

# TEMPORAL AND ELEVATIONAL ADDITIONS OF DISTRIBUTION FOR COSTA RICAN BUTTERFLIES

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**ABSTRACT.**— Some new records are presented which extend the known distribution and flight season of butterflies in Costa Rica. This includes an unidentified *Adelpha* morphologically similar to *Adelpha boreas*.

**KEY WORDS:** *Adelpha*, *Battus*, behavior, butterflies, *Callicore*, *Catastica*, Central America, Costa Rica, *Dynamine*, *Epiphele*, *Eunica*, *Memphis*, Mesoamerica, *Nessaea*, Nymphalidae, *Papilio*, Papilionidae, Pieridae, trap.

On a recent trip to Costa Rica in August/September of 1992, some interesting geographic and temporal additions were discovered to P. DeVries's excellent work *Butterflies of Costa Rica* (1987). These observations are presented here as a follow-up to a previous article by George Austin (1992).

## PAPILIONIDAE

*Battus laodamas* (Rothschild & Jordan). Although DeVries (1987) only reports this species from the Carillo belt, we have found it at La Suiza (750m) just outside this belt, in the Talamanca in early September. Despite DeVries's lack of puddling records for *Battus*, we have seen this species puddle here and have also seen *Battus polydamas* (Linnaeus) puddle in the Osa Peninsula, Puntarenas Prov. In addition, our South American experiences have yielded puddling records for many other species of *Battus*.

*Papilio androgeus* (Godman & Salvin). In Costa Rica, this species has only been reported from the Pacific slope from sea level to 1000m. However, in early September we found a single individual puddling on urine-soaked ground at Virgen del Socorro (750m), Alajuela Prov., on the Atlantic slope. This is perhaps not very surprising, considering its Atlantic distribution further north in Mexico.

*Papilio torquatus* Godman & Salvin. Although supposedly restricted between 400-800m elevation, we observed several ovipositing females in a forest clearing over a period of days in early September near the Rio Tarcoles, Puntarenas Prov., on the Pacific slope, at sea level.

## PIERIDAE

*Catastica sisamnus* (Fabricius). The elevational range of this

species was reported by DeVries (1987) as being between 1200-2500m, but a single specimen was discovered at La Suiza (750m), Cartago Prov., on the Atlantic slope, nearly 500m lower than this. Presumably, this ecotonal locality often receives strays from higher elevations.

## NYMPHALIDAE

*Memphis chaeronea* (Salvin). DeVries reported this species confined to an elevational range of 400-1200m, but near Las Alturas (1600m), Puntarenas Prov., on the Pacific slope, a single specimen was attracted to a fish-baited trap in mid-August.

*Memphis orthesia* (Godman & Salvin). This species has been reported as being uncommonly found from sea level to 700m and only on the Atlantic slope. However, during early September a single specimen was taken at a fish baited trap near Rio Tarcoles, Puntarenas Prov., at sea level on the Pacific slope.

*Memphis cleomestra* (Hewitson). This rare species was reportedly confined to the Atlantic slope up to 700m. However, again a single individual was attracted to a fish-baited trap near Golfito, Puntarenas Prov., at sea level on the Pacific slope in mid-August. DeVries (1987) has only rarely found this species in canopy traps, but this individual came to a trap only 2m off the ground in patchy forest.

*Dynamine thalassina* Boisduval. This species is very rare in Costa Rican collections and is confined to the Atlantic lowlands around Limon, Limon Prov. DeVries (1987) did not see this species alive in Costa Rica. However, at La Suiza (750m), Cartago Prov., in early September, this species was not uncommon, three females being captured in one day. In fact, it was more common than the very similar *D. mylitta* (Cramer) with which it flew.

*Dynamine hoppi gillotti* Hall. This very rare subspecies from Costa Rica is known from only three females, and in DeVries's experience, is confined to the Atlantic lowlands during July (based on collecting at Finca La Selva). In early September, we captured a single freshly emerged female at the productive locality of La Suiza, Cartago Prov., which is at mid-elevation (750m). This finding would seem to refute DeVries's theory about *D. hoppi* having a distribution which is elevationally exclusive from *D. hecuba* Schaus. Indeed, we also found this latter species at Virgen del Socorro, Cartago Prov., at an identical elevation. This new finding suggests that the two species may be sympatric.

*Epiphele orea* Godman & Salvin. Although this uncommon species is supposedly restricted to a flight period between January and June, as many as three males could be found in subcanopy traps in late August near Las Alturas (1600m), Puntarenas Prov., which is a rain shadow valley.

*Nessaea aglaura* (Doubleday). This species has only been reported from below 600m in Costa Rica, but a single individual was unequivocally sighted at La Suiza (750m), Cartago Prov. almost 200m higher. This record shows that this species is not restricted solely to the lowlands, but is instead probably found right up into the lowland-mid elevation ecotone.

*Callicore patelina* (Hewitson). This rare species is only known from below 500m in the lower Carillo belt. However, high above La Suiza, Cartago Prov., at nearly 800m, a single individual was found in early September well outside its reported range.

*Adelpha salmoneus* Hall. DeVries (1987) reported this uncommon species only from the Atlantic slope, especially during the February-March dry season (sea level-1000m). However, several individuals were seen and one male captured near Golfito, Puntarenas Prov., at 200m on the Pacific slope during the rainy season in mid-August.

*Adelpha boeotia* (Felder & Felder). This species is recorded on the Pacific slope, only at sea level on the Osa Peninsula, Puntarenas Prov. A single male was attracted to a fish-baited canopy trap near San Vito (1100m), well outside even the 700m upper limit on the Atlantic slope. Usually largely confined to the dry season, this specimen was caught during the August rainy season.

*Adelpha erymanthis* Godman & Salvin. This very rare species was reported from only a "handful of specimens" from the Atlantic Carillo belt (800-2000m), including only one discovery by DeVries. During mid-August, we were therefore surprised to find two males at Virgen del Socorro (750m) and a single male at Rio Sucio (500m), Alajuela Prov., all flying at ground level. August would appear to be a good time of year for this rare species, when it was one of the more common *Adelpha* species, several more individuals being seen at Virgen del Socorro.

*Adelpha* sp. nr. *boreas* Fruhstorfer. This specimen (Fig. 1-2), found at La Suiza (750m), Cartago Prov., is closest in appearance

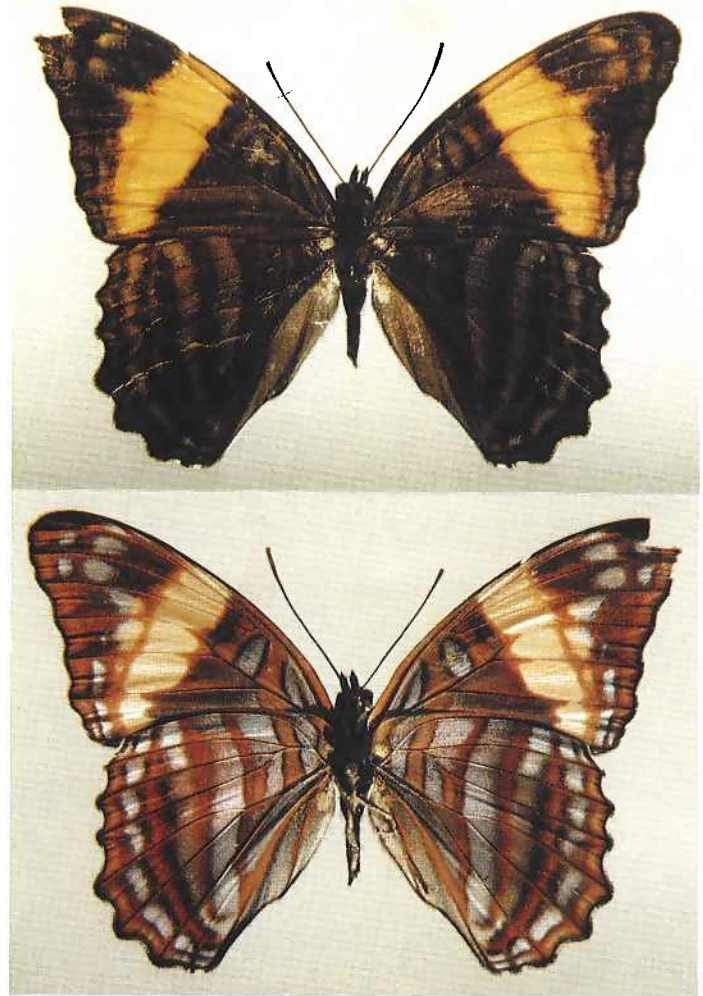


Fig. 1-2. *Adelpha* sp. near *boreas* Fruhstorfer, La Suiza, Cartago Province, Costa Rica: 1. Dorsal surface. 2. Ventral surface.

to *Adelpha boreas* but is certainly not the subspecies *A. b. opheltes* Fruhstorfer, illustrated in DeVries. There are noticeable subapical orange spots and four bands on the hindwing as opposed to the typical three. The orange band on the forewing is also shifted basad, such that the orange touches the point where the lines  $M_3$  and  $Cu_1$  meet, allowing white spots to be present in the forewing verso tornus. The form *tizona* illustrated in Seitz has subapical orange spotting but none of the other features. None of the forms in Seitz exactly match this one. At the very least, this appears to be a new subspecies discovered "post Seitz", but this specimen remains for the moment unidentified. Interestingly, there is an identical specimen to this one in the Florida State Collection of Arthropods, pointed out by T. C. Emmel, which was collected by H. L. King and labelled 'Chiriqui, Panama, 28/1/68', but left unnamed. Through correspondence with Sr. Francisco Delgado, it seems that this specimen is probably from the Potrerillos area at 1100m. Dr. A. Aiello, Smithsonian Tropical Research Institute, Panama, also has a specimen apparently similar to ours, collected by G. Small on 24 June 1976, from Rio Sarapiquí, Heredia Prov., Costa Rica, plus another specimen from Alajuela Prov. All these specimens have previously been misidentified or unidentified.

*Adelpha stilesiana* DeVries & Chacon. This was recently described species (DeVries and Chacon, 1982) as endemic to the Carillo belt of Costa Rica. Through correspondence with Sr. Francisco Delgado, this species also appears to be found in Panama, his record being for the Chiriqui highlands, 12 April 1988.

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