

PSYCHE.

MIMICRY IN HEMIPTERA.

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The family *lygaeidae* presents us with two examples of protective mimicry that seem well worth recording. These cases which are very similar, have doubtless been frequently observed by collectors, but I have seen no published account of them. I refer to the adolescent stages of *Cymus angustatus* and *Oedancala dorsalis*; both live on the various species of *Carex* and *Juncus* growing in swampy places in open woods and pastures.

Cymus angustatus occurs principally on *Juncus nodosus* and allied species, but is frequently found on the smaller *Carices*; it is extremely abundant in the localities mentioned above, and along roadside ditches, and in fact wherever the *Juncus* grows. In this vicinity it appears in May, and continues until late in autumn; copulation takes place about the first of July, the immature insects are abundant through the last of July, the imago appearing from the first to the tenth of August. The young, at least in the nymph state, bear a striking resemblance to the capsules and perigynia of the plants on which they occur; they are of a dull straw-

color, ovate in form, compressed or somewhat lenticulate, acute behind, produced and blunt before, and with the connexivum expanded and very thin. When taken in the sweep-net with the glumes and fruit of these plants, it is all but impossible to detect them as long as they remain quiet, which however, fortunately for the collector, is never for any considerable length of time. I have frequently poked them aside with my tweezers, never suspecting their true character until they indicated it by scrambling to their feet and running off, which they did with surprising facility.

Oedancala dorsalis is a larger species and rather less abundant; it occurs wherever *Carex vulpinoidea* can be found, but can frequently be taken on other species of *Carex* and *Cyperus*. In the nymph state it greatly resembles the preceding, but is larger, more rounded in form, has a conspicuous dark line on the dorsum, and is of a much more sluggish disposition; it is equally difficult to detect, when on the plant or mixed with the contents of the sweep-net. The imago when senile is

deeply suffused with red; in this state they can be found through June and July, when, however, they are less common than at other times: they reach maturity about the tenth of August, but occur throughout the summer from May to September, being the most abundant in August.

I would here mention another hemipteron that affects the same plants, through July and August, the *Liburnia dorsalis* of Fitch, who described it

under the Fabrician genus *Delphax*. Like the foregoing species it derives protection by its close resemblance to the inflorescence of its native grasses, being of a soiled yellow or testaceous color with a darker dorsal stripe. It is not a common species here, and is difficult to capture as it is very shy and agile, and when approached leaps so quickly that the eye cannot follow it. I have never taken the young.

VARIABLE NUMBER OF MOLTS OF INSECTS.

BY ANNA KATHERINA DIMMOCK, CAMBRIDGE, MASS.

The first notes given below are translated from a paper by Alfred Wailly, entitled "Educations d'attaciens séricigènes faites à Norbiton, Surrey, Angleterre, en 1884" (Bull. d'insectol. agricole, Nov. 1885, v. 10, p. 173-174).

"In my English article, recently published in the Journal of the Society of arts, of London, I have given certain accounts of the curious system employed by Mr. Weniger in rearing lepidoptera and of the extraordinary results obtained by him. He rears the larvae in a large glass box, a green-house in miniature, heated by a kerosene lamp, upon which is placed a saucer filled with water. The larvae, kept at a uniform temperature of about 25 degrees centigrade, live in an atmosphere charged with the vapors of water and kerosene, and in-

stead of dying of disease, they develop with extraordinary rapidity. I have seen the larvae of *Antheraea mylitta*, hatched seven days after the deposition of the eggs, arriving at their last stage towards the end of a month. *Attacus atlas* was reared in a like manner, and fourteen days after the formation of the cocoons, the emergence of the moths took place; but not a single copulation was obtained. Many delicate species difficult to rear, have been reared in this manner with great success.

"There is also a fact which, I think, here merits attention. The larvae of *Antheraea mylitta* and of *Ceratocampa imperialis*, species considered as having six stages, and which, when reared under normal conditions actually have the six stages, when reared in this