

# The International Lepidoptera Survey

## newsletter

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### Phyciodes incognitus

*Phyciodes incognitus* was described in Volume 4 number 8 of **The Taxonomic Report** (Sept. 25, 2004) of The International Lepidoptera Survey. In its facies, this species can be very similar to both *Phyciodes tharos* and *Phyciodes cocyta*. It is known to be sympatric with both. It is sympatric with *P. tharos* at all four of its documented sites of occurrence in GA and NC, including its type locality of Duncan Ridge Road, Union County, Georgia. It was at one time sympatric with *P. cocyta* at the type locality of the *cocyta* synonym *Phyciodes marcia* at Kanawha River, Kanawha County, West Virginia. This was determined from specimens in the W. H. Edwards collection (Carnegie Museum, Pittsburgh, PA) among which at least one specimen has been determined as *P. incognitus* (Fig. 1).

*P. incognitus* is evidenced to be distinct from *P. tharos* by 1) their sympatry and 2) larval and adult morphology. From *P. cocyta*, *P. incognitus* is distinguished by 1) phenology and 2) mtDNA. The DNA sequencing was done by Niklas Wahlberg. In the original description, only the result of that sequencing was documented – which was that *P. incognitus* nested within the haplotypes of *P. tharos* (in Wahlberg's clade B) and away from *P. cocyta* (in Wahlberg's clades D & E) thereby indicating *incognitus* vs. *cocyta* speciation. This is

because the Wahlberg et al. study determined that the *P. tharos* and *P. cocyta* haplotypes, were not closely related. They stated: "In summary, the main results for the *tharos*-group are that *P. tharos* forms a distinct clade basal to most of the other *tharos*-group species; *P. cocyta* is not closely related to *P. tharos* (as has always been assumed from morphological-ecological traits), rather the majority of its mtDNA haplotypes are closer to *P. pulchella*..."

The sympatry and rearing of *P. incognitus* and *P. tharos* established their status as different species. The phenology of *P. incognitus* (multi-brooded) indicated possible distinction from *P. cocyta* (single-brooded), but due to their similar phenotypes, the mtDNA data was essential to making a conclusive determination. Now that it is known that the mtDNA of *P. incognitus* is as distant from *P. cocyta* as is that of *P. tharos*, another interesting question arises – which is the older taxon, *tharos* or *incognitus*. After I sent my initial sample of 4 *tharos* and 3 *incognitus* specimens to Wahlberg, he composed a new gene-tree (compared from the one published in their 2003 paper) of clade B. I am not qualified to make definitive molecular conclusions, but the region of the gene-tree diagram in which two of the three *P. incognitus* nested, raised, in my opinion, the possibility that *P. incognitus* is basal to *P. tharos* – and thus the rest of the *tharos*-group. This would account for the many similarities (at multiple characters) between not only *P. incognitus* and *P. tharos* and *P. cocyta*, but also *P. batesii maconensis*. Or rather, in this hypothesis, the similarity of *tharos*, *cocyta* and *maconensis* **TO** *incognitus*.

Occasional specimens of *P. incognitus* tend to have a heavy ventral forewing median line of black spots (the black is actually the ground color on all *Phyciodes* – the "spots" being the fulvous markings), and also very light ventral hindwings. These may be normal variants, or even hybrids with *maconensis*. But they can look very much like *maconensis* with which *incognitus* flies mid May to early June. These traits



Fig. 1. *P. incognitus*. Edwards coll., Kanawha River, WV.



are found in the third *incognitus* specimen (top specimen, Fig. 2) which nested in a more distant part of clade B. Nine additional *P. incognitus* specimens were eventually sent to Wahlberg for sequencing, but his time restrictions have not yet permitted him to assess them beyond the basic determination that those also had haplotypes similar to those of *P. tharos* and not *P. cocyta*.

– Ron Gatrell, Goose Creek, SC

Photos and gene-tree provided by Wahlberg. Right specimens venter of left one.





Fig. 3

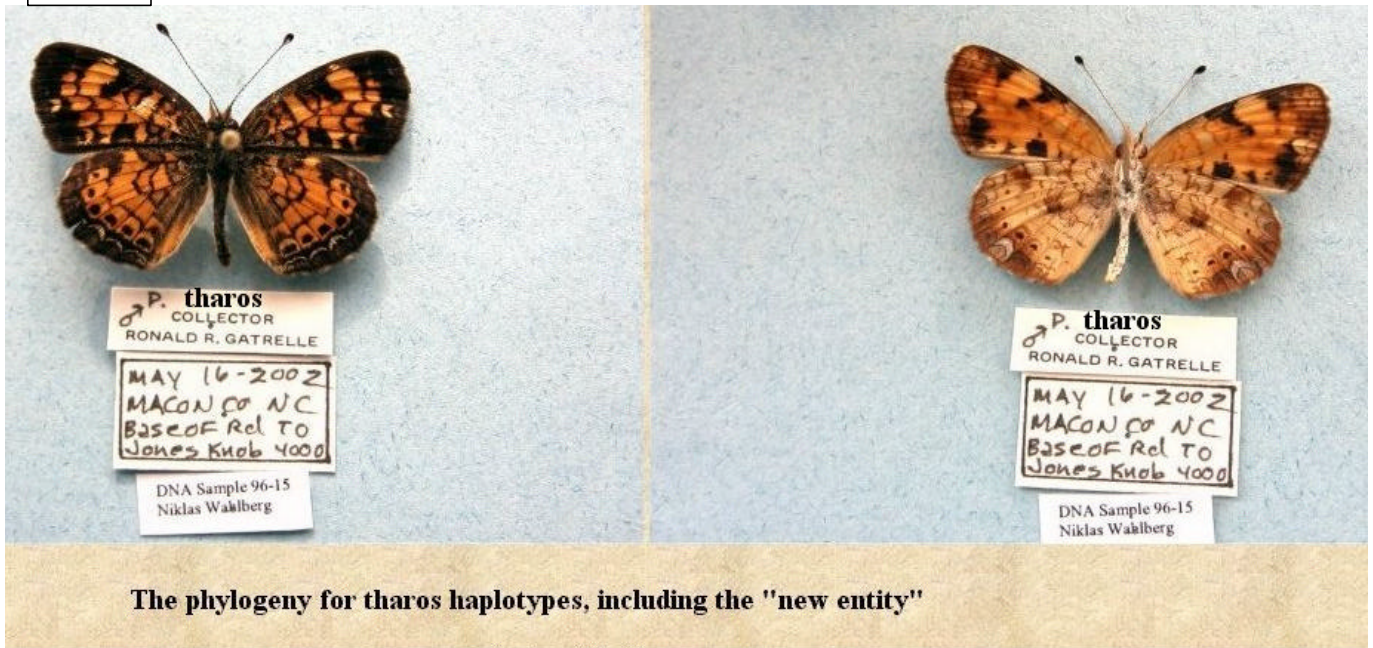
*Phyciodes tharos*



**Fig. 2.** The orange nudums of the clubs do not show up in these photos, but are very evident in hand. These three specimens are paratypes. **Figs. 2-4.** Specimens are fairly close to proportional to each other. All specimens are in the TILS / MOTH collection.



Fig. 4



The phylogeny for tharos haplotypes, including the "new entity"

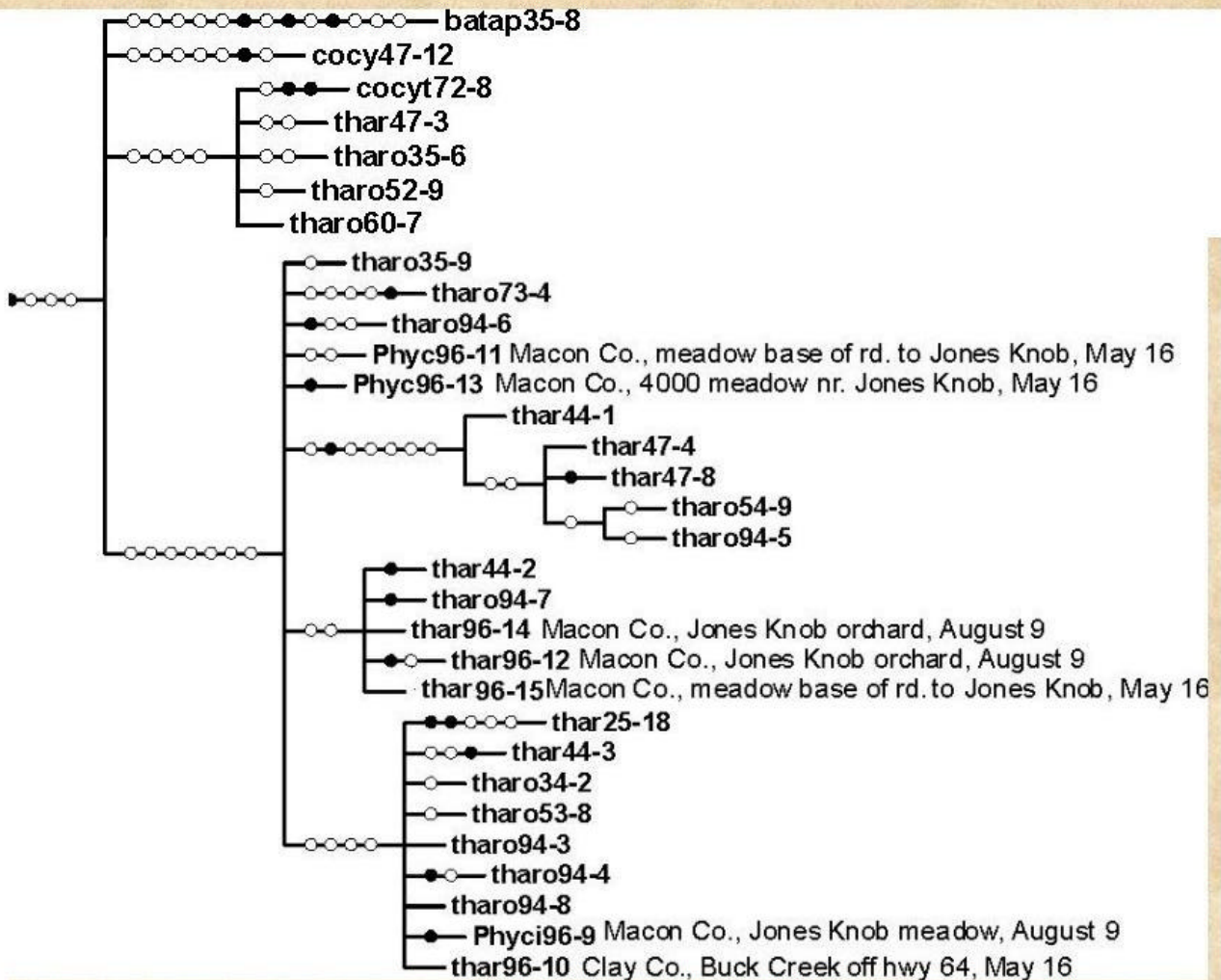


Fig. 4. Phyc = *P. incognitus*. Several of the specimens in this tree were not referenced on the Wahlberg et al. 2003 gene-tree. For comparison, that tree can be found at: <http://www.zoologi.su.se/research/wahlberg/Phyciodes/Phylogeny.htm>

## New findings of Mitchell's Satyr (*Neonympha mitchellii*) in Alabama.

On June 7, 2002, I inspected butterfly populations in several localities in Bibb and Hale counties in central Alabama. Among the species identified in both counties was Mitchell's Satyr (*Neonympha mitchellii*). The Hale Co. location was a new county record, and also another significant discovery for this butterfly. Because of the species' endangered status, the exact locations are not revealed herein.

The location in Bibb Co. (1 specimen observed, photographed) is a thin row of bushes that separate a dirt road from a swampy, slow moving creek. In the same place I found a Carolina Satyr (*Hermeuptychia sosybius*) at the edge of the woods and several American Snouts (*Libytheana carinenta bachmanni*) along with Summer Azures (*Celastrina neglecta*) on the road. The *N. mitchellii* individual was found on the bushes along the roadside and when disturbed, it flew along the bushes about 1 m – 1.5 m above the ground and made no attempt to move deep into denser vegetation.

The location in Hale Co. (3 specimens observed, photographed) is about 12 miles away from the Bibb Co. location and consists of bottomland hardwood drainage with small openings overgrown mostly by canes (cane breaks). There was a creek within 50-100 meters. One of specimens that I could observe from a short distance was very fresh. The others also didn't appear worn, indicating that the emergence had only recently begun. Flying with the Mitchell's Satyrs along a 100 meter trail were very fresh Southern Pearly-eyes (*Enodia portlandia*), Carolina Satyrs (*Hermeuptychia sosybius*), Gemmed Satyrs (*Cyllopsis gemma*) and Little Wood Satyrs (*Megisto cymela*). Because they flew together it was easy to distinguish the species even without binoculars. The largest were *E. portlandia*, while smaller butterflies of similar size were *N. mitchellii* and *M. cymela*; and the smallest were *H. sosybius* and *C. gemma*, that were also the most difficult to distinguish from each other from a distance. *N. mitchellii* appeared noticeably darker than *M. cymela* and was most easily-approached species of all the Satyrs. Adults of *N. mitchelli* are similar to *H. sosybius* – flying with a slightly higher and less bobbing flight than *C. gemma*, but they perch more often than either *H. sosybius* or *C. gemma* and do not fly far away when frightened from a perch. They mostly perch and fly at a height of 1 m – 1.5 m - the same as I observed in Bibb Co. I presume that such generalizations in behavior reported above aren't always reliable, but being short of time for more thorough observation I can report only as much.

The butterfly photographs at both locations were taken using a Canon Rebel G SLR 35mm camera with a Sigma 70-300 mm zoom lens, at 300 mm setting.

– Vitaly Charny, Birmingham, AL



Bibb Co., Alabama *N. mitchellii* ssp.



Hale Co., Alabama *N. mitchellii* ssp.





Above: Bibb County site.

Below: Hale County site.

