

Metamorphosis of *Historis acheronta* (Fabricius) Lepidoptera Nymphalidae.

by F. C. Urich

"Sans Souci" Estate, Sangre Grande.

I have always mentioned to my several co-collectors that it was my opinion that if and when the host plant of *Historis acheronta* was discovered it most certainly would be *Cecropia peltata* ("Bois Canot").

Eventually, during the month of March 1986, the chance of proving my hunch presented itself. On 22nd March 1986, a female *Historis acheronta* was caught in a baited trap. Knowing that the cut leaves of *Cecropia* do not last more than a day or two before fading and curling, which would not be very attractive to a female should she decide to lay, I placed a cover over a small live plant in the ground and introduced the female along with some rotten banana.

On close examination under the leaves on 23rd March, 9 eggs were observed close to the secondary veins of the leaf. These hatched on 26th March. This amazed me, as never have I had the experience of any species of butterfly hatch in so short a time.

With most of the Nymphalidae, the young larvae position themselves individually at the edge of the leaf using their frass and silk to form a small extension outwards and beyond the end of the vein. On this they remain motionless after having eaten. In so doing, they minimize the chances of being spotted and taken away by predators.

However, as is well known, on most *Cecropia* plants there are present hundreds of a medium-sized, redish ant (*Aztech* sp.?) that attack and kill newly-hatched larvae.

Nevertheless, it would be easy to understand how elated I was to be able to confirm at last my prediction that when any of us was lucky enough either to find a caterpillar or to see a female laying it would be on *Cecropia*. So after decades of searching and hoping, the time at last arrived when my prediction would become a certainty.

However, a series of misfortunes took place. Seven of the nine small caterpillars were attacked and removed by the ants mentioned above. I was indeed lucky to have found the two that so far had not been attacked. These two were removed, and I had no alternative but to place them on a cut leaf. Misfortune did not end there; in my anxiety to get these established on the leaf in my breeding cage, when I saw crawling on the leaf something which I thought was an ant, I rolled it off, and then realised that it was one of the small larvae and not an ant. I was now left with a single one.

Eventually, when it pupated. I saw for the first time what the pupa of the butterfly looks like; it was probably the first time anyone had seen this, or the larvae of this butterfly for that matter.

Strangely enough I had pictured the pupa to be similar to that of the *Historis odius orion*, but of course somewhat smaller. This also turned out to be correct. It is very similar to that of the *Historis odius orion* except that it is narrower and a bit longer,

plus the fact that the two protrusions at the bottom of the pupa are separated by a small space whereas these protrusions in the case of the *orion* actually touch. So at long last I was able to prove without a doubt that the educated guess regarding the host plant was correct.

Tragedy did not end there, however, as my finger slipped whilst setting the imago, inflicting a small smudge at the tip of one of the forewings. It might be worth mentioning that a friend of mine José I. Castro, who wrote a book "The Sharks of North American Waters" and who is an extremely good photographer, took pictures of all stages of this metamorphosis, but the film turned out to be faulty and so no plates are available. All the scores of pictures that were taken of other species came out beautifully. But the very ones I needed most were no good.

Never have I recorded any species of butterfly that goes through it's metamorphosis in so short a period of time; from egg laying to hatching of imago; 29 days. At the end of this article, I shall give the dates and various details of the ecdyses.

Things do happen in very strange ways. Shortly afterwards, Scott Alston-Smith a co-collector and a good friend of mine, on a trip he made to Innis field in the South of Trinidad about the 22nd May 1987, was fortunate enough to see two females laying on *Cecropia*. He collected some 28 eggs. He very kindly gave me 6 and kept 22 for himself. It was during the rearing of the larvae that both he and myself realised that the larvae are highly dimorphic.

For example, the lone larva that I brought through was brownish greenish black, with four patches of "bird-like" patterns (yellow) in four places on the dorsal side whereas the ones he brought through had no such exact designs though some had yellowish markings. Amongst those he gave me, there were lines running the lengths of the bodies at both sides. One or two had irregular orange markings along the dorsal side but not the yellow bird-like marks as on the one that I brought through.

Details of Life History Stages

Egg laid on 23rd March 1986.

Hatched 26th March 1986.

First ecdysis 31st March 1987

Second ecdysis 4th April 1987

Third ecdysis 8th April 1987

Pupated 13th April 1987

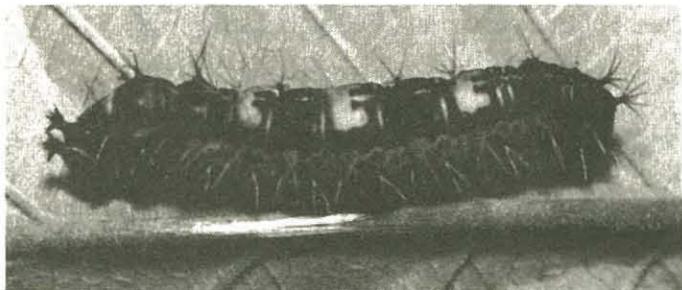
Hatched 21st April 1987

From laying of egg to hatching of imago : 29 days

Scott Smith has informed me that most of his came through in an even shorter time.

Egg : Globular, whitish, and ribbed from top centre downwards, more or less 1 mm in diameter. It is extremely difficult to spot when the eggs are laid at the side of the secondary ribs of the *Cecropia*.

Larva : On hatching it is extremely thin, smooth, 4 mm long, greenish brown in colour with an oval, black, smooth head. Whitish small dots run the length of the body and the body is covered with short whitish thin hairs thinly dispersed on the surface of the body. After the first ecdysis, the head is still black with two short blunt knobs, one on each side. A row of short Christmas-tree spines run the length of the body in the mid-dorsal line, with a dorso-lateral row of similar spines on each side and rows of stiff, straw-coloured hairs laterally above the legs. Along the length of the area from which these spiny hairs protrude run two light straw coloured lines.



After the second ecdysis, the head is still black, but now has a slight indentation from top to bottom, the indentation at the top being deeper than at the bottom, which becomes almost flat at that point. Each lobe of the head supports a short thick horn from the ends of which extend four short, pointed, smaller horns. After the third ecdysis, everything remains the same except that there are now three "dove-like" patterns situated on the dorsal side which are bright yellow with two circular black dots on each yellow marking.

Pupa: The pupa is very similar to that of *Historis odious orion*. The main difference is the fact that it is somewhat more flattened, but is more or less ham-shaped as in *orion*. There are six four-pronged spines along the mid-dorsal line arranged in single file. Near the point where the spines end on the pupal case a ridge curving back towards the ventral side marks off the area of the thorax. Anteriorly there is a pair of blunt, short, rough protrusions, which are separated by a distance of about 2 mm and do not actually touch as they do in *Historis odious orion*.

Biege is the predominant colour of this pupa, with streaks of darker brown to almost black. The position of the eyes of the imago can plainly be seen represented by bulges on both sides of the pupa.

