

# *The International Lepidoptera Survey*

## newsletter

2:2 August 2000



### Brephidium isophthalma insularus

Pavulaan & Gatrell described *Brephidium isophthalma insularus* 15 April 1999 in *TTR* 1:7. The geocological type locality is: coastal tidal flats in Beaufort County, South Carolina. At the time of *insularus*' description the authors were uncertain about the northern limits of the subspecies range and the population density in coastal South Carolina. Thus, Gatrell made a concerted effort in March of 2000 to check the density of the population in the area of Edisto Island in Charleston and Colleton counties South Carolina. His report is as follows.

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According to Radford et al in *Manual of the Vascular Flora of the Carolinas*, the Island Pigmy Blue's larval host, *Batis maritima* L., does not range north of Charleston County, SC. This would correlate to the range of the Pigmy Blue in Opler and Krizek (1984) page 110.

The southern half of the South Carolina coast is a broad tidal plain of salt and brackish marshes formed by the areas many river deltas and tidal creeks. These creeks wind around the higher ground creating hundreds of island habitats. These islands usually have Juniper, Palm, and Myrtle thickets around their perimeter and predominantly hardwood forest cores dominated by various Oaks. Above Charleston, the primarily Pine maritime forest usually comes all the way to the coast. In this area, tidal creeks and salt marshes are uncommon except in the vicinity of the Santee River delta.

The winter of 1999 was one of the warmest on record in coastal South Carolina. However, there was a period of about two weeks in January with below normal cold weather accompanied by snow on two successive days (the areas first snow in 10 years).

From 14 March to 1 April I found *insularus* to be abundant and wide spread in the Edisto area from the ocean to 18 km inland at Jehossee Island. This not only confirms that *insularus* is resident to south coastal South Carolina, but is a hardy and common part of that area's lepidopteran fauna.

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Dr. John Rawlins of the Carnegie Museum wrote Mr. Gatrell questioning the correctness of the Latinized spelling as *insularus*. His question related to the genderization of the base term, insular. His suggestion is that the correct spelling should be *insularis* (feminine) rather than *insularus* (masculine).

The position of Pavulaan and Gatrell is as follows. First, the **um** ending of *Brephidium* is understood to be neuter (**neither** male, female, or common) based on 30.2.4 of the ICZN code. Therefore, species/subspecies names within the genus may be **either** male, female, or common. Second, if *insularus* is found to be specifically distinct from *isophthalma* (feminine) there would be no need to make the ending female rather than male.

It is also the understanding of Gatrell that the **is** suffix (as in *exilis*) is often a Latinized form of the Greek. In which case the **is** may be either male or female. The *TTR* position is that no change should be implemented until both the taxonomic and grammatical questions are settled conjunctively.

### Lepidopterists' Society Annual Meeting

*The Lepidopterists' Society* held its annual meeting 26-30 July on the campus of Wake Forest University in Winston-Salem, North Carolina. It was a tremendous meeting. Every paper presented was top notch, the campus and facilities were beautiful and accessible, the food was very good, everything was just great.

*The International Lepidoptera Survey* had a table set up Friday and Saturday manned by *TILS* founder Ron Gatrell. All of our publications were available (including the recent *Phyciodes batesii maconensis* Survey Report) and *TTR* Volume One on CD. Ron also brought along a drawer of paratypes from the museum collection. Several *TILS* subscribers/members were in attendance and five other individuals became subscribers at the meeting. We had hoped to see a few more of you there.

The last Lep. Soc. meeting Ron was able to attend was in Georgia a few years ago. Ron, who in the 1970's was a member of the Lep. Soc.'s Executive Council, feels that the *Lepidopterists' Society* is in a slow but steady decline – too many of the attendees were old gray heads with too few under 35. Even among the “old guard” there were several notable persons absent from this year's meeting.

The *Lepidopterists' Society* is (by far) the world's premier organization in this field. The problem is that the new generation doesn't know this – they think the watcher groups are. We at *TILS* fully support the *Lepidopterists' Society* and hope it is able to gain back ground from the anti-collecting groups whose leaders are so obviously absent from meetings like this. The *Lepidopterists' Society* should quit pandering to the anti-collecting-agenda people in its *News* articles – they have no intention of giving collectors “equal time” in their publications.

## Phenosyncronic subspeciation

I introduced the term **phenosyncronic subspeciation** into the scientific vocabulary in *TTR* 2:2 (see pages three and four of 2:2). In simple words, the term is the taxonomic equivalent of the well known colloquial idiom: “just because two sisters look the same it doesn't mean they are the same”. In more complex terms, phenosyncronic and subspeciation are antithetical – phenosyncronic (much the same) subspeciation (different). Hence, the same but different.

Phenosyncronic should be pronounced as *pheno-sync-ronic* (emphasis on sync) and not *pheno-syn-cronic*. In coining the word I left the **h** out from the larger root *synchronous* to emphasize the basic Greek root *syn* (co-) as used in the common vernacular *sync* (together). I kept *ron* out of *chronus* (from the root Greek for “time”) and added the common suffix **ic**. *Pheno* (visible via reflected light) *sync* (together) *ronic* (through time). Thus, it should **not** be spelled *phenosynchronic* nor pronounced *pheno-syn-cronic*. It is a new word.

Here is how it works. As a species' components evolve into subspecies the general appearance (phenotype) of each subspecies usually becomes different from the others. Phenosyncronic subspecies, while having evolved in some significantly different ways (e.g. differing acceptable larval host plants), have evolved in parallel (in sync) in the way they appear. Thus, to qualify as phenosyncronic subspecies there must be at least two **subspecies** which, in the course of their otherwise divergent evolution, have simultaneously developed parallel phenotypes. However, this is not as simple as it may appear.

For example, *Limenitis archippus watsoni* is a valid subspecies found along the west central US Gulf Coast (type locality, Alexandria, LA). It is quite distinct in its phenotype from both *L. a. archippus* and *L. a. floridensis*. However, there are also many populations from the panhandle of Florida, across south Georgia, and up the east coast to at least North Carolina that have many *watsoni* like specimens in them. Are these then *watsoni* too? Are they a phenosyncronic subspecies? The answer to both questions is absolutely no. Why?

First, regardless of how much some of these southeastern specimens may look like *watsoni* they are not that **subspecies** because they **come** (not came) into being in a very different way. *Watsoni* evolved from a dark refugium **subspecific** population in Texas/Mexico that has spread north and east along the west central Gulf Coast. The eastern *watsoni* like specimens are the tension zone offspring of *floridensis* (from the island Florida refugium) and *archippus* (from the mainland southern Sand Hills refugium – and its symbiotic parallels westward to the southern Great Basin!). Thus, even though they look very similar in some specimens, they are far from the same taxon. That is, they are neither phenosyncronically nor subspecifically related. They should continue to be classified as *floridensis/archippus* intermediates because they are not assignable to any subspecies. However, no one can predict what (if anything) these eastern *watsoni* like populations will evolve into in the distant future.

– Ron Gatrell

Be watching for *The International Lepidoptera Survey* interactive web site.

## A Day of Collecting in Burke County Georgia

by Ron Gatrell

On 3 August 2000 I got up early to once again make the three and a half hour trip from Charleston, South Carolina to Burke County, Georgia. I've been making this trip sporadically over the last twelve years because the area of Burke and Screven counties is a taxonomic "gold mine." It was from this area of the new world that colonial naturalists, like John Abbot, discovered and brought to scientific light about forty new taxa of Lepidoptera.

There is no direct route from Charleston to that part of Georgia, and when I get there I'm just as apt to find nothing as something. There are no "great spots" there teeming with dozens of species or hundreds of specimens. What I usually find are just a few individuals of common species. However, a great many of these specimens are topotypes – representatives of nominotypical populations.

While these specimens have no economic value (or even exchange value), to a taxonomist like myself, they have great scientific value. When I find such wide ranging and common species there as *Wallengrenia otho*, *Poanes zabulon*, *Lerema accius*, *Erynnis briso*, *Papilio troilus* "ilioneus", *Zerene cesonia*, *Pontia protodice*, *Incisalia niphon*, *Satyrium titus mopsus*, *Junonia coenia*, and *Asterocampa celtis* I am looking at examples of the typical race of each of these. Further, many of these topotypes will eventually become neotypes as there are no type specimens for the vast majority of the forty some species originally described from this area.

I crossed over into Georgia via Hwy. 301 at about 9 a.m. on the 3<sup>rd</sup>. That day I turned north at the first paved road off 301. After a few miles this road makes a turn to the left and heads west. Rather than making this turn I went straight onto a dirt road which continues to parallel the Savannah River for many miles. This road is named River Road. Every few miles there are roads to the east off of River Road that lead to boat landings on the Savannah River. This day I would be investigating these landings all the way north to where Hwy. 80 dead ends into the Savannah River south of Augusta. There were also a couple of areas off of River Road to the west of the Georgia Nuclear Power Plant that I wanted to check out.

There are two basic habitats in this area: the Savannah River Valley to the east of River Road and arid scrub oak sandhill to the west of River Road.

The primary species I was targeting on 3 August were topotypes of *Megathymus cofaqui cofaqui* and *Chlosyne ismeria ismeria*. I spent all of the morning on up to 1 p.m. searching about 200 *Yucca filamentosa* plants for *cofaqui* pupae. I found two. I also observed about 20 active larval tents of toponotypical *M. yuccae yuccae*. Most of the plants were in an "old field" type of habitat. However, both *cofaqui* and all of the *yuccae* tents were in woods or woods edges around this field. Perhaps this is because the field was heavily populated with colonies of a large species of stinging red ant that seemed to prefer building their broad nests among the yuccas.

I was occasionally distracted from my *cofaqui* search by various butterflies which I took time to net and examine. I took several *Papilio troilus* form *ilioneus* topotypes for use in my current study of *troilus*. (My paper on this will be out before the end of the year.) A pair of toponotypical *Z. cesonia* were observed in the old field as well as a non mating pair of toponotypical *A. celtis celtis*. I collected the female (figured on page 5) as I had not previously taken a sample female of the nominotypical *celtis* population. I had also never seen *celtis* before at this particular site which is dry sandhill. *Celtis* and *clyton* abound in the Savannah River valley areas.

Leaving the *Yucca* area I decided to do some exploring and turned down a dirt road called Jack Delaigle Rd. A couple miles later it intersected with Son Delaigle Rd. Really! Just past this intersection I saw a large white butterfly nectaring at a patch of big white morning glories. My first thought was that it was a stray *Acsia monuste*.

Would this turn out to be an individual topotype of the never before collected *A. m. cleomes*? Upon collecting the specimen it turned out to be a very pale green (almost white) *Phoebis sennae eubule*. I have observed tens of thousands of *sennae* from Iowa to California to Florida to Virginia and have never seen a specimen even close to this one. It is fairly fresh and not faded. The back of the thorax and abdomen is black. The leading edge of the forewing is dark gray. At one point I thought it might be a female of *Aphrissa staira floridensis* as it is lightly dusted with yellow near the base of its wings. However, the nearly absent ventral markings are typical *sennae*.

It was now about 2 p.m. so I decided to check the landings so I could visit them all before 6 p.m. which would be about the time I'd need to head back to South Carolina to check a couple landings there before it got dark. I first checked out the area where I discovered *C. ismeria*. There were several species at this site but no *ismeria*.

The only specimen I collected there was a fresh *Celastrina neglecta* male. There are two *Celastrina* species which fly in the fall in this area of South Carolina and Georgia. One is certainly *neglecta*. The other is undoubtedly an undescribed species. It is large and marked similarly to Central American *gazora*. These unusual fall specimens may also be a partial second brood of a very pale undescribed spring species which flies after *idella* and *ladon* but before *neglecta* in this same region. It is much lighter than all three of these species. I had hoped to describe this this year, but that is not going to happen.

The next two landings I checked out were the Georgia Power Landing and Brigham Landing. I was somewhat surprised to find a number of fresh male *Eresia texana seminole* at both. This was my first encounter with this species in Burke County. It is possible that this is a county record.

These landings are good places to collect or observe butterflies as they gather at mud, discarded fish parts, open trash cans, or empty beer bottles (Red-Neck litter). *Battus philenor*, *Limenitis arthemis astyanax*, *Libytheana bachmanii*, *Asterocampa celtis*, and *A. clyton* are especially common at these landings. In *TTR* 1:5 I designated neotypes for *A. celtis* and *A. clyton* from the Brigham Landing site. So I decided to collect three topotypical *celtis* to add to the museum collection.

I didn't pay much attention to the three fresh *celtis* males I collected until I returned to South Carolina and began to mount them. Two were typical *celtis* but the third was a classic *A. celtis reinthali*. This was the most important specimen I collected all day – *celtis* and *reinthali* sympatric! Now I wished I had taken a long series. *A. c. celtis* is much smaller than *reinthali*. This is clearly depicted in *TTR* 1:5 figures 2 & 3. These two taxa are also marked and colored differently. In *celtis* the DFW PM band is white while in *reinthali* it is often very yellowish. The ground color is grayish brown in *celtis* and yellow brown in *reinthali*. The DHW veins of *celtis* are black and may be very bold while in *reinthali* these veins are much the same color as the ground or only slightly darker.

Burke County *celtis* are identical to specimens I have from my home state of Iowa, and now typical Floridian *reinthali* has been found in Burke County also. The late Dr. Reinthal had determined through his research that the Floridian *Asterocampa "celtis"* (which he incorrectly referred to as *alicia* – a west central Gulf Coast endemic) and *celtis celtis* were two species. Friedlander said they were subspecies. If these two are fully sympatric at this location in Burke County, it goes a long way toward proving that Dr. Reinthal was correct and these two taxa are in fact distinct species. The larva of *celtis* and *reinthali* differ in their antler scoli. Friedlander only assumed a blend zone based on his subspecies theory – but to date none has been found to exist in nature.

It is days and discoveries like this that keep bringing me back to Burke and Screven counties Georgia. Perhaps on my next research trip to this area I'll again visit the Millhaven (formerly Milltown) Plantation and Brier Creek which bisects it in Screven County. I remember the first time I got permission to collect there. John Abbot had collected on this same plantation, and there I was at perhaps the same spot almost 200 years later – and finding the same butterflies and skippers: *ilioneus*, *gorgone*, *ismeria*, *celtis*, *arsace*, *otho*, *accius*, *yuccae*. Yes, I'll definitely be going back – after all, I still have not found *lygdamus* or *arpa* there.




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**At Left**

**Top:** neotype ♂ *Asterocampa celtis*  
Brigham Landing, Burke Co., GA.

**Bottom:** typical ♂ *Asterocampa reinthali*  
Berkeley Co., SC.

(Picture reproduced from *TTR* 1:5 Fig. 3)

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**At Right**

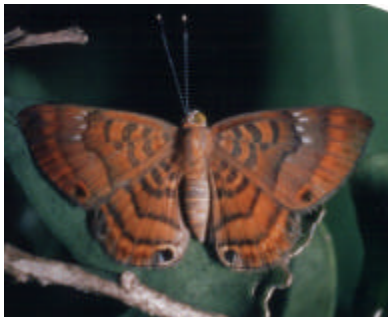
**Top:** toptype ♀ *Asterocampa celtis*  
Ebenezer Rd. Burke Co., GA.

**Bottom:** typical ♀ *Asterocampa reinthali*  
Berkeley Co., SC.

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Gatrelle's critique (*TTR* 1:5) of Friedlander's position on southeastern *Asterocampa celtis* concluded that Friedlander was: 1) remiss in failing to examine toprototypical specimens from Burke or Screven counties Georgia, and thus 2) premature in his taxonomic realignments of taxa, and 3) in error by not recognizing *alicia* as a valid taxon. Now that typical *reinthali* and *celtis* have been found together in Burke Co., GA, the *TTR* position is that the alignment put forth by Reinthal (based on his research) should be retained, and these taxa considered as distinct species. From Canada to Burke County, there is no change in the size and minimal change in phenotype of *A. celtis celtis*. From Florida to Burke County there is no change in the size or phenotype of *A. reinthali*.



**Left:** ♀ *Dianesia carteri*, N. Andros, Bahamas.  
Photographed by Frank Rutkowski.

**Right:** ♂ hybrid *P. troilus* x *P. palamedes*.  
Reared and photographed by Harry Pavulaan.



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