

Scientific Note: First record of Pearl Crescent, *Phyciodes tharos* (Drury, 1773) (Lepidoptera: Nymphalidae: Nymphalinae), from Cuba

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The genus *Phyciodes* (Hübner, [1819]) (Lepidoptera: Nymphalidae; Nymphalinae) is found across the Nearctic Region and currently includes 15 described species; many of these have similar morphology, some of them are sympatric, and hybridization has been documented between sympatric, closely related species (Scott, 1994, 1998, 2006; Wahlberg *et al.*, 2003; Zhang *et al.*, 2022). One of the best-known species of the genus is Pearl Crescent, *Phyciodes tharos* (Drury, 1773), a widespread and common generalist butterfly that ranges from Mexico to southern Canada and across the eastern United States.

This quite variable insect can be found in moist meadows, open fields, prairies, streamsides and ruderal vegetation in suburban areas; caterpillars feed on several composite species (Scott, 1986; Glassberg, 1999). Across its range this butterfly is sympatric with other congeners such as Dark Crescent *P. batesii* (Reakirt, 1865), and Phaon Crescent *P. phaon* (Edwards, 1864) (Glassberg, 1999; Wahlberg *et al.*, 2003; Zhang *et al.*, 2022), and has been detected once in the Bahamas, the only known locality outside continental North America (Rindge, 1952).

On 26 June 2023, two females of *P. tharos* were observed

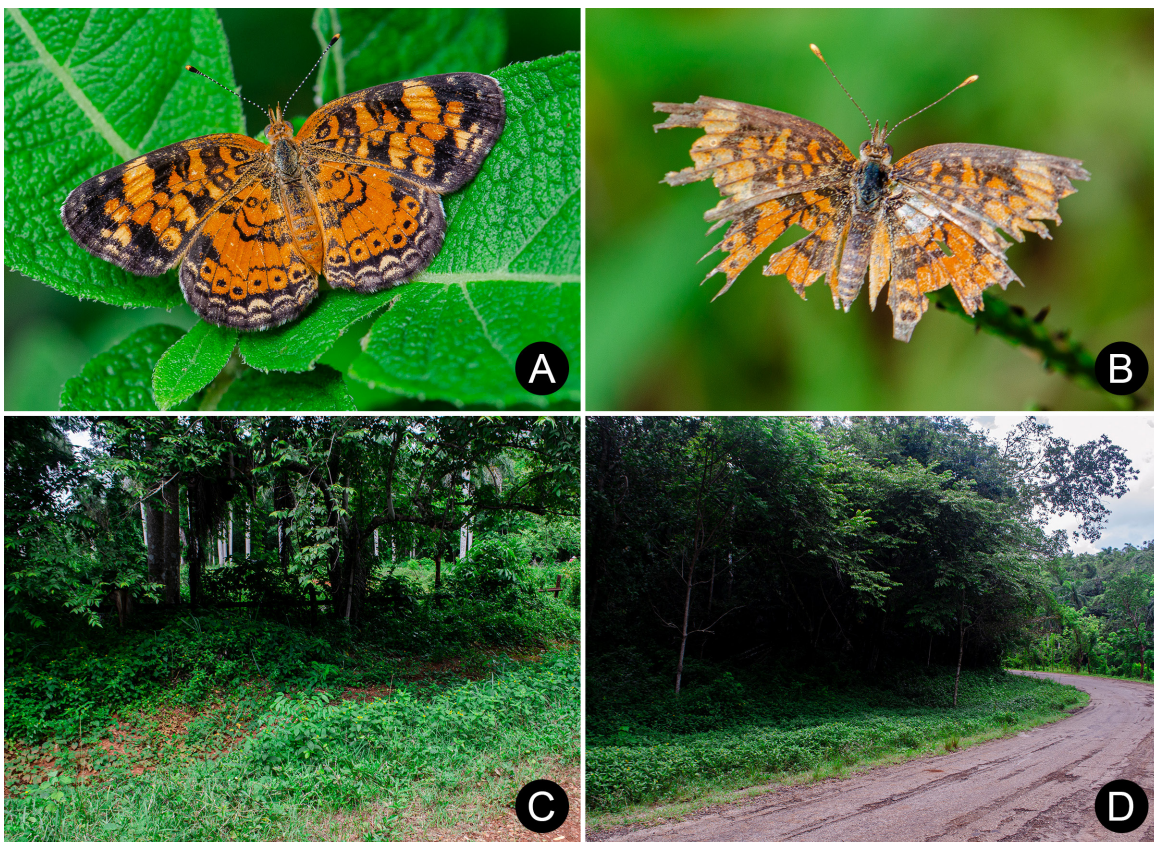


Figure 1. Photographs of live adult females of *Phyciodes tharos* (Drury, 1773) (Lepidoptera: Nymphalidae; Nymphalinae) (A and B) and the observed moist evergreen forest roadside habitat in which they were observed (C and D) at Escaleras de Jaruco, Jaruco municipality, Mayabeque province, western Cuba, on 26 June 2023. Photographs © Yosiel Álvarez.

at Escaleras de Jaruco, Jaruco municipality, Mayabeque province, western Cuba (Figs. 1A-B, 2A-B and 3A). The first individual was observed in flowering patches of ruderal vegetation along a roadside at the edge of the humid evergreen forest (Fig. 1C-D) ($23^{\circ} 1' 44.68''$ N, $82^{\circ} 4' 52.97''$ W) flying swiftly and low to the ground, but occasionally settling on leaves or visiting the flowers of *Bidens pilosa* L. (Asteraceae), *Phyla nodiflora* L. (Verbenaceae) and *Acmella* sp. (Asteraceae). In this habitat the butterfly was accompanied by *P. phaon* and also *Calisto disjunctus hersheyi* Álvarez & Núñez, 2021 (Nymphalidae), *Hemiargus ceraunus filenus* (Poey, 1832), *Ministrymon azia* (Hewitson, 1873) (Lycaenidae), *Pyrisitta larae* (Herrich-Schäffer, 1862), *P. dina* (Poey, 1832) (Pieridae) and *Burnsius crisia* (Herrich-Schäffer, 1865) (Hesperiidae). The second individual was located perching in the mown lawn at Restaurante Arabe ($23^{\circ} 2' 39.58''$ N, $82^{\circ} 3' 6.13''$ W). This individual was located about 2 miles (3 km) directly northeast of the first site of discovery. The first individual was fresh whilst the other one was very worn. The fresher specimen was collected and it is deposited at the Douglas Manuel Fernández Research Collection, Camagüey, Cuba (Fig. 2).

These observations constitute the first record of the species from Cuba and the Antilles. The record, from an inland location, and the observation of two adult females, one of them notably fresh, may suggest that the species has successfully colonized Cuba, most likely from southern Florida, where it is common (Scott, 1986; Glassberg, 1999). Similar colonization events from North America have occurred several times in the past; examples include the related species *P. phaon* in the 1930s (Alayo & Hernández, 1987), and more recently Eastern Tailed Blue *Cupido comyntas texana* (Chermock, 1945), which was first detected in 2015 in Viñales, Pinar del Río province (Núñez, 2015). The latter species has now been found to be abundant at the National Botanical Garden in Havana (Álvarez & Barro, 2022) and other locations of Havana Province, as well as on the Isle of Youth (Álvarez, & Daguerre, 2023). The absence of previous records of *P. tharos* from the island might be partly accounted for by its similarity with two other Crescents, *P. phaon* and *Anthanassa frisia* (Poey, 1832) (Fig. 3), which are widespread and abundant in western Cuba in similar habitats (Alayo & Hernández, 1987; Núñez *et al.*, 2020). However, and despite its variability, *P. tharos* can be distinguished from *P. phaon* by the absence of the cream-colored forewing median

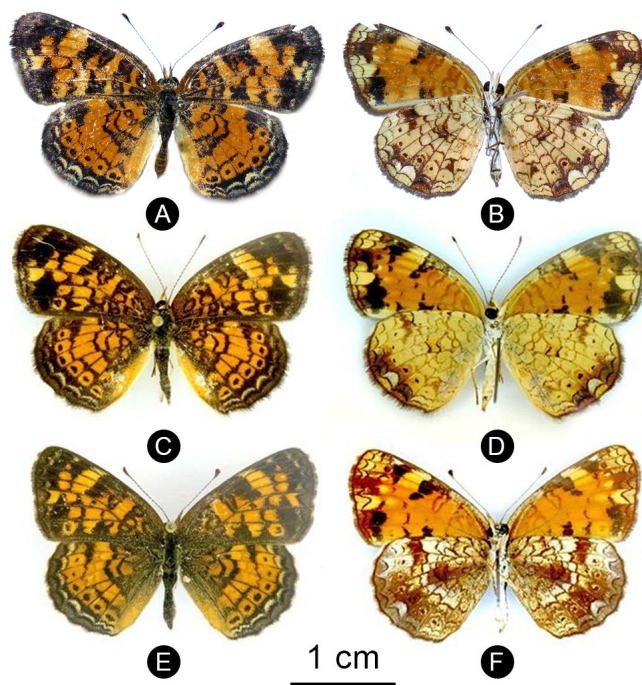


Figure 2. Photographs of pinned adults of *Phyciodes tharos* (Drury, 1773) (Lepidoptera: Nymphalidae; Nymphalinae). A-B: First specimen collected at Escaleras de Jaruco, Jaruco municipality, Mayabeque province, western Cuba, on June 26, 2023. C-D: Summer form from Valle Mines, Missouri, USA, Jefferson Co., August 1, 2011. E-F: Winter form from Gulf Hammock, Florida, USA, Florida, Levy Co., March 8, 1980. Left, upperside; right, underside. Photographs © Douglas Manuel Fernández and Jeffrey R. Sloten.

band of the latter species and the reduction of the forewing's upperside black markings. From *A. frisia* it can be separated by the arrangement of the black spots and markings on the forewing and hindwing, and also by its smaller size, especially in females (see Fig. 3).

The first specimen of *P. tharos* from Escaleras de Jaruco (Figs. 1 and 2) is somewhat different from typical specimens from the USA (Fig. 2). The ground color is a richer orange and the underside of the hindwings is paler. Females from the USA have a yellowish-orange ground color and yellower hindwing

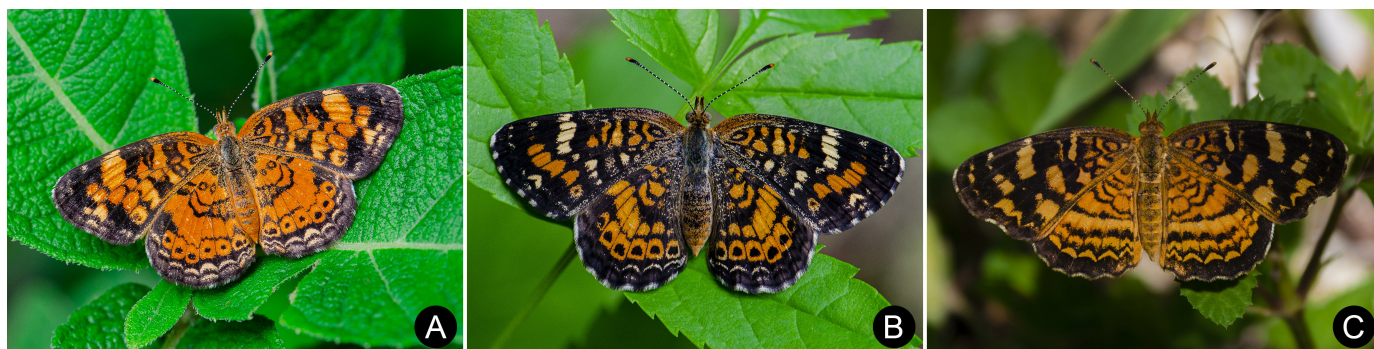


Figure 3. Photographs of live adults of *Phyciodes tharos* (Drury, 1773) (Lepidoptera: Nymphalidae; Nymphalinae) and similar species in Cuba. A: *P. tharos* (Escaleras de Jaruco, Mayabeque province, June 2023). B: *P. phaon* (Edwards, 1864) (Jardines de Hershey, Mayabeque province, August 2022). C: *Anthanassa frisia* (Poey, 1832) (Jardines de Hershey, Mayabeque province, July 2020). Photographs © Yosiel Álvarez.

undersides in the summer form. This species is known to be quite variable in wing pattern, and genetic analyses will likely be necessary to assess the region of origin of the Cuban *P. tharos*.

We were unable to find the host plant of *P. tharos* at Escaleras de Jaruco. Larvae of *P. tharos* are known to feed on *Symphytotrichum* species (formerly *Aster*, Asteraceae) in North America (Scott, 1986). At least eight species of *Symphytotrichum* have been reported from Cuba (Greuter & Rankin, 2022) and perhaps one of these is present at Escaleras de Jaruco. More field observations are needed to verify the current status of the species in Cuba, as well as which hostplant it is using on the island.

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