



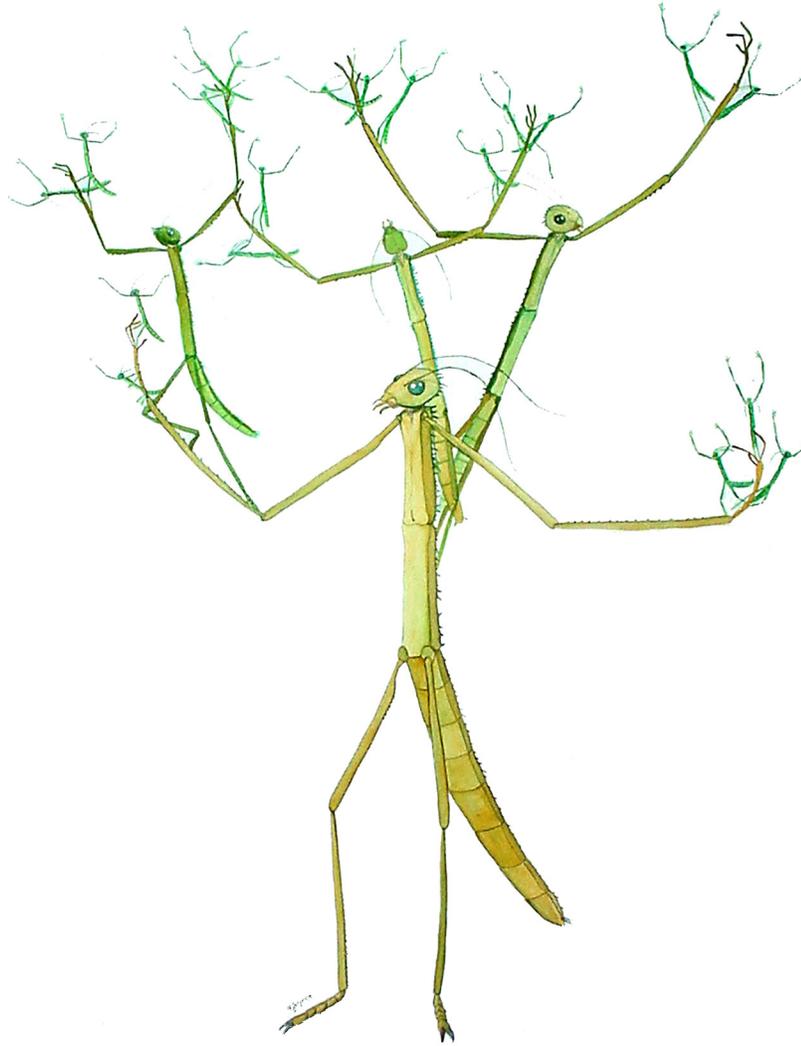
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Artículo

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**First record of *Escalantiana escalantei* (Miller, 1976) for the State of Mexico, Mexico (Lepidoptera: Castniidae: Castniinae)**

**Primer registro de *Escalantiana escalantei* (Miller, 1976) para el Estado de México, México (Lepidoptera: Castniidae: Castniinae)**

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ABSTRACT

We present the first record of *Escalantiana escalantei* (Miller, 1976) for the State of Mexico, based on the discovery of a dead female in the municipality of Tonatico. We also list the other localities where this species has been observed and collected throughout Mexico.

**Keywords:** biogeography, castniid, distribution, Lepidoptera, Neotropical.

RESUMEN

Presentamos un nuevo reporte estatal para *Escalantiana escalantei* (Miller, 1976) en el Estado de México con base en el hallazgo de una hembra muerta en el municipio de Tonatico. Así mismo, enlistamos las localidades en las que esta especie ha sido observada y colectada en el país.

**Palabras Clave:** biogeografía, cástnido, distribución, Lepidoptera, Neotropical.

Mexico is the most northerly point of distribution of the family Castniidae in America (Miller 1986, 2000; González and Cock 2004; López-Godínez and Porion 2012; García-Díaz *et al.* 2020; González *et al.* 2021; García-Díaz 2022), with the record of *Escalantiana escalantei* (Miller, 1976) in Chihuahua. This species is distributed along the Pacific slope of Mexico, and is one of eight endemic species in the country. The first record of this species was listed by Rothschild (1919) as a “female” of *Castnia chelone* Hopffer, 1856, collected by Gadow, apparently near Iguala (Guerrero) in the Balsas River region in August 1904. This situation was clarified by Miller (1976), who pointed out that the specimen corresponded to a male of *E. escalantei*. Additionally, prior to the species’ description, two more specimens were collected under fluorescent lights on September 16, 1969, by Adolfo White López in Chinameca, Morelos (De la Maza-Elvira 1976; Adolfo White-López pers. comm.).

This species was described as *Castnia escalantei* with specimens from the states of Chihuahua, Guerrero and Morelos, designating Acahuizotla, Guerrero as the type locality (Miller 1976). Subsequently, Miller (1995) placed it in the genus *Synpalamides* Hübner, [1823], a situation that remained until the description of the genus *Escalantiana* Miller, 2019, where *E. chelone* (Hopffer, 1856), *E. escalantei*, and *E. estherae* (Miller, 1976) were grouped (González *et al.* 2019; García-Díaz and Turrent-Carriles 2022). Currently, *Escalantiana* and *Mexicastnia* García-Díaz and Turrent-Carriles, 2022 are the only two genera of Castniidae endemic to Mexico (García-Díaz and Turrent-Carriles 2022).

The discovery of a dead female of this species by Dale Denham in the municipality of Tonatico, State of Mexico, Mexico, motivated us to produce this note, which has two

aims: (1) detail the first known record of the species for the State of Mexico, and (2) listing all the currently known localities for *E. escalantei*.

MATERIALS AND METHODS

On July 4, 2021, Dale Denham found a dead specimen of a large and cryptic moth which was lying on the ground, alongside a small road in Tonatico, State of Mexico, Mexico (Fig. 2). When we examined the specimen, it was identified as a female of the castniid *Escalantiana escalantei*. A literature review and an extensive entomological collection revision confirmed this finding as the first record for the State of Mexico for this species.

Additionally, with the purpose of examining specimens of *E. escalantei* in order to know its distribution in the country, the following institutional collections throughout the world were consulted: American Museum of Natural History, New York, USA (AMNH); California Academy of Sciences, San Francisco, USA (CAS); Colección Entomológica del Instituto de Ciencias Naturales de la Universidad Nacional de Colombia, Bogotá, Colombia (C-ICNMHN); Colección Nacional de Insectos del Instituto de Biología de la Universidad Nacional Autónoma de México, Mexico City, Mexico (CNIN-IBUNAM); Cornell University Insect Collection, Ithaca, New York, USA (CUIC); Colección Lepidopterológica de El Colegio de la Frontera Sur, Chetumal, Quintana Roo, Mexico (ECO-CH-LN); Museum für Naturkunde, Berlin, Germany (ex-ZMHB; Zoologisches Museum der Humboldt Universität zu Berlin, Germany) (MfN); Colección Entomológica Alfredo Barrera del Museo de Historia Natural de la Ciudad de México, Mexico City, Mexico (MHNCM); Museo de Historia Natural de Toluca, Toluca, Estado de México, Mexico (MHNT); Museo Nacional de Costa Rica, San José, Costa Rica (MNCR);

Natural History Museum, London, U.K. (NHMUK); Entomological Collection, Texas A & M University, College Station, Texas, USA. (TAMU); Colección Entomológica de la Facultad de Ciencias Agronómicas de la Universidad Autónoma de Chiapas, Villaflores, Chiapas, Mexico (UNACH); Yale Peabody Museum of Natural History, New Haven, USA (YPM).

The following private collections were also consulted: Bernardo López-Godínez, Guadalajara, Mexico (BLG); De la Maza Family, Mexico City, Mexico (CDM); Hagenbeck Family, Tehuacán, Puebla, Mexico (CFH); Turrent Family, Mexico City, Mexico (CFT); Villarreal Family, Oaxaca, Oaxaca, Mexico (CFV); Julián A. Salazar-Escobar, Caldas, Colombia (CJASE); Dirk Casteleyn, Brugge, West Flanders, Belgium (DC); Daniel J. Curoe, Mexico City, Mexico (DJCC); José de Jesús García-Díaz, Tehuacán, Puebla, Mexico (JJGD); Robert Worthy, Caterham, Surrey, U.K. (RW).

To complete the localities where the species has been recorded, the following literature was reviewed: Miller (1976, 1986, 2000); González *et al.* (2019), and García-Díaz and Turrent-Carriles (2022). From the reviewed collections, 39 males and 23 females of the species were analyzed. To sex the specimens, the frenulo-retinacular configuration was studied, which is different between the sexes.

## RESULTS

**Description of the collecting area.** The municipality of Tonicato, where the specimen was found, is located in the southeastern region of the State of Mexico and covers an area of 137,971 km<sup>2</sup>. The neighboring municipalities are Ixtapan de la Sal to the north, Zumpahuacán to the east, Pilcaya to the west, and the state of Guerrero to the south. It is mostly covered with low altitude tropical deciduous forest and, according to Morrone *et al.* (2022), Tonicato is part of the Transmexican Volcanic Belt province and the Balsas Basin province. The average annual precipitation is 973.5 mm, with June and September being the rainiest months, and the month with the least precipitation is March; the average temperature is 20.13°C, with January being the coolest month and May the one with the highest temperature (CONAGUA 2022).

**Distribution.** *Escalantiana escalantei* is a species inhabiting the tropical deciduous forest and the ecotone with montane cloud forest on the Pacific slope of Mexico (García-Díaz and Turrent-Carriles 2022). The northernmost reported locality is La Primavera, Chihuahua (Miller 1976; González *et al.* 2019; García-Díaz and Turrent-Carriles 2022). The following is a list of the localities where the taxon has been sighted and collected: **Chihuahua:** La Primavera; **Jalisco:** Chamela, Hostotipaquillo, San Felipe de Híjar, Tequila; **Guerrero:** Acahuizotla, Iguala, Mezcala; **Morelos:** Chinameca, Rancho Viejo, Tlaltizapán, Tepoztlán; **Puebla:** Tepenene (Miller 1976; González *et al.* 2019; García-Díaz and Turrent-Carriles 2022).

**First record for the State of Mexico.** 1♀, México, State of Mexico, Tonicato, 1400 m, 04/VII/2021, leg. Dale Lee Denham-Logsdon (MHNT) (Fig. 1).

## DISCUSSION

Unlike other states in the country, the State of Mexico has had very few lepidoptero-faunistic studies (Hernández-Mejía *et al.* 2008b), with published works in the last

decades being very specific (*e.g.*, Guzmán 1976; De la Maza-Ramírez and De la Maza-Elvira 1978; De la Maza-Elvira and Turrent-Díaz 1978; Barrera-García and Romero-Hernández 1986; Hernández-Mejía 2005; Hernández-Mejía *et al.* 2008a, 2008b). Miller (2000) only recorded one Castniidae species for the State of Mexico but she did not mention the species. However, from our review of collections, we now know that *Athis flavimaculata* (Miller, 1972) has been collected within the state in the localities of Chalma and Malinalco.

In accordance with specimens' records and literature the adult flight period of *E. escalantei* is during the rainy season, from early May until September, representing one of the castniid species with the latest flight period in Mexico.

Besides the known peculiarities of the Castniidae, such as their restricted distribution, territorial behavior between males and close relationship with their foodplants, this species has crepuscular habits, a behavior that has only been recently reported (García-Díaz and Turrent-Díaz 2022). Also, species in the genus *Escalantiana* are not easily attracted to light traps (García-Díaz and Turrent-Díaz 2022). These facts have possibly contributed to few locality records for the species, despite having a wide distribution in the country.

This new record for the State of Mexico suggests there is a high probability that other Castniidae species are present throughout the state. Considering the distribution of other species found on the Pacific slope of Mexico, *Athis miastigma* (Dyar, 1925) and *Mexicastnia estherae* are potential candidates that could be distributed within the state in places with high densities of *Hechtia* Klotzsch, 1835 and *Chusquea* Kunth, 1822. In order to learn more about the distribution of *E. escalantei* and other castniids in the State of Mexico, it will be necessary to carry out research and field trips in different localities for several years between the months of May and September.

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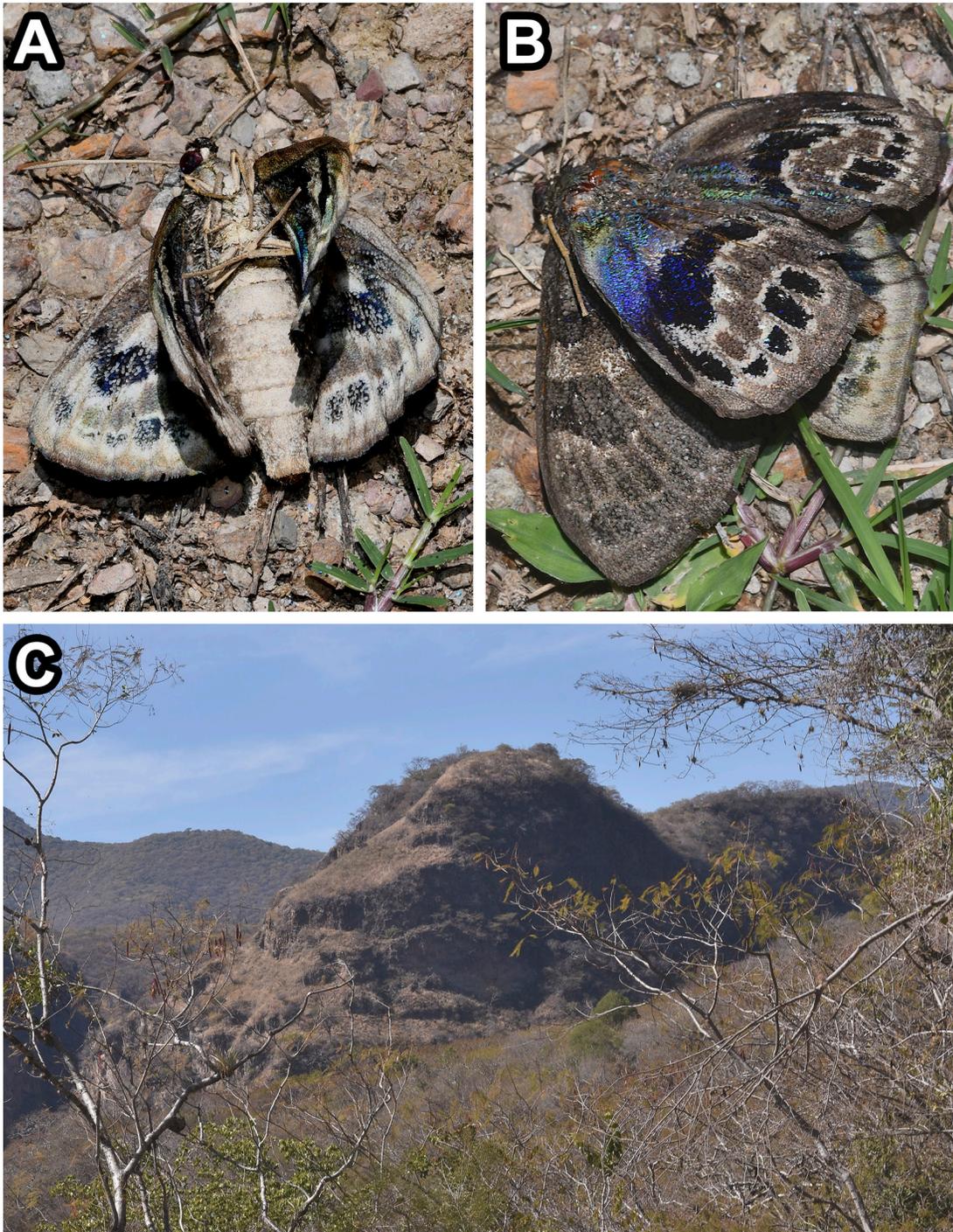
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**Figure 1.** Mounted female specimen of *Escalantiana escalantei* from the State of Mexico. Scale bar = 2 cm (photographs: Dale Denham).



**Figure 2.** (A-B) Dead specimen of *Escalantiana escalantei* in the field, State of Mexico, 4-VII-2021; (C) habitat of Tonatico, State of Mexico, Mexico, 29-XII-2021 (photographs: Dale Denham).