

NOTA / NOTE

Notes on recent migrations of *Urania fulgens* (Walker, 1854) in Costa Rica (Lepidoptera: Uraniidae).

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Abstract: Two recent migrations of *Urania fulgens* (Walker, 1854) (Lepidoptera: Uraniidae) in Costa Rica are reported. Additional information about the ecology and the distribution of this species is also given.

Key words: Lepidoptera, Uraniidae, *Urania fulgens*, *Urania leilus*, distribution, ecology, migration, Costa Rica.

Resumen: Notas sobre migraciones recientes de *Urania fulgens* (Walker, 1854) en Costa Rica (Lepidoptera: Uraniidae). Se informa sobre dos migraciones recientes de *Urania fulgens* (Walker, 1854) (Lepidoptera: Uraniidae) en Costa Rica. Se aporta también información adicional sobre la ecología y la distribución de esta especie.

Palabras clave: Lepidoptera, Uraniidae, *Urania fulgens*, *Urania leilus*, distribución, ecología, migración, Costa Rica.

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Introduction

Urania fulgens (Walker, 1854), the *Urania* Swallowtail Moth or Green Page Moth, in Costa Rica known as *Colipato Verde*, is a day-flying species which belongs to the family Uraniidae. Its distribution area covers Mexico, Central America (Honduras, Costa Rica, Panama) (Calhoun, 2004; van der Heyden, 2006; Lotts & Naberhaus, 2015) and the northwestern part of South America (west of the Andes, south to northern Ecuador).

Furthermore, *U. fulgens* has been reported from the south of the United States of America (Florida, Texas) as a vagrant. It has also been reported from Belize (Meerman & Boomsma, 1997; Calhoun, 2004; van der Heyden, 2006; Lotts & Naberhaus, 2015), though it seems that the species is not autochthonous in Belize because host plants of the larvae –which belong to the genus *Omphalea* (Euphorbiaceae)– supposedly cannot be found in that country (Meerman & Boomsma, 1997; Calhoun, 2004; van der Heyden, 2006).

As *Omphalea diandra* L., the main food plant of the caterpillars of *U. fulgens* in Costa Rica (van der Heyden, 2009), has been reported from Guatemala, El Salvador and Nicaragua, *U. fulgens* might also be native to one or more of these countries. Further investigations might be helpful to answer this question. Additional information about the ecology of *U. fulgens* was published earlier (van der Heyden, 2006, 2009; Murillo-Hiller, 2008).

U. fulgens is highly migratory. In the last two decades, migrations in 1995, 1998, 2003, 2005, 2006 and 2009 were reported from Costa Rica. The migration in 2005 was extremely massive –lasting from July until September– and could be observed in most parts of the country (van der Heyden, 2006, 2009; Murillo-Hiller, 2008).

The closely related *Urania leilus* (Linnaeus, 1758), the Green-banded *Urania*, can be found in Ecuador (east of the Andes), too - as well as in Colombia, Venezuela, Suriname, French Guiana, Brazil, Peru, Bolivia and the Caribbean.

Comments on recent migrations of *Urania fulgens* (Walker, 1854)

Recently, Gilma Jeannette Ospino Ferreira-Norman observed a migration of *U. fulgens* at her property -in the canton of San Ramón in the province of Alajuela, Costa Rica- and in the neighbourhood, about 900 m above sea level. The observation of the migration started around the middle of February 2015. Groups of about 25 to 50 specimens passed by -more or less- every few minutes. The moths migrated from south to north, flying relatively high -about eight metres above the ground- from early in the morning until afternoon. After 3:00 p.m. (local time), the number of individuals decreased.

At the end of February, the number of migrating specimens decreased to groups of five to ten individuals. On 28.2.2015, Gilma Jeannette Ospino Ferreira-Norman was able to take a photograph of a specimen which -due to strong winds- was not able to fly high (Fig. 1).

On the first days of March 2015, the number of migrating specimens of *U. fulgens* decreased even more to single individuals or small groups of up to five specimens continuously flying northwards from the morning until afternoon, too.

On 3.3.2015, two or three specimens were observed interrupting their straight flight and fluttering around a blooming bush, obviously looking for nectar. On the following days, only one or two specimens per minute were observed flying straight northwards from the morning until afternoon, despite very strong winds. No more migrating specimens of *U. fulgens* were observed after 7.3.2015.

The migration was also observed in other parts of Costa Rica, e.g. in the provinces of San José and Limón (Ignacio Gamboa Hidalgo, Sue Sutton, Jeff Perala, personal communications).

Taking into account the duration of the migration in 2015 and the numbers of individuals observed, this migration was -by far- not as massive as the one observed in 2005.

Additionally, Gilma Jeannette Ospino Ferreira-Norman informed the author about a migration of *U. fulgens* she was able to observe at the same site in November 2013. During that migration, single individuals and groups of about 25 specimens per minute were also flying northwards.

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Fig. 1.- *Urania fulgens* (Walker, 1854). San Ramón, Alajuela, Costa Rica, 28.2.2015. (Photograph: Gilma Jeannette Ospino Ferreira-Norman.)