. If you are poor and have only your good reputation, it is a proof that you have kept yourself reasonably unspotted from a world of deceit and fraud, a world which, in the past at least, has rewarded the betrayer, the successful perjurer, and martyred every human heart that beat for it, ridiculed and oppressed every intellect that opposed reason to its unreason and folly. In every circle of society and activity, the same story of suffering and wrong is wearisomely repeated. Still, hope remains behind and has not flown even out of our Entomological boxes. Thus I wander from my subject, I hope not altogether aimlessly.

The relationship between the butterflies and moths and the flora of any region is so intimate a one, that a word may be said in closing this chapter upon the structure of the larvæ which feed mostly upon plants. The mandibles or jaws of the caterpillars are very powerful machines for biting the food transversely. Especially are the muscles attached to the jaws developed in the *Sesiidæ* and wood-feeding Bombyces and Noctuids. The pith of currant bushes and elder is fed upon by several caterpillars, and these internal feeders look like the larvæ of beetles, but may be distinguished among other characters by their abdominal feet. The *Cossinæ* feed internally on poplar, willow, oak and locust, and prodigious strength is required to tunnel these hard wooded trees. The way in which the cocoon of Bailey's goat moth (*Cossus Centerensis*) is formed out of splinters of the wood has been interestingly described by Dr. Bailey, and at first sight it is wonderful how the moth forces itself through the end of the cocoon, which seems to have no, or little, silk, and finds the open air. That it is through mechanical means that all cocoon makers escape, seems probable, and in *Telea Polyphemus* a hooklet has been discovered at the base of forewings used in cutting or tearing the silk. The "secretive fluid" theory seems to be now rejected. I have never seen any "secretive fluid" escaping by the mouth and used to soften the threads. The cocoons are protective and probably bad conductors, thus ensuring the safety of the chrysalis during heavy frosts. The first chrysalids were probably formed under water, beneath stones or in the stems of water plants. That the silk is usually brown and resembles the bark of trees is owing to "protective" origin, while all cocoons soon "weather"; the rain and sun take out the bright surface lines and the cocoon soon comes to look more and more like the surface on which it is formed. The white patches on the cocoon of *Platysania* Columbia look like the patches on the bark of the larch. The fields and woods conceal numbers of insects from predatory birds and animals, bringing a percentage through all dangers. The enemies of insects are so numerous that very slight changes, one must think, would act beneficially upon the preservation of the species. The woods, probably, are more protective than the fields, but the interior of woods seem also the most deserted by insects. The sunlight is probably beneficial, and forces the caterpillars and butterflies and moths into exposed conditions. The tendency to multiply excessively, which the Lepidoptera show, must be kept within bounds, or the balance of Nature would soon become seriously threatened. In every way the adaptation of the insect in its different stages to its total environment is very perceptible and interesting to study. I have shown that the caterpillars of certain Lepidoptera are very plainly independently influenced to variation, the perfect insects being much less affected. Larval variation has probably played the most important part in the formation of the species of *Datana*, etc. I have called such generic assemblages where the contained forms are very close, apparently just separating into "species" by the name "progenera." Throughout the life of the butterfly or moth modifying agencies are active and, though the frail individual easily perishes at the least unfriendly pressure, yet the species is none the less surely affected by a continued force applied in any given direction under natural conditions.