



# The Taxonomic Report

OF THE INTERNATIONAL LEPIDOPTERA SURVEY



## HÜBNER'S *HELICTA*: THE FORGOTTEN *NEONYMPHA*.

### THE RECOGNITION AND ELEVATION OF *NEONYMPHA HELICTA* (NYMPHALIDAE: SATYRINAE) TO SPECIFIC STATUS. THE DESIGNATION OF NEOTYPES FOR *N. HELICTA* AND *N. AREOLATUS*. THE SUBSPECIFIC TRANSFER OF *SEPTENTRIONALIS* TO *HELICTA* AND THE DESCRIPTION OF A THIRD *HELICTA* SUBSPECIES FROM SOUTH FLORIDA.

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**ABSTRACT.** Hübner (1806) based the name *Oreas fimbriata helicta* on a John Abbot painting of a southeastern US satyr without a written description. Subsequent lepidopterists have nearly ignored this taxon. *Helicta* is herein recognized as a valid species – *Neonympha helicta*. A neotype is designated for *helicta* from Aiken County, SC and deposited in the AME Sarasota, FL. A neotype is also designated for *Papilio areolata* J.E. Smith, 1797 from Chatham County, GA and deposited in the AME. *Septentrionalis* Davis, 1924 is recognized as the northern US subspecies of *helicta* not *areolatus*. An apparently isolated relict population of *helicta* south of Miami, FL is described as new subspecies *Neonympha helicta dadeensis*.

**Additional key words:** Genitalia, habitat association, disjunct distribution.

### HÜBNER'S *HELICTA*

In 1806 Hübner established the name *Oreas fimbriata helicta* by affixing it to an Abbot painting of a southeastern US butterfly in *Sammlung exotischer Schmetterlinge* (Figs. 2 & 3). There was no written description. However, by 1816 Hübner had apparently come to regard his *helicta* as synonymous with *Neonympha areolatus* (J.E. Smith, 1797), stating under number 622 in his 1816 *Verzeichniss bekannter Schmettlinge*: “*Neonympha Helicta. Areolatus* Abbot. Lepid. 13 Hubn. *Oreas fimb. Helicta.*”

In dos Passos' 1964 checklist, Hübner's *helicta* is listed in the synonymy of both *N. areolata areolata* and *N. areolata septentrionalis* Davis, 1924. In their 1981 revision of the Lepidopterists' Society checklist, Miller and Brown list *helicta* in the synonymy of *areolatus*. However, they noted that *helicta* might be more correctly associated with *N. areolatus septentrionalis*. Miller and Brown also suggested that the type specimen of *helicta* might be in the Natural History Museum, Vienna, Austria – or lost. The potential problem here is obvious. Since *helicta* is the older name, it would replace *septentrionalis* if these two were in fact the same taxon.

Dr. Gerhard Tarmann of Innsbruck, Austria, has graciously relayed the following information:

“The type of *Neonympha helicta* (Hübner) is not in the collection of the NHMW in Vienna. There is some Hübner material there although most of Hübner's material is destroyed. There was a man called Mazzola who bought some of Hübner's original material. As this man has taken away all of Hübner's labels and replaced them with his

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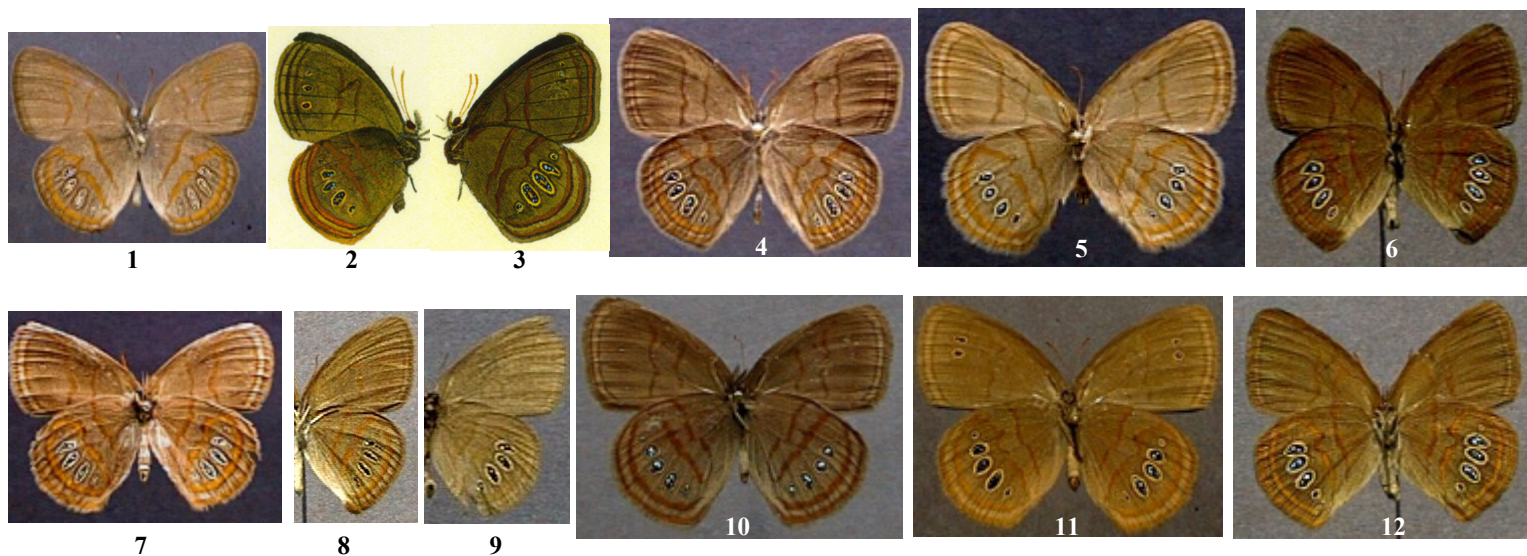
own printed labels, it took years to find out that some of the material in Mazzola's collection is in fact original Hübner material. However, although the Mazzola collection is in Vienna, there is only European material involved. **There are no possible Hübner types of American butterflies existing.** I got this information from Dr. Sabina Gaal, Naturhistorisches Museum Wien (NHMW)." (Emphasis mine.)

This situation calls for the designation and deposition of an appropriate neotype. Accordingly, I have designated a male specimen (Fig. 4) taken 1 June 1990 in the vicinity of Aiken State Park, Aiken County, South Carolina as neotype of *Oreas fimbriata helicta* Hübner, 1806. It has been appropriately labeled and deposited in the Allyn Museum of Entomology (AME), Sarasota, Florida. This specimen becomes the type for *Neonympha helicta*. I restrict the geocological type locality of *Oreas fimbriata helicta* to the upland sandhill habitats of Aiken County, South Carolina and Burke County, Georgia.

### DAVIS' SEPTENTRIONALIS, AN HELICTA

In Davis' 1924 description of *septentrionalis* he briefly mentions *helicta* on page 106 and figures a specimen from Southern Pines, Moore County, NC which he correctly determined as *helicta*. However, he regarded this specimen as "a rather uncommon variation" since it was the only specimen of this phenotype he had seen. The specimen has its VHW eyespots rounded and the two VHW central brown lines rather close together, which indeed correlates well to the original figures of *helicta* (Fig. 2).

However, it should have been obvious to Davis that his New Jersey *septentrionalis* specimens were also close to Hübner's figures of *helicta*. They were certainly much closer to Hübner's plate than to any *areolatus* Davis had at his disposal. Davis expected *septentrionalis* to be variable and made the following statement at the end of his paper: "The writer does not mean to imply that specimens of *areolatus* from New Jersey and vicinity may not occasionally show spots resembling those from Florida and Georgia. He simply wishes to point out that there is a rather constant difference between those from the north and south." *Helicta* certainly falls well within Davis' expected degree of variation.



**Figs. 1-12.** *Neonympha* subspecies (ventral surfaces). **1, Neotype** ♂ *Papilio areolata*, 2 Sept. 1989, Pine Barrens Road, Chatham Co., GA. **2,** ♂ *O. f. helicta* from Hübner, 1806. **3,** ♀ *O. f. helicta* from Hübner, 1806. **4, Neotype** ♂ *Oreas fimbriata helicta*, 1 June 1990, nr. Aiken State Park, Aiken Co., SC. **5,** topotype ♀ *N. h. helicta*, 8 June 1980, nr. Aiken State Park, Aiken Co., SC. **6, Holotype** ♂ *Neonympha helicta dadeensis*, 22 Nov. 1989, Carde Sound Road, Dade Co., FL (leg. Koehn). **7,** ♀ *N. areolatus*, 13 May 1973, Nr. Jct. I-26/17-A, Berkeley Co., SC. **8,** ♂ *N. areolatus*, 27 March 1989, Collier Co., FL (leg. Koehn). **9,** ♂ *N. h. helicta*, 23 June 1968, Foley, Baldwin Co., AL. **10,** topotype ♂ *N. h. septentrionalis*, 29 June 1970, Lakehurst, Ocean Co., NJ (leg. ?). **11,** ♀ *N. h. septentrionalis*, 2 July 1989, Lebanon St. For., Burlington Co., NJ (leg. ?). **12, Allotype** ♀ *Neonympha helicta dadeensis*, 24 Nov. 1989, Carde Sound Road, Dade Co., FL (leg. Koehn). All specimens leg. R.R. Gatrell unless otherwise noted. All figs. natural size.

Given the very limited understanding of the inland fauna of the Carolinas and Georgia in Davis' time, it is perhaps understandable why Davis gave his northern specimens a new name. However, given the closeness of his New Jersey specimens to the original Hübner figures, one is left to wonder why he made absolutely no connection between *helicta* and his new taxon, *septentrionalis*.

Because *helicta* and *areolatus* were both described from specimens collected by John Abbot in the southeastern US (and thus assumed to be consubspecific), and because *septentrionalis* was described from the northeastern US, it is understandable, but unfortunate, that taxonomists have mostly associated the name *helicta* with *areolatus* and given little consideration to the idea that *helicta* and *septentrionalis* were the close relatives. Two things should have led taxonomists to conclude that *septentrionalis* and *helicta* were the "same thing." First, the Abbot depiction of the species named *helicta* by Hübner is a more accurate depiction of *septentrionalis* than *areolatus* (especially in the male). Second, workers should have placed more confidence in Abbot's skills as a naturalist.

Abbot was a keen observer who knew what he was doing. While we today have had difficulty, in some cases, figuring out what Abbot had, he surely knew that his *helicta* and *areolatus* were two species – just as he knew that his *Chlosyne gorgone* (Hübner, 1810) and *C. ismeria* (Boisduval & Leconte, 1833) were two species (Gatrelle, 1998); and that his "irus" in Boisduval & Leconte, 1833 (= *Deciduphagus henrici* (Grote & Robinson, 1867)) and *D. arsace* (Boisduval & Leconte, 1833) (= *D. irus* (Godart, 1824)) were two species (Gatrelle, 1999); and his two Azure Blues (*TTR* 1:9, in press).

Davis' lone specimen of *helicta* came from the south central North Carolina sandhills. Today, we know that the Sandhills region from North Carolina south through Georgia and west through Mississippi is the stronghold of Hübner's *helicta*. Further, by their shared wing patterns and genitalia, we now know that *septentrionalis* and *helicta* are two subspecies of the same species – *helicta*. We also know now that differences in genitalia, wing pattern, habitat association, and flight characteristics demonstrate that *areolatus* and *helicta* are distinct species.

### **Assimilating *helicta* and *septentrionalis***

While living in Pensacola, Florida I collected four *septentrionalis*-like specimens on 23 June 1968 east of Foley, Alabama along the Gulf coast. I loaned three of these to the Allyn Museum for comment in the late 1970's, but they subsequently lost the specimens. Fortunately, I still have one worn male (Fig. 9).

In 1976 I found a *Neonympha* phenotype that was widely distributed in the upland sandhills around Aiken State Park in Aiken County, South Carolina. I have visited this area sporadically over the last twenty three years to collect and observe this species. In wing pattern and genitalia these *Neonympha* are very close to topotypes of *septentrionalis* I have from New Jersey. The only meaningful taxonomic difference between the New Jersey and South Carolina populations is that those from New Jersey are much darker in their ventral ground color and the orange brown lines on the ventral HW are usually more brown than orange. (In both populations the two ventral forewing bands are nearly always brown.) When I first encountered this population, I thought they were just a very disjunct, lightly colored colony of what I then understood to be *N. areolatus septentrionalis*.

Later in the 1970's while visiting Irvin Finkelstein at his home in Atlanta, Georgia, I learned that he had taken a few *septentrionalis*-like specimens in central Georgia. I remember how struck I was with one specimen in particular because it so closely matched New Jersey *septentrionalis*. In the 1980's I became aware of a population of "areolatus" south of Miami, Florida with large rounded eyespots (Fig 13). Then in the early 1990's I became aware of *septentrionalis*-like specimens from Mississippi. I have now seen specimens in series from both of these areas.

By the early 1980's I had concluded that the southeastern populations were at least subspecifically distinct from both New Jersey *septentrionalis* and typical *areolatus*, and deserved recognition as such. At this point the Miller and Brown notation regarding *helicta* became a central issue to this research.

Unfortunately at that same time, certain personal matters necessitated that all of my taxonomic research be placed on hold. Well over a decade passed with little collecting, and less research, being done. However, in June of 1990 I did have the time to collect and dissect several fresh males of these taxa. The differences in the genitalia of Berkeley County, SC *areolatus* and topotypical Aiken County, SC *helicta* were found to be significant and consistent (see below). The differences in genitalia confirm that the two distinct phenotypes which occur throughout the southern and eastern US are two sibling species.

Early in 1998 I again picked up my research on these taxa. In late December of 1998, Dr. Gerhard Tarmann of Innsbruck, Austria supplied me with the long sought after copy of the color plate of Hübner's *helicta* and the above quoted statement regarding the absence of a type for that taxon. This original *helicta* plate clearly portrays what we have come to know, in the broad sense, as the *septentrionalis* phenotype and not that of *areolatus*.

The occurrence of colonies of *septentrionalis*-like specimens from New Jersey south through Georgia to Mississippi, and disjunctly in extreme south Florida, certainly demonstrates that this taxon is what John Abbot had based his *helicta* paintings upon. (Note the exactly similar shape of the V median bands in Figs. 2 & 4 and 3 & 12.) As the senior name, *helicta* has priority over *septentrionalis* and becomes the proper specific name for all allied populations that comprise *Neonympha helicta*.

All of the populations of *helicta* south and west from North Carolina are of the same basic phenotype (except in the Miami, Florida area). They differ significantly from *N. h. septentrionalis* in the New Jersey vicinity only in having the ventral ground color a much lighter brown; and secondarily in a tendency to have the VHW eyespots larger (more elongate) and the lines on the VHW more orange than the New Jersey subspecies. The yellow rings around the eyespots are also bolder in *helicta helicta*.

## **NEONYMPHA AREOLATUS AND NEONYMPHA HELICTA**

### **Separating *helicta* and *areolatus***

*Helicta* (all subspecies) and *areolatus* remain consistently distinct in size, wing pattern, and overall habitat preference throughout their respective ranges. These differences, coupled with their differences in genitalia, lend strongly toward defining these taxa as distinct species. The following will serve as a basic guide to help lepidopterists properly distinguish and separate these two species. However, it should be noted that some phenotypically extreme *N. helicta helicta* individuals can only be positively separated by their genitalia. Also, the *septentrionalis* figured by Howe (1975) is *areolatus*-like in the shape of its spots.

**Flight pattern.** Dr. Richard Arbogast was the first to make the observation that the flight patterns of *areolatus* and *helicta* differed. Dr. Arbogast, as a long time resident of Savannah, Georgia, has collected/observed hundreds of *areolatus* about the marshes and swamps in the Savannah area over the years. After accompanying me on a collecting trip to Aiken County, he pointed out that the Aiken County *helicta* flew higher, faster, and straighter than *areolatus*. Being familiar with *areolatus* in coastal South Carolina, I acknowledged that this was indeed true.

*Areolatus* flies either just above the sedges and grasses or down in them. It also has a rather slow, but darting flight pattern. Female *areolatus* are reclusive and often have to be stirred up to be found. Conversely, *helicta* often fly up to three feet above the grass. Their flight is swift for a satyr, and tends to be much less darting. Female *helicta* are encountered about as often as males.

**Habitat.** I have found *areolatus* only around wet marshy (at least soggy) areas in South Carolina, North Carolina, Georgia, Florida, and Alabama. Ricky Patterson has informed me that this is also his observation for *areolatus* in Mississippi. Leroy Koehn has written that this is the situation in south Florida also. I have found *helicta* only in open, dry, upland sandhill in South Carolina. My Alabama *helicta* were taken in fairly dry, open pine flat woods. Ricky Patterson has also usually found *helicta* in dryer upland habitats in Mississippi. Whereas *areolatus* seems to be limited to wet areas, *helicta* does not seem to be limited to dry areas. In New Jersey, in particular, *helicta*

is directly associated with bogs (Gochfeld, 1998). Dr. Richard Boscoe, who has a great deal of experience in rearing many species of Lepidoptera, has informed me that he considers all *areolatus* and *helicta* to be solely sedge feeders.

In Aiken County, South Carolina *helicta* and *areolatus* are allopatric. I have taken two *areolatus* and observed a few others in the low marshes along the Edisto River at Aiken State Park. *Areolatus* is the only phenotype within this marshy valley habitat. *Helicta* is the only phenotype that occurs in the scrub oak sandhill surrounding the valley. I have found the two species within 2,000 yards of each other at this site. Scott (1986) lists *septentrionalis*, *areolatus*, and *mitchellii* (French, 1889) as sympatric in Hoke County, North Carolina. The data presented by Mather (1965) can be taken to indicate that these two may be sympatric at some Mississippi sites.

**Adult size and wing shape.** In his description of *septentrionalis*, Davis mentions that his new subspecies is markedly larger than Floridian *areolatus*. This is an indicator of speciation. I know of no species of eastern US butterfly that has markedly larger specimens in the northeast than in Florida. The reverse is the rule. This size difference holds true throughout the range of these two species. It is not uncommon to find female *N. h. helicta* and *N. h. septentrionalis* which measure 40 mm or more from outer FW margin to margin when spread. 35 mm is large for *areolatus* females. As a rule, males of the *helicta* subspecies are as large as *areolatus* females. Davis pointed out that the FW margins of *areolatus* are straighter and their FW apex more angulate, while the margins and FW apical area of *septentrionalis*' wings are rounder. I agree that this is the case with *areolatus*. However, not all *helicta* have markedly rounded forewings. I have noted that the HW anal angle is more angulate in *helicta* than *areolatus*.

**Wing color and pattern.** In *areolatus*, the color of the two bands on the VFW is nearly always orange and may often be faint or absent. In the subspecies of *helicta*, these lines are nearly always brown and may often be very prominent. All of the VHW lines are more brownish in *septentrionalis* than in *helicta* or *areolatus*. These HW lines are usually a brighter orange in *areolatus* than in *helicta*. The VHW and VFW median lines are closer together and more parallel on the *helicta* subspecies than on *areolatus*. One of the best distinguishing characters is that on *areolatus* the VHW marginal and median orange lines usually meet at vein  $M_1$  or in the cell just above it (Figs. 1 & 7). In the *helicta* subspecies, these lines very rarely meet at vein  $M_1$  and either remain separate all the way to the costal margin (Fig. 3), or meet about vein  $R_s$ . (Fig. 5). The best pattern character is the size and shape of the VHW eye spots. In *areolatus* these spots are elongate, irregularly narrow, and tend to have prominent yellow areas in the center on at least one or two spots. In the *helicta* subspecies, they are round (especially in males) or ovate (especially in females). These spots are smoothly rounded and usually have little, if any, yellow pupiling in *helicta*. Occasional *helicta helicta* specimens have somewhat elongated eyespots. When this is the case other characters need to be considered. It is quite possible that *areolatus* and *helicta* hybridize in areas where they are sympatric. The antenna of SC *helicta* tend to be more orange (Fig. 2). Coastal SC & GA *areolatus* tend to have dark tipped antenna.

**Genitalia**<sup>3</sup>. The genitalia of both taxa are similar in that they are fairly symmetrical with rather long gnathos. The major differences are: In *areolatus* the terminus of the aedoeagus is beveled. In *helicta* it is rounded and blunt at the terminus. In *areolatus* the gnathos is slightly bulbous at the center, then tapers to a long slender point. In *helicta* the gnathos is robust before tapering to a point. On the interior surface of the valva both species have a lateral projecting, backward pointing barb that looks like a rose thorn just before the distal terminus. In *areolatus* this barb is smooth. In *helicta* it is toothed on the outer edge. There is also a bulbous area on the inner surface of the valva of both species. In *areolatus* this area is rough. In *helicta* it is smooth. Genitalia were examined at 100X.

As there is no type for *Papilio areolata*, I have designated a male I collected 2 September 1989 at Pine Barrens Road, Chatham County, Georgia as neotype of *Papilio areolata* J.E. Smith, 1797 (Fig. 1). It has been appropriately labeled as neotype and deposited in the Allyn Museum of Entomology (AME), Sarasota, Florida. This specimen becomes the type for *Neonympha areolatus*. I restrict the geocological type locality of *Papilio areolata* to the marshy sedge forests of coastal Georgia.

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<sup>3</sup> In their recent book on New Jersey butterflies, Gochfeld and Burger (1998) accurately state that the genitalia of *areolatus* and *septentrionalis* (= *helicta*) differ and that the two are probably distinct species. Unfortunately, they unscientifically list the entity as *Neonympha septentrionalis* and then give it the inappropriate common name of Lakehurst Satyr (see under etymology below for the correct common names).



## A NEW *HELICTA* SUBSPECIES FROM DADE COUNTY, FLORIDA.

There are two populations of *Neonympha* in southern Florida of uncertain taxonomic standing. Both of these populations have the anal angle of the HW angulate to the degree of tending to be lobed. They also tend to have the anal margin of the VHW moderately to heavily covered with whitish scales (especially the southwest FL *areolatus* segregate). The lobed HWs of these *Neonympha* are reminiscent of tropical Satyrinae in the genera *Cissia* Doubleday, 1848 and *Cyllopsis* Felder, 1869.

The *helicta* isolate in the southeast corner of Florida south of Miami is mentioned by Scott (1986). He refers to this “strangely” disjunct population in his discussion of the range of *septentrionalis* on page 238. This population is phenotypically distinct from neighboring populations of typical *N. areolatus* just to the north, but less so from the atypical *areolatus* west of it. In its morphological features, it appears to be a subspecies of *helicta* with large “blind” eyespots (Fig. 13) reminiscent of *Enodia portlandia floralae* (J.R. Heitzman & dos Passos, 1974). Its ventral ground color is much darker than in *helicta helicta*. Occasional specimens vary toward *areolatus* – VHW orange bands meeting at  $M_1$  (Fig. 13).

The variation in this population leads me to wonder if it is either a relict link between, or actual ancestor of, both *areolatus* and *helicta*. Further, in its distinction from, or connection with, both *helicta* and *areolatus* it may not have followed the same evolutionary path as the populations that moved north. This *helicta* population solicits a great deal of evolutionary study. It is entirely possible that while *helicta* and *areolatus* have clearly evolved into distinct species in the non-Floridian part of their range, they may not have evolved far beyond a subspecific relationship in extreme south Florida. If this is the case, it will be problematic to those taxonomists who approach their craft with fossilized rigidity rather than living fluidity.

The *N. areolatus* populations of southwest Florida may also represent a weak, but evolutionarily definable, subspecies (Fig. 8). They differ from toptotypical *areolatus* primarily by having the anal margin of the VHW strongly and broadly overlaid with whitish scaling; and are *helicta*-like in that the bands of the VHW tend to meet at vein  $R_s$  and not  $M_1$ . The light anal margins are a striking trait. Because these *areolatus* are not isolated from the other *areolatus* in the rest of the Florida peninsula, their possible subspecific status will need to be evaluated against the examination of a large sample of specimens from throughout the state. I do not see a problem in the identifiability of the southwest Florida *areolatus*. The problem is in determining the boundaries of this likely clinal entity. I hope someone will undertake this in the near future.

Like *Papilio aristodemus ponceanus* Schaus, the southeast Florida *helicta* isolate’s range is very restricted. It is definitely known only from the vicinity of Florida City, specifically the area of Carde Sound Road. Leroy Koehn has seen one specimen from north Key Largo, but considers this a stray. However, and hopefully, it may also occur sympatrically with *areolatus* across extreme south Florida to the Fakahatchee Strand, Collier County. I have seen only about 20 specimens from this area, but a couple of them look like good *helicta* to me. I have not examined the genitalia of any of these.

Koehn and Jeff Slotten have both informed me that its numbers appear to be in decline in the Carde Sound area. Its greatest threat is from urban development and agricultural encroachment – not butterfly collectors. It is amateur butterfly **collectors** that discovered it and are trying to protect it!

It may be premature to describe this isolate as a subspecies now. However, I feel this population needs official scientific recognition (to help qualify it for environmental protection) more than it needs additional study (which could take years). One of the primary goals of *The International Lepidoptera Survey* is to discover, determine, and document taxa before they become extinct. We would hate to see this become another *Philotes sonorensis extinctis* Mattoni, 1991 (a well known, but very geographically restricted, Sonora Blue subspecies which was described only after becoming extinct as a result of governmental land mismanagement). If in time it is determined that this population is not subspecifically distinct from *helicta helicta* someone can always sink it later. Thus, for the above stated reasons, I now describe this population as *Neonympha helicta dadeensis*.

## *Neonympha helicta dadeensis* Gatrelle, new subspecies.

**Diagnosis and description.** *Male* (Fig. 6): All appendages and markings as in *helicta helicta* except as follows. *Ventral forewing*: brown ground color much darker than in *helicta*, but not quite as dark as in *septentrionalis*, darker than in *areolatus*; transverse median bands similar to *areolatus* – tending to orange and not prominent. *Ventral hindwings*: marginal and median bands tending to *areolatus* – more orange, seldom open at the costal margin, and usually meeting at vein Rs; eyespots ranging from as in *helicta* to very broad and often touching each other at the veins, never with yellow pupils; the anal margin always with more white scaling than in nymotypical *helicta*, but rarely as heavy as in southwestern Florida *areolatus*; anal angle quite angular, pronounced, and often slightly lobed. *Female* (Fig. 12): As in the *dadeensis* male except as follows. *Ventral forewing*: brown ground color lighter with the transverse bands a little more prominent; may have one or two tiny eyespots in the submarginal area. *Ventral hindwings*: marginal and median bands more orange, occasionally open at the costal margin, usually meeting at vein Rs, and rarely at M<sub>1</sub>; whitish scaling along the anal margin not as pronounced; the anal angle angulate but not as lobed.

**Types.** *Holotype* ♂ (Fig. 6): Carde Sound Road, Dade County, Florida, 22 November 1989. *Allotype* ♀ (Fig. 12): Carde Sound Road, Dade County, Florida, 24 Nov. 1989. *Paratypes*: 27 ♂♂, 11 ♀♀: all FLORIDA, Dade County, Carde Sound Road: 4 ♂♂, 2 ♀♀, 10 May 1991; 11 ♂♂, 4 ♀♀, 18 Nov., 5 ♂♂, 1 ♀, 22 Nov., 1 ♂, 3 ♀♀, 24 Nov. 1989; 3 ♂♂, 1 ♀, 10 May 1990 (leg. Slotten); 3 ♂♂, 9-11 March 1987 (leg. ?). The Holotype and Allotype are deposited in the Allyn Museum of Entomology, Sarasota, Florida. Paratypes are distributed as follows: Jeff Slotten, Gainesville, FL (4); MOTH, Goose Creek, SC (3); Leroy Koehn, Lake Worth, FL (31). All type specimens were collected by Leroy Koehn unless otherwise noted.

**Etymology.** *Dadeensis* is named for Dade County, Florida – the only area from which it is currently known. I suggest **Miami Helicta** as its common name. **Helicta Satyr** is the common name of *Neonympha helicta*. **Northern Helicta** is the proper common name of *Neonympha helicta septentrionalis* (*septentrionalis* means northern).

**Remarks.** The holotype is somewhat atypical in that its VHW eyespots are slightly smaller than average. I utilized it because of its excellent condition. **Figure 13** is a male paratype with larger fused eyespots. The type locality of *N. h. dadeensis* is Dade County, FL. At present, the ranges of the three *helicta* subspecies are not known to come into contact. There are no known blend zone populations. Leroy Koehn first found *dadeensis* on 9 May 1972. The two males he collected then, plus four pair he took in 1982, are now in the Carnegie Museum NH, Pittsburgh. I emphasize again that the taxonomic relationship of the south Florida *dadeensis* and *areolatus* populations is unsure and needs more study. All photos were taken outside in full sunlight which brings out the natural colors and highlights of butterflies.



Fig. 13

## ACKNOWLEDGMENTS

Special thanks to: Dr. Gerhard Tarmann for supplying a color copy of the original *helicta* plate; Leroy Koehn, Jeff Slotten, and Ricky Patterson for their field observations and loan of specimens; Ben Gatrelle for photography and computerization of photos.

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