

It is not necessary to give details other than those of the maculation of the upperside to demonstrate the applicatory effect of this plan for *E. chalcedona* as well as other *Euphydryas*.

It should be realized that the above is not the original description of *Euphydryas chalcedona* nor does it follow the substance of that description in any manner. It is only the author's version of how it might be described by using the chart method.

In appreciation of the valued counsel and also the painstaking efforts so generously given in preparing our society's periodical by our Editor-in-Chief, Dr. CHARLES L. REMINGTON of Yale University, I have assumed the privilege of recording this race in his name.

References

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MORE OBSERVATIONS OF THE "PUMPING" ACTION OF MOTHS AT WATER, WITH NOTES ON OBSERVATIONS IN QUINTANA ROO

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I cannot remember the exact date on which I experienced the following, as I had made many collecting trips in the evenings of 1952 and 1953 to Gildersleeve Mt. State Park, in Lake Co., Ohio. It was the evening of one hot day in 1953 in which I passed with my lantern and killing jars, can of sugar-bait, brush, net, etc, by a shallow stream that in some places barely trickled over the large slabs of bed rock in an open area surrounded by secondary forest and fields, at about 1/3 mile from the base of Gildersleeve Mt. The night had already fallen, and by the light of my lantern I noticed 2 or 3 moths sitting on the rocks. I paid no attention to them until I returned, as I had hopes to reap a fine harvest of moths by baiting the trees along a larger stream further on down the trail. Later, on returning with a fair number of things, and upon approaching the place where I had noticed the moths sitting on the rocks, I was surprised to see many moths, about 20 or 30, sitting also. I put down my equipment and went for a closer look, and collected several of the better varieties. I noticed that they were sitting on

the dampened portions of the rock where the water barely trickled by, then noticed that they seemed to be drinking the water, and forcing the same liquid out as they kept consuming more and more. That night was especially warm and there was no wind at the time, and it was about 11:00 o'clock when I was returning to the car to head home. There seemed to be few species, the predominating ones *Dyspteris abortivaria* H. S., *Desmia funeralis* Hbn., and *Percnoptilota obstipata* Fabr. I was foolish not to make notes on the observance at the time, as there were other species which I cannot now recall, but it is interesting to note that the same species seemed to predominate in CLENCH's article in the *News* (vol. 11: p. 18), that is to say, *D. funeralis* and *D. abortivaria*. There were certainly many other species that not only came to my lantern but to the sugar-bait also that were not sipping the moisture. I cannot remember if they were sitting on a drier edge of rock with their probosces in the wetter parts, or if they were actually standing in the water; I do remember that the water was not running in a fast trickle, but was just barely getting by. In fact, in some places the water had stopped circulating completely and formed isolated pools. I regret that I never again have been able to find moths engaged in this activity.

I have noticed the same action on the part of certain butterflies of the genus *Papilio* in Yucatán and Quintana Roo. The genus contains many species which are noted for their participation in the so called "mud-puddle clubs", along with the Pierids and *Libytheana carinenta* Cram. At times, when the earth around the wells by which the country people receive their water supply is sufficiently wet so as not to dry out immediately under the scorching tropical sun, thousands of *Papilio philolaus* Boisduval with several of their close relative *P. epidaus* Doubleday will settle to sip the precious liquid from the mud. During the months of March and April, which is the height of the dry season, they will even come near where a woman is washing clothes with only slight caution, such is their desperation to obtain the liquid. I have even seen them sitting in the hollowed out tree trunks, that are part of every Maya household, in which clothes are washed, merrily drinking. Even in northern Quintana Roo, during the rainy season which begins in May, I have noticed two other relatives, *P. agesilaus* Guérin and *P. protesilaus* Linné frequenting wet muddy places. But only once have I ever seen any of this group pumping. It was in May of 1957 that I was in Bac-halal, Quintana Roo, on a collecting trip, that I noticed a swarm of *P. epidaus* sitting in a stinking hollow of mud about 50 feet from the edge of the lagoon by the same name that runs north from Chetumal. It was a terrifically hot and humid day, about 12:00 o'clock noon, and I thought that it would be a nice excuse for not running after insects to take out my camera and photograph the group of *epidaus*. They were very very wary, and upon my approach, even very cautiously, they all flew away. But several were content to come back almost immediately, so I crouched down amongst the weeds and waited. I must have been there about a half hour, already soaked in my own perspiration, when about 30 specimens had settled, I was rewarded with some nice color slides of them, and also the opportunity to notice that they were forcibly ejecting the water

they were sipping, each spurt having gone about 4 to 5 inches behind them from the anus, about every 10 seconds. I have on other occasions observed *Papilio* sipping but never were they pumping as on this day. As the mud hollow was not too large, they were all very close to one another, and seemed not to mind in the least ejecting the liquid on one another, as some were doing. Did they have an impulse to drink enormous quantities of water on this excessively hot, stifling, humid day? I have seen thousands of *philolaus* at times, and it was very hot, but not so humid, but never were they pumping. It was also interesting to note that they had their wings tightly closed behind their backs, and they would sit in such a way as to cast no shadow. When one more would arrive, the others would waver their wings a few times, then sit motionless except for the ejecting action, while the newcomer would shift about until he was in a position so as not to cast a shadow.

Another experience deserves mention, even though it has little to do with pumping. The same day that there was such an excess of humidity, I observed that on the newly protruding aerial roots that make their way down to the water level of a species of mangrove that grows along the shores of the lagoon of Bac-hahal, Q. Roo, several species of butterflies were to be found sipping. On closer inspection I saw that there were some small blackish holes or bruises on the newly sprouting aerial roots. It was in these bruises or holes that the butterflies seemed to obtain their object, as they would sit around them as they could and poke their probosces into the holes. Only on that hot humid day did I observe them doing so, for the next week thereafter I went several times daily to the spot, and saw almost nothing. The species that seemed to frequent the roots were mostly nymphalids such as *Prepona demophon* L.; *Pyrrhogyra hypsenor* G. & S.; *Eunica alcmena* Dbl. & Hew.; *Didonis aganisa* Boisd.; *Temenis laothoë liberia* Fabr.; *Historis odia* Fabr.; *Ageronia februa* Hbn. and *guatemalena eupolema* Fruhst., as well as two others not yet identified; an unidentified *Anæa*; *Smyrna blomfieldia datis* Fruhst.; *Gynæcia dirce* L.; the brassolid *Opsiphanes cassina fabricii* Boisd., and a few *Euptychia hermes sosybia* Fabr. and *E. renata disaffecta* Btlr. A few days later, I saw only one *E. alcmena*, but couldn't catch it. I kept purposely cutting holes and bruising some of the roots to see if they would attract more specimens, but it was without success that I did so. I wonder if this condition has ever been observed before? I think all such observations should be published and available to amateurs and professionals alike, for it gives one new ideas on how to go about collecting specimens, as well as whereabouts to be on the watch for them.

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