Notes on *Erynnis baptisiae* in Florida, documenting its widespread occurrence in northern peninsular counties, and a new larval foodplant (*Lepidoptera: Hesperiidae: Pyrginae*)

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*Erynnis baptisiae* has been poorly documented from Florida. While it was reported from “Florida” in its original description (Forbes 1936), specific details on Florida records have remained sparse, and widespread confusion with other *Erynnis* species has made it difficult or impossible to interpret and verify historical records. Evans (1953) cited 14 males and 2 females of *E. baptisiae* from Florida in the Natural History Museum, London. Burns (1964) reported *E. baptisiae* from “St. Augustine [St. Johns Co.] and Tampa [Hillsborough Co.],” with no additional details. Kimball (1965) listed the species from Florida, referring to the specimens cited by Evans (1953) as the “entire local record,” but also reported two localities for *E. persius* Scudder, noting that they “undoubtedly” refer to *E. baptisiae*: “Dunedin [Pinellas Co.], April” and “Osprey [Sarasota Co.], March.” Seemingly far out of range, and without known specimens to back them up, none of the latter records were repeated by subsequent authors.

At our request, John Chainey of the Natural History Museum, London, examined the 16 specimens that Evans (1953) reported from Florida. Only seven males actually possess locality labels and they read simply “Florida” with no additional data. They are from the collection of the French entomologist Charles Oberthür (1845-1924), whose Hesperiidae were purchased by the museum in 1931 from his brother René Oberthür (1852-1944). The remaining nine specimens are unlabeled and it is unknown why Evans included them within the series from “Florida.” We received photographs of those labeled “Florida” and they do represent *E. baptisiae*. Although these specimens were once accepted as the only evidence of the presence of *E. baptisiae* in Florida, their lack of additional data and unknown provenance bring their validity into question.

The Butterflies and Moths of North America (RAMONA) website records *E. baptisiae* from eight counties in the Florida panhandle: Okaloosa, Washington, Jackson, Gadsden, Liberty, Leon, Jefferson, and Madison, as well as Duval County in the northeastern corner of the peninsula (Lotts & Naberhaus 2015). Records from Gadsden and Madison counties were entered during the creation of the website, and specific details are unavailable; misdeterminations cannot be ruled out. The record from Liberty County is based on a photograph of a male (ID’d by JVC) taken by Jeff Ward at Torreya State Park on 8 March 2015 (see below for additional records from Liberty Co.). The report from Leon County is untraceable and cannot be verified. The record from Jefferson County was reported by Mather (1975), from “Monticello, 31-VII-1974, R. Leuschner”; we’ve been unable to verify this record. The record from Jackson County is based on its inclusion on a list of the fauna and flora of Florida Caverns State Park (Anonymous 2006), although the source of their data is unknown. The Washington County record is based on three adults observed and a photograph (ID’d by JVC) taken by MaryAnn Friedman on 6 June 2009, and there are multiple valid records from Okaloosa County (see below). The peninsular record, from Duval County, was included on a distribution map formerly maintained by H. David Baggett (photocopy in possession of JVC), but no specific details were included. This species was also listed by FFWCC (2004) from the Blue Springs Longleaf Tract of Twin Rivers State Forest, Hamilton County, but the source and validity of this report are also unknown.

While curating the genus *Erynnis* in the collections of the McGuire Center for Lepidoptera and Biodiversity (Florida Museum of Natural History, University of Florida), ADW found four male specimens of *E. baptisiae* labeled from Florida (identities confirmed by genitalic examination). Two of these are from Okaloosa County in the western panhandle: Shalimar, 13-IV-1963, H. H. Hilton; Eglin AFB, 3-IV-1963, H. O. Hilton. The third male is from “nr. Bristol, Liberty Co., 1-X-1983, W. L. Adair.” The fourth male is labeled from “orange grove at N end of town, Umatilla, Lake Co., 18-VII-1993,” collected by R. F. Hirzel. This last record, possibly miscollected, is discussed below.

Minno et al. (2006) reported finding *E. baptisiae* in Okaloosa County (Keppner Pond, within Eglin Air Force Base, ca. 5 mi N Niceville) on 21 June 2005. Several *Erynnis* larvae were found feeding on *Baptisia calycosa* var. villosa Canby. Two were successfully lab-reared on that plant and produced adults of *E. baptisiae*. MaryAnn Freidman observed and photographed adults of *E. baptisiae* at several localities in proximity to *Baptisia calycosa* within Eglin Air Force Base in Okaloosa and Santa Rosa counties. The dates and
number of adults seen are 23 July 2005 (1), 10 August 2008 (1-2), 13 August 2008 (1), 15 August 2008 (7), 22 August 2008 (4), and 22 July 2009 (2). On several occasions she observed oviposition and presumed early stages of *E. baptisiae* on *B. calycosa*. No adults were seen, but a larva was also found on *B. calycosa* on 30 August 2008.

In 2005, *E. baptisiae* was encountered in Liberty County (nr. Cotton Landing, Apalachicola National Forest), where larvae were found feeding on *Baptisia lanceolata* (Walter) Elliott, and a female was seen attempting to oviposit on *Baptisia simplicifolia* Croom (Minno et al. 2006). Several observers, including Dean and Sally Jue, reported adult *E.
baptisiae at this and three nearby sites, on 28 May 2005 (1),
(2), and 29 March 2009 (2-3). On 13 August 2009, the Jues
recorded 4 or 5 adults and two larvae of E. baptisiae on B.
lanceolata at another locality in Liberty County, also within
Apalachicola National Forest. On 28 September 2013,
Virginia Craig photographed E. baptisiae in proximity to
a species of Baptisia within Apalachicola National Forest
in western Wakulla County. These records, mapped in
Figure 19, confirm the continued presence of E. baptisiae
in the Florida panhandle, including in the vicinity of Eglin
AFB, where specimens were collected in 1963. Most of
the records between 2005 and 2013 are databased by the
Florida Natural Areas Inventory (FNAI). We recently
examined the photographic records from the Florida
panhandle and confirmed their identities as E. baptisiae.

On 16 April 2011, BB photographed a single fresh female
of E. baptisiae (Fig. 1) at Ralph E. Simmons Memorial
State Forest, in far northern Nassau County, representing
the first known record of the species from that county
and the first verified record from the peninsula. This photo,
however, wasn’t identified as E. baptisiae until April 2015
(ID confirmed by JVC and ADW).

On 23 May 2015, ADW located a large population of E.
baptisiae at Jennings State Forest in Clay County, in the
northeastern corner of peninsular Florida, nearly 46 air
miles south of the Nassau County locality (Fig. 19). About
20 individuals were observed and photographed (Figs. 2,
3) between 12:30 – 17:30 hrs., all of which were closely
associated with Baptisia lecontei Torr. & A. Gray (Fig.
13), the only apparently suitable larval foodplant in the
area. Hundreds of B. lecontei plants were present (Fig.
14), and one attempted oviposition by E. baptisiae on B.
lecontei was observed. Adults of both sexes fed at flowers
of B. lecontei (Fig. 3), as well as at flowers of Pediemelum
canescens (Michx.) Rydb., and an unidentified low-growing
white-flowered legume. On 24 and 25 May, BB returned
to Jennings to observe and photograph E. baptisiae, where
he documented ovipositions on B. lecontei (Figs. 4-7), thus
confirming this as a larval foodplant for E. baptisiae. On
27 May, JVC explored Jennings State Forest and found E.
baptisiae at a second location within the forest (Fig. 15),
where B. lecontei is abundant. Here, about 20 adults were
observed between 15:00 and 17:00 hrs. (Fig. 8), with at
least one oviposition on B. lecontei. Two days later, on 29
May, ADW returned to Jennings for additional exploration
of habitats for E. baptisiae, and documented the species
at a third site within the forest, where ovipositions on
B. lecontei were also observed, demonstrating that E.
baptisiae is quite widespread within Jennings State
Forest, apparently wherever B. lecontei is common.

The realization that E. baptisiae is utilizing Baptisia
lecontei as a larval foodplant – an apparently new foodplant
record for the species – suggested that searches in other
areas where B. lecontei is common might reveal additional
peninsular Florida populations of E. baptisiae. Kartesz
(2015) indicates records of B. lecontei from the following
peninsular counties: Alachua, Baker, Citrus, Clay, Colum-
bia, DeSoto, Dixie, Duval, Gilchrist, Hamilton, Hernando,
Highlands, Hillsborough, Lafayette, Lake, Levy, Marion,
Orange, Pasco, Pinellas, Polk, Sumter, and Suwannee.

Herbarium records for B. lecontei from Florida were ac-
cessed online (Wunderlin & Hansen, 2008), and locality
details from thirteen peninsular counties were recorded. On
30 May, ADW searched sites reported for B. lecontei in Dixie,
Lafayette and Columbia counties. No B. lecontei plants
were located in Dixie County. Numerous B. lecontei were
located in Lafayette County, at and adjacent to the Grady Con-
servation Area, yet no E. baptisiae were found. Late in the
day, at 18:00 hrs., the pine flatwoods at the south entrance
to Ichetucknee Spring State Park, Columbia County, were
searched, revealing a large population of B. lecontei with
many hundreds of plants (Fig. 16). Two male E. baptisiae
were found and photographed at this locality (Fig. 9).

The following day (31 May), ADW searched the sandhill
habitats SW of the north entrance to Ichetucknee Springs
State Park, Suwannee County, and located a massive stand
of B. lecontei comprised of many thousands of plants (Fig.
17). Here, E. baptisiae was found to be relatively common.
About 20 individuals were observed and photographed
between 11:30 and 12:30 hrs., and several ovipositions on
B. lecontei were recorded and photographed (Figs. 10, 11).
Most adults observed were females, and they were mainly
in rather worn condition.

During the afternoon of 31 May, ADW explored areas in
northern Gilchrist County, where another very large stand
of B. lecontei was located, comprised of several thousand
plants, at Fort White Mitigation Park (Fig. 18). Again,
about 20 adults of E. baptisiae were found between 13:30
and 15:00 hrs., mostly females that were in rather worn
condition. One female was photographed (Fig. 12) and
ovipositions on B. lecontei were observed.

During the spring of 2015, adults of E. baptisiae were
observed during most of the day, from about 09:30 to 18:30
hrs. They were mainly active under sunny conditions,
when most feeding and ovipositions were observed. The
butterflies were most lively during early afternoon, when
they were very difficult to approach or photograph; males
rarely stopped as they patrolled for females around B.
lecontei plants. Although adults were only found in direct
association with the foodplant, they probably strayed into
surrounding habitats to reach additional nectar sources.
The authors have observed this behavior in association
with populations outside of Florida.

All peninsular populations of E. baptisiae discovered dur-
ing the spring of 2015 occur in fire-maintained pine flatwood
or sandhill habitats, which appear to have been burned in
the past two to five years. Baptisia lecontei responds very
well to burns and was the dominant ground cover at a
few recently burned sites where E. baptisiae was found

(Ichetucknee State Park, Suwannee County; Fort White Mitigation Park, Gilchrist Co.); the plant apparently becomes scarce as the understory matures, crowding it out within a few years after a fire. We therefore believe that management of pine flatwoods and sandhill habitats through controlled burns (provided that adjacent sites support *B. lecontei* and *E. baptisiae*) may be the best way to maintain, and even expand, suitable habitats. Under ideal...
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Fig. 19. Map of northern and central Florida showing verified records of *E. baptisiae*.

conditions, such as following a fire, the foodplant erupts to become locally common, resulting in an associated abundance of the butterfly. It is likely that *E. baptisiae* is naturally fire-dependent, particularly in the southeastern states, where pine flatwoods habitats are rejuvenated by such disturbances. In fact, fire may be an important factor in the germination of *Baptisia* species (Young et al. 2006). This butterfly was found in similar habitats in the Florida panhandle, though it is unknown if those localities were previously burned, or if so, when (FNAI data). One site in Liberty County was described as a fairly pristine longleaf pine/wiregrass community (FNAI data).

The documentation of *B. lecontei* as a larval foodplant for *E. baptisiae* has allowed us to conduct targeted searches for the skipper in peninsular Florida, where it is likely to be the primary larval foodplant. However, other *Baptisia* species are surely used where they grow in abundance, especially in the Florida panhandle (as detailed above) and in northern peninsular counties. A search for *B. lecontei* at Ralph E Simmons Memorial State Forest by BB on May 27 was unsuccessful, although *B. lanceolata* was found in abundance, suggesting that it may serve as the primary, or only, larval foodplant for *E. baptisiae* there.

The southern distributional limits of *E. baptisiae* in peninsular Florida remain to be determined. A cursory search through the central portion of the Citrus Tract of the Withlacoochee State Forest by JVC on 30 May revealed only a single plant of *B. lecontei*, although more exploration in the various tracts of this large forest is needed. A site with many thousands of *B. lecontei* plants was located within Goethe State Forest in Levy County by ADW on 6 June, but no *E. baptisiae* were found. However, given the mostly worn condition of *E. baptisiae* adults a week earlier, about 40 air miles to the north, the search may have been conducted a week or two too late to detect *E. baptisiae* adults. The 2015 spring season was generally advanced, with many butterfly species peaking two or three weeks earlier than normal. Previous records from the panhandle suggest that the peak flight of the second brood of *E. baptisiae* in northern Florida is typically during the first week of June. Based on available data from Florida and surrounding states, we estimate that at least three broods of *E. baptisiae* are produced in Florida, with adults flying from mid-March to early October. The first individual of the third brood in 2015, a fresh male, was photographed by BB at Jennings State Forest on 14 July.

Given our discoveries during the spring of 2015, searches for sites with abundant *B. lecontei* should be conducted in all counties where the plant has been reported. We do not expect *E. baptisiae* to be found in all counties where *B. lecontei* is known, but believe that additional populations of the butterfly are likely to be found wherever the plant is abundant. Given the known distribution of *B. lecontei*, the presence of *E. baptisiae* in central peninsular Florida cannot be ruled out. However, even if the old, southernmost reports of *E. baptisiae* from Pinellas, Hillsborough and Lake counties are valid, habitat destruction and fragmentation in these areas has likely restricted its occurrence to very isolated, localized populations. The report of *E. baptisiae* from Sarasota County (Kimball 1965) is almost certainly based on a misidentification, as no species of *Baptisia* is known from that county (Kartesz 2015).

Historically, *E. baptisiae* was considered to be a rare species throughout its range, but it’s relatively recent acceptance of exotic crowntch (*Securigera varia* (L.) Lassen) as a foodplant has resulted in its rapid expansion and increased abundance in many areas of eastern North America. Throughout its range, *E. baptisiae* is still relatively rarely encountered within natural habitats. This species possibly occurs in low numbers throughout pine flatwoods and sandhills habitats in Florida where suitable foodplants are found.

The results presented herein demonstrate that *E. baptisiae* is far more widespread in Florida, particularly in the northern peninsular counties, than previously believed. In addition, the total number of adults observed at some localities in northeastern Florida greatly surpasses that documented in the panhandle. The Florida Natural Areas Inventory currently ranks *E. baptisiae* an S1 species (critically imperiled in Florida because of extreme rarity
— 5 or fewer occurrences or less than 1000 individuals – or because of extreme vulnerability to extinction due to some natural or man-made factor) (FNAI 2015). This status was supported by Jue and Jue (2010). Based on our recent discoveries, however, we recommend that a ranking of S3 (either very rare and local in Florida – 21-100 occurrences or less than 10,000 individuals – or found locally in a restricted range or vulnerable to extinction from other factors) is more appropriate for E. baptisiae.

Additional surveys are required to more fully understand the distribution of E. baptisiae in Florida, both in the panhandle and the peninsula. However, great care must be taken due to its superficial similarity to E. horatius (Scudder & Burgess) and E. zarucco (Lucas). Erynnis horatius was found at all sites where E. baptisiae was located in 2015, and E. zarucco was present at most of them. While E. baptisiae can usually be distinguished from E. horatius based on its smaller average size, and more mottled appearance of males, individuals of the spring generations of E. zarucco and E. baptisiae may be extremely similar in size and markings. Adults of E. baptisiae have shorter, broader forewings than E. zarucco, and they generally have a greater amount of gray scaling in the apical and marginal regions of the dorsal forewing, imparting a more mottled appearance. When in doubt, males of E. baptisiae are easily separated from males of E. zarucco by examination of the male genitalia; the right valve of E. baptisiae is long and lanceolate (similar to the left valve), while it is much shorter and blunt in E. zarucco. This difference is so pronounced that it is easily observed in living individuals with the naked eye or a small hand lens. Specimens or detailed photographs should be taken whenever a suspected new population of E. baptisiae is found. If possible, records should be confirmed genitalically. In addition, close attention should be paid to plant associations, especially if Baptisia species are present.

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Literature Cited


Jeff Pippen (camera) and Nick Grishin investigating Thorybes eggs/larvae at Shades State Park, Indiana during Lep Soc 2015. (Photo by Ranger Steve Mueller)