NEW OR UNUSUAL BUTTERFLY RECORDS FROM FLORIDA

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The following records have accumulated in the course of my collecting in various parts of Florida over the past several years.

Eurema daira daira Godart

Chokoloskee, Collier Co.: 22,31.XII.1967 (1♂ each, winter form); 19, 20.XI.1969 (4♂ 2♀, winter form; 2♂, summer form).

This widespread, common Florida species is of no particular concern in itself, but these records are of significance in conjunction with the next.

Eurema daira palmira Poey

Chokoloskee, Collier Co.: 22.XII.1967 (1♂ 1♀) and 31.XII.1967 (3♂ 3♀).

All the specimens are of the winter form "ebriola." This is the West Indian subspecies of *daira* and only a few specimens of it have ever been taken in Florida (Klots 1951; Kimball 1965). These specimens of *palmira* raise a question, but unfortunately do not answer it: Is *palmira* a subspecies of *daira* as currently believed, or is it a different, full species?

The possibility that *daira* and *palmira* are specifically distinct is suggested by the large number of differences between them (Table 1) and by the utter absence of intermediates among the specimens of both which I took in December 1967, all flying in the same area. This possibility is not diminished by the later (November 1969) captures of *d. daira* alone in the same place: there is no evidence whatever of *palmira* characters in any of these specimens and hence no evidence of interbreeding in the intervening time.

The conventional view, that *palmira* is only a subspecies of *daira,* is still possible. The specimens of *palmira* taken in December 1967 conceivably could all have been offspring of a single immigrant female. Absence of any evidence of hybridization in later captures could be explained by swamping, recessiveness of *palmira* traits, or both.

The present evidence seems to favor their being specifically distinct, but it is certainly not conclusive. Unless or until we learn that the two are capable of living together for several generations without loss of their identities, there is no reason to propose any change in their current status as subspecies.

A complication should be mentioned. Occasional specimens of *d. daira*

TABLE 1. Differences between *Eurema daira daira* and *Eurema daira palmira*, based on Floridian and Cuban material. Abbreviations used: up = upperside; un = underside; fw = forewing; hw = hind wing.

Character	*palmira*	*daira*
	SUMMER FORMS	
1. ♂ ♀ uphw ground color	white	yellow*
2. ♂ upfw costal ground color (mixed with gray)	usually white	yellow
3. ♂ upfw posterior bar thickness	not reaching Cu_2 (thin)	broadly reaching Cu_2 (thick)
4. ♀ upfw ground color	white	yellow
5. ♀ upfw posterior bar	absent	usually at least a trace
6. ♀ uphw terminal fuscous	thin and absent below Cu_1	thick and often reaches beyond Cu_2
7. ♂ upfw terminal fuscous	always extends beyond Cu_2 towards tornus	may extend beyond Cu_2, or there be cut off square
8. ♂ size**	small	large
	WINTER FORMS	
1. ♂ ♀ uphw ground color	white	yellow
2. ♂ upfw posterior bar	not reaching Cu_2 (thin)	broadly reaching Cu_2 (thick)
3. ♂ upfw terminal fuscous	always extends beyond Cu_2 towards tornus	cut off square at Cu_2
4. ♂ ♀ uphw apical black patch thickness	1 interspace-width (thin)	2 interspace-widths (thick)
5. ♀ upfw ground color	white with costal and apical yellow flush	yellow

* Rarely white (see text).
** 10 ♂♂ of summer *daira* (Stemper, Fla.): length of fw 16–17 mm, mean 16.5 mm; 10 ♂♂ of summer *palmira* (Nueva Gerona, Isle of Pines, Cuba): 13.5–15 mm, mean 14.6 mm. Females of each average larger but show a similar size difference; so do both sexes of the winter forms.

taken in southern Florida (*e.g.*, 2♂, Toms Harbor, Florida Keys, VIII. 1936 [collector unknown], Carnegie Museum) show white on the upperside of the hind wing, a characteristic of *palmira*. In all other respects these specimens are true *daira* and I infer therefore that this is simply an occasional dimorphic trait, perhaps limited to the warmer areas, and does not indicate any relationship with *palmira*.

Urbanus dorantes dorantes Stoll

Chokoloskee, Collier Co.: 20.XI.1969 (2♂ 1♀, all rather fresh).

This is a new species record for Florida. Kimball (1965) records a single specimen in the Cleveland Museum which bears two conflicting

labels (Miami, Oct. 11, 1916; and Tampa, June 1908), and is undoubtedly falsely labelled, as Kimball notes.

Urbanus proteus Linnaeus was ubiquitous and abundant on Chokoloskee in November 1969, and on the 19th I took a couple "for the record." While collecting there again the next day I was belatedly struck by the fact that some of the specimens seemed to lack the blue-green iridescence of the dorsal body and wing bases, and took three of these. They turned out to be *dorantes*. Although not as common as *proteus*, they were by no means rare and additional specimens could easily have been taken.

In view of the range and geographic variation of *Urbanus dorantes* it is important to identify the subspecies this Florida population represents as accurately as possible. Three subspecies are relevant here:

U. d. santiago Lucas (Cuba, Isla de Pinos). Upperside of forewing with hyaline spots small: bar at cell end reduced to two spots, one or both of which may be absent; spot below Cu_2 commonly absent. Underside of hind wing with ground color dark purplish brown (except for paler terminal area), often nearly as dark as the dark transverse bands.

U. d. cramptoni Comstock (Puerto Rico, Hispaniola). Upperside of forewing with hyaline spots averaging medium-sized, but varying from as small as in some *santiago* to as large as in some *d. dorantes*: bar at cell end usually entire, rarely divided into spots and never with one or both spots absent; spot below Cu_2 occasionally absent, commonly reduced (much less than half as large as spot in M_3-Cu_1), occasionally large (half or more the size of M_3-Cu_1 spot); second spot from costa of the subapical three spots with its distal edge in line with the first or somewhat basad, only rarely a little distad. Underside of hind wing pale ashy or lavender brown, with dark purple brown bands, both sexes similar.

U. d. dorantes Stoll (Texas and Arizona south to Paraguay and Argentina). Upperside of forewing with hyaline spots large: bar at end of cell always entire; spot below Cu_2 always present, large; second spot from costa of the subapical three spots with its distal edge usually distad of the first, rarely in line. Underside of hind wing pale ashy or lavender brown with dark purple brown bands; in the female sometimes with ground much paler ashy.

The three Florida specimens are a small sample but they show these traits: upperside of forewing with hyaline spots large: bar at end of cell entire; spot below Cu_2 present, large; second spot from costa of the subapical three spots with its distal edge distad of the first in all three specimens. Underside of hind wing pale ashy or lavender brown with dark purple brown bands. The single female has the ground much paler than the males.

The Florida specimens thus agree in every respect with the mainland Central and South American subspecies, *d. dorantes*. With Kimball (*loc. cit.*) we should certainly have expected any Florida specimens of *dorantes* to be of the distinctive Cuban subspecies, *santiago*. Where, then, did this population come from? How long has it been on Chokoloskee? How did it get there? Has *dorantes* been overlooked elsewhere in Florida (or

the Gulf Coast of Louisiana and Mississippi) because of its resemblance to the common *proteus*?

Note. After the manuscript of this paper had been submitted, Dr. Lee D. Miller wrote that he had captured a female of *U. d. dorantes* at Homestead, Dade Co., Florida, on 19.III.1970. This locality is on the opposite side of the state, suggesting that *dorantes* is widespread in southern Florida. This, in turn, implies that *dorantes* may be a recent arrival or specimens surely would have been taken long before this.

Euphyes dion Edwards

3.1 miles east of Trenton, Gilchrist Co.: 30.IV and 1.V.1968 (5♂).

A new species record for Florida. These specimens represent true *dion*, not the so-called subspecies *alabamae* Lindsey, already known from Florida (Kimball 1965), which I regard as a distinct species following Clark & Clark (1951). *Euphyes dion*, however, may need to be racially divided. Southern specimens are darker below, the ochraceous distinctly maroon tinged and the fulvous above reduced in extent.

The above specimens were found at *Pontederia* flowers in a water-filled roadside ditch, as is discussed more fully under the next species.

Poanes aaroni howardi Skinner

3.1 miles east of Trenton, Gilchrist Co.: 29.IV, 30.IV, 1.V.1968 (13♂ 3♀).

Records of this species in Kimball (1965) are few and mostly confined to the autumn. Other localities in Carnegie Museum are: Okeechobee [Okeechobee Co.], Fla.; Royal Palm State Park [which one?], Fla.; and a series taken in late June–early July in the northeastern corner of Monroe Co., Fla.: all *leg.* W. R. Sweadner.

In view of the temporal dissociation of certain Pennsylvania hesperiines to avoid competition for flowers (Clench 1967), the association observed in Gilchrist Co. deserves special comment. The locality lies 3.1 miles east of Trenton, on Florida Highway 26, and consists of long water-filled ditches on both sides of the road. The surrounding area is a patchwork of open marsh, wet meadows (sometimes dry, sometimes inundated), grassy and sedgy pine–cypress swamp, and dry pinelands. At the time *aaroni* and *dion* were collected the area was in the throes of a drought that had lasted several months, yet there was still an abundance of water locally.

I have paid a number of visits to this locality. Three of them were in late April and early May (29.IV, 30.IV, 1.V.1968). At this time I found the following Hesperiinae, all fresh, frequenting the roadside ditches and the *Pontederia* flowers in them: *Atrytone logan* Edwards (the commonest, 19 taken); *Poanes aaroni howardi* Skinner (nearly as common, 16 taken); *Ancyloxipha numitor* Fabricius (6 taken); *Euphyes dion* Edwards

(5 taken), *Wallengrenia otho* Abbot & Smith (3 taken). A few additional hesperiine species were also taken, but as single specimens only.

Of these, *aaroni*, *logan*, and *dion* in particular were feeding at the blue flowers of *Pontederia*, which grew abundantly in the ditches, and on nothing else. A few other plants were in flower and I repeatedly checked them, always with negative results.

About five weeks later, on 8 June 1968, I visited the area again. The *Pontederia* flowers were almost completely gone and not one of the hesperiines was found. Two subsequent visits were made in 1969: one on 19 March, the *Pontederia* barely emergent above the deep water in the ditches and not yet in flower; and one on 24 November, when the ditches were nearly dry, overgrown with grasses, mostly dead, and no *Pontederia* flowers at all. Neither of these visits yielded any of the hesperiines.

These three skippers, *logan*, *aaroni*, and *dion*, may be single brooded locally, all flying synchronously for a few weeks in the spring, although the possibility of a second brood in summer or fall in this area is not yet excluded. The significant point in the present connection is that although they are competitors these skippers apparently are forced to fly contemporaneously by the brief flowering time of their only source of adult food, *Pontederia*.

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PIERIS PROTODICE AND *URBANUS DORANTES* IN SOUTHERN FLORIDA

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Collecting in Florida has uncovered many butterfly and moth species known from nowhere else in the United States, yet, paradoxically, many species which logically should be well known from there appear to be rare or absent. New records from the state are being reported every