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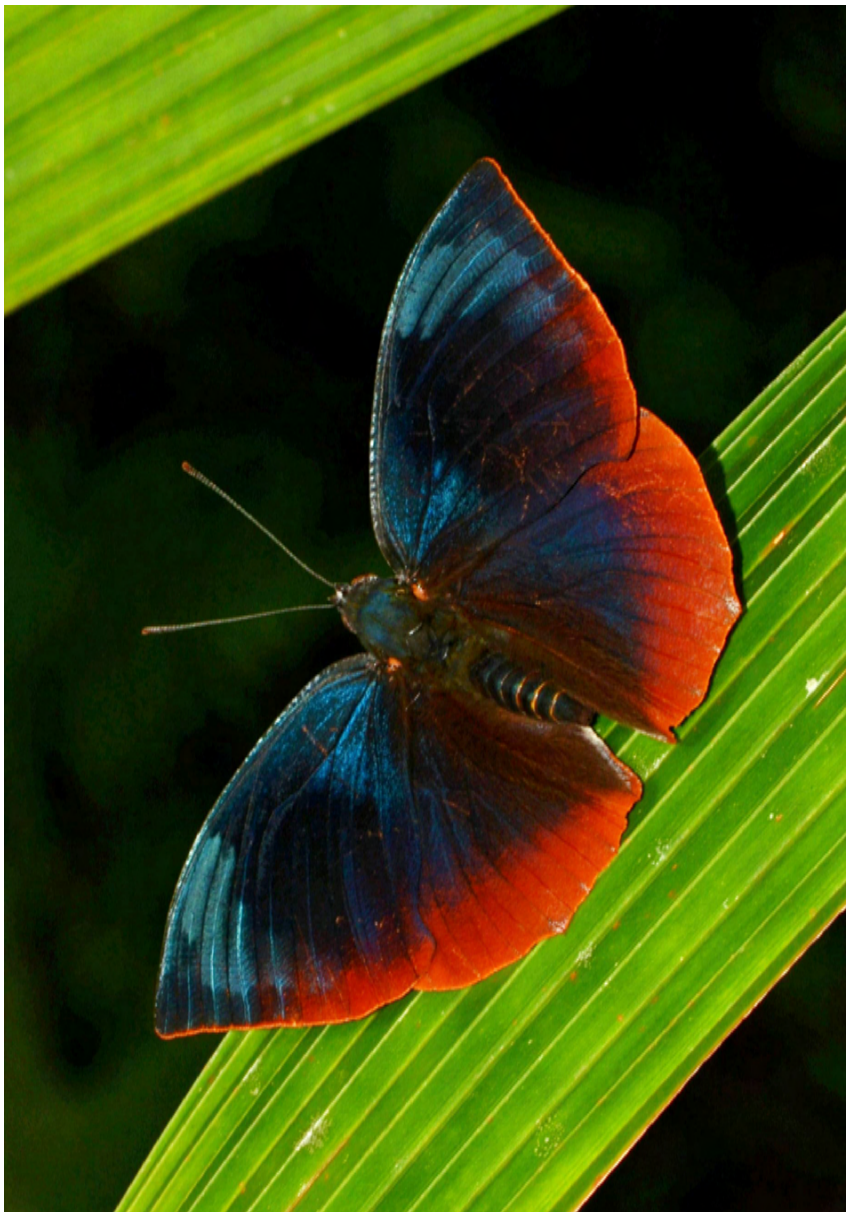

The Spotless Comma (*Polygonia haroldii*): a new species for the United States

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Introduction

In west Texas, the Davis Mountains tower above the desert floor, creosote and prickly pear giving way to luxurious grasslands in the foothills, and conifer and oak woodlands at the higher elevations. The mountains are cut by lush canyons that shelter biological treasures. One of these treasures, the Spotless Comma butterfly, was discovered in the summer of 2013. A new species for the United States, the Spotless Comma, is an anglewing butterfly with cryptic brown color and pattern on the ventral side of its wings, a white comma on the ventral hind wing, and golden orange upper wings.

Haroldi or *haroldii*?

The scientific name of the spotless comma is spelled both *Polygonia haroldi* (for example, see Krogen, 2000; Miller and Miller 1970; Weingartner et al. 2006) and *P. haroldii* in the literature (for example, see Glassberg 2007; Lamas, 1989; Warren et al. 2013). The Global Lepidoptera Names Index cites the "preferred name" as *Polygonia haroldi* based on the unique index card archive to the scientific names of moths and butterflies that is curated at the Natural History Museum in London (Beccaloni et al. 2012).

The species was first described by H. Dewitz in 1877 in a paper titled "Neue Schmetterlinge des Berliner Museums." The original name for the species was *Grapta haroldii*. In the early 1930s, the genus name was changed to *Polygonia* in recognition of a clear case of priority (Ehrlich and Murphy 1981); however, the specific epithet should remain *haroldii* in order to conform to the mandatory provisions of the International Code of Zoological Nomenclature (ICZN 1999; J. Belicek, pers. comm. 6-2013; J. Pelham, pers. comm. 12-2013).

Habitat and Distribution

In Mexico, the Spotless Comma is most frequently encountered in the pine-oak woodlands of the Trans-Mexican Volcanic belt—a 900 km long igneous mountain range that extends west to east across central-southern Mexico (Fig. 1). Less often, the Spotless Comma is found in the mesic forests of the Sierra Oriental and an apparently disjunct population is located in southern Sonora, at the northern extension of the Sierra Madre Occidental (Brock pers. comm. June 26, 2013; Krogen 2000). Krogen (2000) suggests that the butterfly may have a broader distribution, but that knowledge of the species is limited by the inaccessibility of the mid- to high- elevation, wooded canyons that are the butterflies preferred habitat.

Little is known about the natural history of the Spotless Comma. As with most *Polygonia*, it is believed to overwinter as an adult (Belicek, pers. comm. 6 2013). Adults are most frequently seen perching on low vegetation in shaded canyon bottoms, often with live water such as a creek or spring nearby (Krogen 2000; Miller and Miller 1970).

John Emmel (pers. comm. September 9, 2013) notes that he collected larvae of *Polygonia haroldii* "in late August or early September, 1966, on *Ribes ciliatum*, on Popocatepetl near Mexico City at about the 10,000 ft. level." James Brock (pers. comm. June 26, 2013) and Krogen (2000) also report an association with *Ribes* in the Sonoran populations.

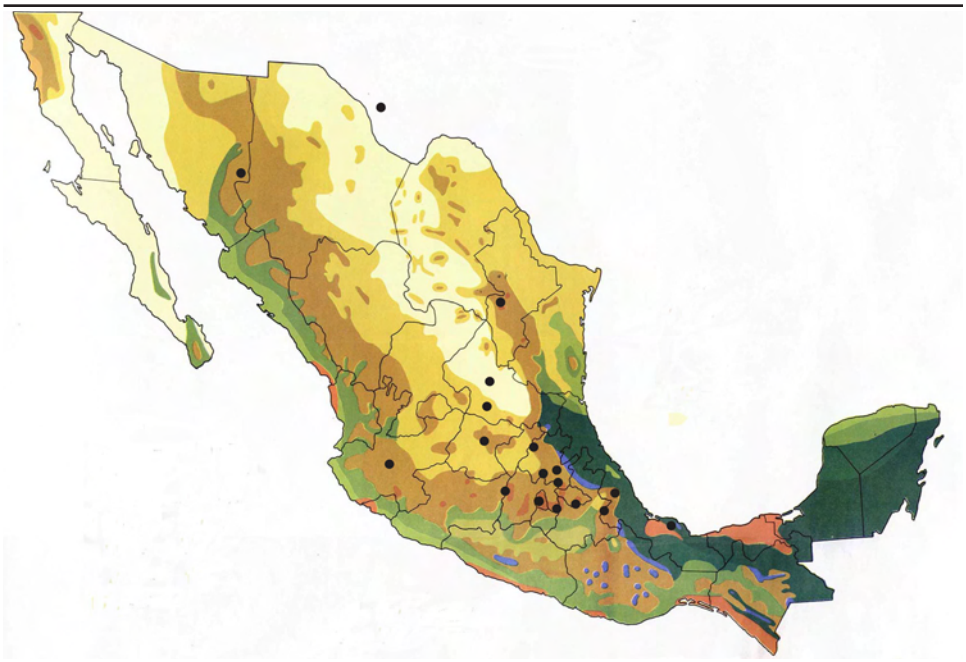

Figure 1. Current known distribution of *Polygonia haroldii*, the Spotless Comma. Locations collected from J. Brock (pers. comm.); Godman and Salvin (1887-1901), Krogen (2000), Lamas (1989), Luis-Martínez et al (2010), Maza Ramírez (1987); Peña and Malm (2012); and Warren et al. (2013).

Texas Population

In late May, 2013, a bright orange angle-wing butterfly was observed basking on a twig stuck in the muck of a seep spring high in the Davis Mountains of west Texas. At 7,040 ft. in elevation, the canyon is heavily wooded with an overstory of ponderosa pine (*Pinus ponderosa*), Chihuahuan white pine (*P. strobiformis*), gambel oak (*Quercus gambelii*), silverleaf oak (*Quercus hypoleucoides*), and alligator juniper (*Juniperus deppeana*). At first, I assumed that the butterfly was a Question Mark (*Polygonia interrogationis*) a butterfly seen frequently in wooded canyons of the northern Chihuahuan Desert.

After a few days, I took a few photographs of the butterfly. It may have superficially looked like a Question Mark, but it wasn't behaving like one. It repeatedly flew down to the spring to bask for several minutes at a time and the upper wings—which you rarely see on a Question Mark—seemed too bright. After processing the photographs, I realized that the butterfly couldn't be a Question Mark, but it didn't look like any of the other *Polygonia* illustrated in various field guides.

Because we are so close to the Mexican border, Mexican butterflies are always a possibility. A Google search revealed a potential match: *Polygonia haroldii* or the Spotless Comma (Fig. 2). This was quickly confirmed by Dale Clark of Dallas and several other lepidopterists on the TX-Butterfly listserve. Not only was it a Mexican species, it was the first time that the Spotless Comma had been documented in the United States.

Initially, I only saw one butterfly at a time basking at the spring but after about 10 days, it disappeared. The consensus was that the Spotless Comma was most likely a vagrant that somehow had ended up in the Davis Mountains, hundreds of miles from its closest documented population.

But in late June, Dr. Rich Koestecke of The Nature Conservancy visited the site and photographed a very fresh looking individual. He also saw a possible second Spotless Comma "booking it down the canyon." The next day, I observed two Spotless Commas basking on low vegetation surrounding the spring. Occasionally, they would spiral upwards through the trees in a courtship flight. Instead of a single vagrant, it appears that there may be a breeding population.

Of course, to have a breeding population, there must be a host plant. According to botanist A. Michael Powell (1998) *Ribes leptanthum*, the trumpet currant, grows on the slopes of Mount Livermore where the butterfly was observed. Kelly Bryan (pers. comm.) noted that "thickets" of currants occur at the base of the cliffs that form the head of the canyon.

The goals for 2014 are to locate the host plant, document breeding behavior and immature stages of the butterfly, and collect voucher specimens of the adults.

Acknowledgements

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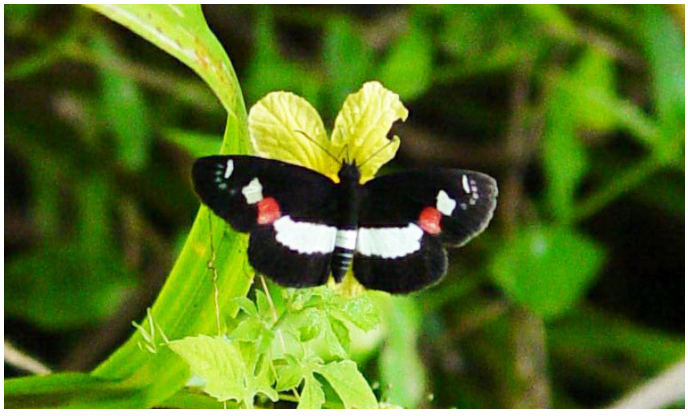
Figure 2. *Polygonia haroldii*, upperside and underside, from the Davis Mountains, Jeff Davis Co., Texas.

Panamanian government agency. It was quite expensive, as everything was brought in by small planes, but a great place to explore. We're hearing several stories about why you can no longer go there, but we think the government is concerned about possible problems with Colombian armed bad guys. It is very close to the Colombian border, surrounded by fabulous forest and no roads or access except by small single engine aircraft. I can only imagine what butterflies you could find in those forests.

We drove east, or south, to Bayano, over a big bridge, through a military checkpoint (be sure to have your passport, sometimes they require it, sometimes not), and past Lake Bayano. It's about an hour from Panama City to the bridge (can be 2 hours including getting out of the city), then about 10-12 km to some dirt tracks that run off the main road to both sides. These may be logging roads; you can drive in and park off to the side and wander around. Lots of *Heliconius erato* and *melpomene,* with quite a bit of variability, some with yellow stripes and some without. John showed me a spot for *Mesosemia hypermegala*, the only time I've ever seen this species. This also seems to be a good spot for *Paramimus stigma*, as we've seen it a couple of times there, and friends have had it there as well. It is very small and likes to sit on flowers on the top of bushes, which makes it so hard to photograph.

Riodinidae: *Mesosemia hypermegala*



Hesperiidae: *Paramimus stigma* (Photo by Dan Wade)

I've stayed at Burbayar, a lodge a little ways past this area, but wouldn't recommend it. We wandered around good looking forest for 2 days and saw very little. That was in August, so it should have been good, but not much was found by any of us.

I'm going back to Panama in April this year, and we're going to camp at a ranger station at the edge of Darien National Park. Al and John have now been there a couple of times, and they say it is really good, so I'm looking forward to it. We will drive all the way to the end of the road, then cross a river and take horses a couple of hours into the park. Should be exciting, stay tuned!

(All photos by Kim Garwood unless otherwise specified.)

Spotless Comma, *Polygonia haroldii* in the U.S.

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