

ing all stages of *M. chalcon*, with *M. phaeton* colonizing on the same plant, so that the habits of the two species could be compared.

Mr. Edwards has also raised *Lycaena melissa* from egg to chrysalis, and finds that the larva in the last stages has similar organs to those of *Pseudargiolus* on the tenth and eleventh segments, and that ants are attracted in the same way by the sweet fluid they exude. Over 100 eggs of *Parnassius*, either *smintheus* or something close to it, have been obtained from West Montana. As to butterflies, the author stated that he had never seen them scarcer than during the past year. An interesting discussion followed this paper, in which several members took part.

Prof. Riley offered some "Notes on *Pædisca Scudderiana*," and exhibited plants of *Solidago* containing the larvæ of this species, and made some remarks on its habits which went to reconcile the published conclusions and differences between himself and Dr. Kellicott, and to show that while the insect is commonly a gall maker, it was also, exceptionally, an inquiline. The specimens showed that the habits of the insect were variable, and the larva was either a leaf-crumpler, living in a bunch of curled terminal leaves held together by a silken gallery, a stem-borer, without causing any swelling, or the maker of a more or less perfect gall. He had also found it as an inquiline in the gall of *Gelechia gallæsolidaginis*, the gall of which was always distinguishable from that of the *Pædisca*; among other things by the burrow of the larva always being traceable from the blighted tip of the plant, whereas the *Pædisca* larva lived at first in the tip, and bored in at the side. Mr. Kellicott's observations were accurate so far as they went, but did not take into account the variation in habit. Mr. Riley had watched these larval habits during the present year from the time of hatching, and had concluded that the insect combined, in varying degree, the four characteristics of gall-maker, leaf-crumpler, stem-borer, and inquiline. The larvæ living in the crumpled leaves later in the season had not been reared to the imago, but he had made comparisons of the young larvæ and found that they were exactly alike, but they showed considerable modification as they developed, especially after the last moult. Several other micro-lepidopterous larvæ bored in the stems and lived among the leaves of *Solidago*; while another species, yet unbred, made a gall similar to that of *Pædisca*; but all the other larvæ known to him were easily distinguished from *Pædisca*.

Mr. D. S. Kellicott said he felt sure his observations as reported in the paper referred to were correct, and he was glad to know that both his own conclusions and those of Mr. Riley could be thus harmonized. It would seem he had not carried his observations far enough to discover that all the larvæ of *Scudderiana* fed at first in the terminal leaves. Late in the fall he had often taken from the terminal leaves the mature larvæ referred to by Mr. Riley, but had so far failed to obtain the imago from them. He had some doubt still of its being identical with *P. Scudderiana*.

Prof. Riley also called attention to the life habits of *Helia americanis*, which he finds in the larval state to feed in the nests of *Formica rufa*. So far as he knows, this is the first lepidopterous insect known to develop in ants' nests. He also gave his experience in rearing *Arsame obliquata* during the past two years, and exhibited specimens in different stages of development. The eggs are laid in curious broadly conical or plano-convex masses enveloped in hair, and a cream coloured mucous secretion, which combined look much like spun silk on the inside, and on the outside like the glazed exudation of *Orgyia leucostigma*. The larva, which is pale at first, but dark in its later stages, bores into the stems of *Sagittaria* and *Nelumbium*, and is semi-aquatic, the last pair of spiracles being exceptionally large and dorsal. There are two annual broods, the second hibernating as larvæ in moss and decaying stumps near the water. The moth shows great variation, and the summer brood is on the average not much more than half as large as the spring or hibernated generation, and generally much paler.

Mr. D. S. Kellicott said that he had bred this moth at Buffalo, N.Y., where it was very abundant, and he had found it associated with another species, an account of which he promised to give at some future session.

The meeting then adjourned to meet at 2 p.m., the following day.

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