issues from the egg early in August in average seasons, and its term of hibernation, beginning soon after the middle of August, continues until approximately the beginning of May, so that ordinarily hibernation lasts somewhat more than eight months. Emerging from its winter shelter early in May, the juvenile larva re-enters active life, still a literal infant though over eight months old*.

So chilly are the May nights, and many of its days also, that more than half this active period of the larva must be passed in a state scarcely different from actual hybernation. The conditions of life are doubtless somewhat restrictive, and a removal of these disabilities, by rearing the caterpillars in a warm house, is like an introduction into the tropics.

The result of this culture in an improved climate, other circumstances being favorable, is a notable progress of type, an outcome of butterflies definitely in advance of the ordinary averages.

One of the bred families illustrates well this immediate improvement of type. This lot comprises nine ♂s and ten ♀s, and is a natural family from eggs of one ♀. The increased size of these specimens, as compared with the caught lot, is decisive. The twenty-nine caught ♂s average 51 1-5 mm.; the nine ♂s of this family show an average expanse of 53⅔ mm. Only one of the ♂s of this family expands less than the average of the caught ♂s, each of the remaining eight exceeding that average. The ten ♀s average 57½ mm., against 52½ mm., as the average measure of the 62 caught ♀s; indeed, each of the ten ♀s of this brood is decidedly beyond the average of the caught ♀s, none being under 55½ mm. One of the ♀s, measuring sixty mm., is slightly over 2.36 inches, is the largest *Elis* in my series. These nineteen specimens are as much superior to the caught material, in average of pattern elaboration, as in size. At a first general view they might almost suggest the idea of a distinct species, so superior are they as a body to the general mass of the caught set. But the difference would become intelligible to any careful observer, on inspection, as a simple advance of one set beyond the average development of the other; a difference in degree, not a change in method. This distinction between quantitative and qualitative differences is the vital point in

* I hope none of my younger readers entertain the absurd mediæval superstition that hibernating caterpillars pass the winter in a *frozen condition*. In successful hibernation they do not get near to such a condition; but if they do absolutely freeze, then are they undone caterpillars. Valkyria gives them sleep, unmixed with dreams, and they wake in Valhalla.