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Research note

Presence of *Euplatypus segnis* (Chapuis, 1865) on *Fraxinus uhdei* (Wenz.) Lingelsh. at central Mexico

Presencia de *Euplatypus segnis* (Chapuis, 1865) en *Fraxinus uhdei* (Wenz.) Lingelsh. en el centro de México

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Abstract

For this research study, specimens from the collection stored in the Integrated Pest Management Laboratory of the *Iztacala* Graduate School of Higher Studies, *Universidad Nacional Autónoma de México* (FESI) were reviewed. These organisms correspond to urban pest monitoring projects in the Valley of Mexico. They came from three different collection sources: (1) Lindgreen traps, during 2018-2019, in green areas of the FESI in *Tlalnepantla de Baz*, State of Mexico; (2) Specimens captured with homemade traps baited with ethanol during 2023 for the monitoring of the ash bark beetle *Hylesinus aztecus* in the *Bosque de Aragón*, *Gustavo A. Madero* Borough, Mexico City; (3) Manual collection of specimens of *Fraxinus uhdei* that presented secretions on the trunks in the *Miguel Hidalgo* Borough, Mexico City. For identification, photographic records were made using electron microscopy. Based on this, the presence of *Euplatypus segnis* on *F. uhdei* ash trees in Mexico City and the State of Mexico is recorded. Both entities are new records for this insect in the country. This species of ambrosial beetle causes fungal infections in host trees, with an unusual density of these coleopterans and the generation of secretions in the bark. Therefore, monitoring of these organisms in the Valley of Mexico is recommended to document their distribution and impact on urban trees.

Keywords: Ambrosia, borers, Coleoptera, beetles, urban pests, Platypodinae.

Resumen

Se revisaron especímenes de colección resguardados en el Laboratorio de Manejo Integrado de Plagas de la Facultad de Estudios Superiores Iztacala (FESI), Universidad Nacional Autónoma de México. Dichos organismos corresponden a proyectos de monitoreo de plagas urbanas en el Valle de México, los cuales procedieron de tres diferentes fuentes de colecta: (1) trampas *Lindgreen*, durante 2018-2019, en áreas verdes de la FESI en Tlalnepantla de Baz, Estado de México; (2) ejemplares capturados con trampas caseras cebadas con etanol, durante 2022, para el monitoreo del descortezador del fresno *Hylesinus aztecus*, en el Bosque de Aragón, alcaldía Gustavo A. Madero, Ciudad de México; (3) colectas manuales sobre ejemplares de *Fraxinus uhdei* que en 2022 presentaron secreciones sobre los troncos, en la alcaldía Miguel Hidalgo, Ciudad de México. Para la identificación se realizaron registros fotográficos de microscopía electrónica. Con base en lo anterior, se identificó la presencia de *Euplatypus segnis* sobre fresnos *F. uhdei* en la Ciudad de México y Estado de México. Ambas entidades son nuevos registros para este insecto en el país. Dicha especie de escarabajo ambrosial ocasiona infecciones por hongos en los árboles hospedantes, lo que supone una inusual densidad de este coleóptero y la generación de secreciones en la corteza. Por lo tanto, se recomienda hacer su monitoreo en el Valle de México para documentar su distribución y afectaciones al arbolado urbano.

Palabras clave: Ambrosiales, barrenadores, Coleoptera, escarabajos, plagas urbanas, Platypodinae.

Topic Developmen

Fraxinus uhdei (Wenz.) Lingelsh. is one of the fourteen ash species in Mexico (Rzedowski, 2006; Villaseñor, 2016). This tree frequently grows in humid areas such as ravines or canyons in the Valley of Mexico (Calderón de Rzedowski & Rzedowski, 2005). Its presence in cities is due to its high adaptability and resilience to water stress and nutrient deficiencies (Báez-Pérez et al., 2015; Beramendi-Orosco et al., 2016; Francis, 1990; Red de Viveros de Biodiversidad, 2021; Rendón-Correa et al., 2021; Villanueva-Díaz et al., 2015).

In urban environments, *F. uhdei* is affected by pests and diseases (Gobierno del Distrito Federal [GDF], 2008; Saavedra-Romero et al., 2019; Zaragoza-Hernández et al., 2015), primarily by bark beetles (Johnson-Montes et al., 2025), an endophytic

group of the Scolytinae and Platypodinae subfamilies (Coleoptera: Curculionidae), which infest diseased, old, or dead trees. However, other, more aggressive species can also affect healthier trees (Wood, 1982).

At the *Iztacala* Gaduate School of Higher Studies (*FESI*, by its acronym in Spanish), located in *Tlalnepantla*, State of Mexico, various projects are underway for the timely detection of insects that could become pests of urban trees in the Valley of Mexico. Therefore, the Platypodinae material housed in the collection of the Integrated Pest Management Laboratory at *FESI* was reviewed. This material was obtained from three different sources: (1) Lindgreen traps, collected during 2018-2019 in green areas of *FESI*; (2) Specimens captured with homemade traps baited with ethanol, collected during 2022, for monitoring the ash bark beetle *Hylesinus aztecus* Wood in the *Bosque de Aragón*, Mexico City (Johnson-Montes et al., 2025); (3) Specimens collected directly in 2022 from *F. uhdei* trees located on streets near the *Bosque de Chapultepec*, in the *Miguel Hidalgo* borough (Figure 1). The beetles were identified using Wood's keys (1982), and photographs of the diacritical structures were taken.

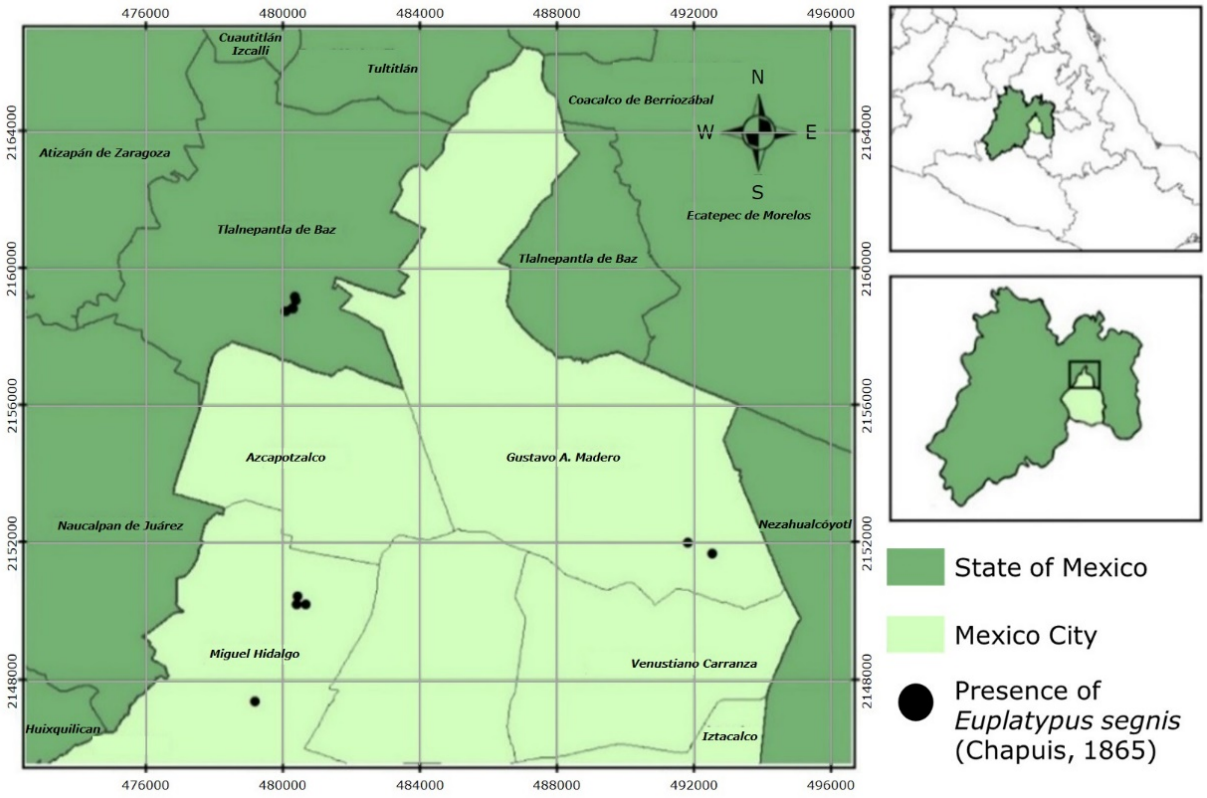


Figure 1. Presence of *Euplatypus segnis* (Chapuis, 1865) in the Valley of Mexico.

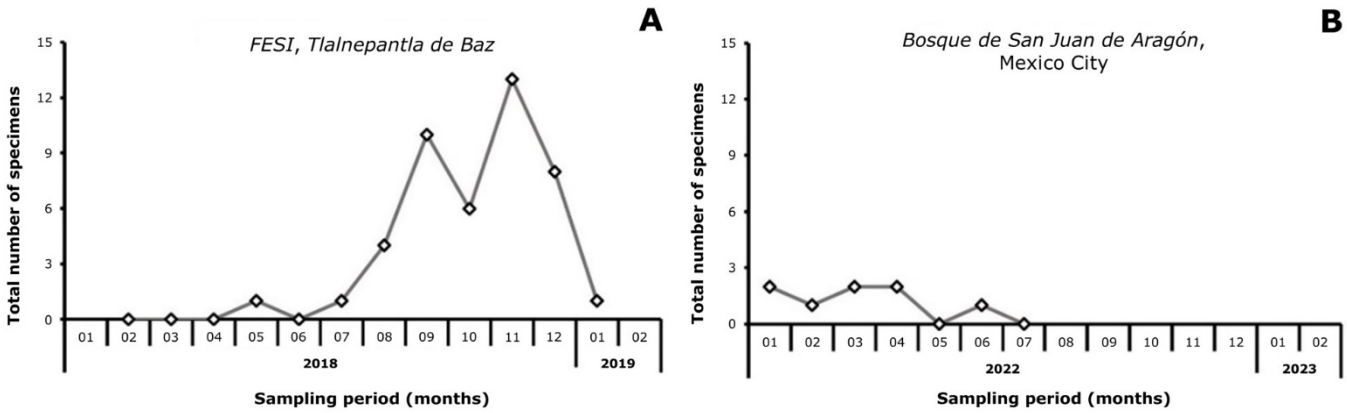
The identified species was *Euplatypus segnis* (Chapuis 1865) (Figure 2), an ambrosia beetle distributed in Mexico and Central America, which affects at least 11 host families (Smith-Cognato et al., 2026), including the Oleaceae family with *F. uhdei* (Atkinson et al., 1986). According to the literature, *E. segnis* affects the outer part of cut logs, felled in sawmills, and does not usually cause damage to its healthy hosts, although it may attack trees under stress conditions (Atkinson, 2017). It is also known as a bark and branch borer pest of walnut trees (Junglandaceae) (Soto-Hernández & Barros-Barrios, 2018), as well as a vector of fungal pathogens such as *Fusarium solani* (Mart.) Sacc., *Alternaria alternata* (Fr.) Keissl. or *Lasiodiplodia theobromae* (Pat.) Griffon & Maubl. (Alvidrez-Villarreal et al., 2012; Cibrián-Tovar et al., 1995).

A = Ash tree infested by *Euplatypus segnis* (Chapuis, 1865); B = Detail of secretions; C = Head of male *E. segnis*; D = Lateral detail of male head and thorax; E = Dorsal view of male *E. segnis*; F = Lateral view of male *E. segnis*; G = Head of female *E. segnis*; H = Lateral detail of female head and thorax; I = Dorsal view of female *E. segnis*; J = Lateral view of female *E. segnis*.

Figure 2. Presence of *Euplatypus segnis* (Chapuis, 1865) on ash trees (*Fraxinus uhdei* (Wenz.) Lingelsh.) in Mexico City.

In Mexico City, this insect was found from January to June 2022 in two areas of the *Bosque de Aragón*, *Gustavo A. Madero* borough. Specimens obtained from *F. uhdei* clumps in the *Miguel Hidalgo* borough also corresponded to *E. segnis*, where several organisms were recorded on a single tree (Figure 2A and 2B). At *FESI*, 44 specimens were collected from February 2018 to January 2019.

The observed fluctuation based on the trap results indicates that adult *E. segnis* at *FESI* were captured starting in May 2018, with an increase recorded from July onward and an upward trend reaching its peak in November with 13 total individuals, followed by a decrease to its lowest point in January of the following year. In Mexico City, particularly in the *Bosque de San Juan de Aragón*, no individuals were obtained in 2021, only during the period from January to June 2022, with a scarce capture rate of fewer than three total organisms per month (Figure 3).



A = Organisms collected at the *Iztacala* Graduate School of Higher Studies (*FESI*), *Tlalnepantla de Baz*, State of Mexico, 2018-2019; B = Organisms collected in the *Bosque de San Juan de Aragón*, *Gustavo A. Madero*, Mexico City, 2022.

Figure 3. Fluctuation of *Euplatypus segnis* (Chapuis, 1865) in traps baited with ethanol in two entities during different periods in the Valley of Mexico.

Until now, this insect had been identified in 16 Mexican states: *Campeche*, *Chiapas*, *Coahuila*, *Guerrero*, *Jalisco*, *Michoacán*, *Morelos*, *Nayarit*, *Nuevo León*, *Oaxaca*, *Quintana Roo*, *San Luis Potosí*, *Tabasco*, *Tamaulipas* and *Veracruz* (Atkinson et al., 2025), as well as *Chihuahua* (Global Biodiversity Information Facility [GBIF], 2025). Therefore, the State of Mexico and Mexico City represent new distribution records in the country.

Boring insects are one of the four main pest problems in urban forests (Tello et al., 2005). Tree species such as *Fraxinus* spp. are affected by other, more significant borers such as *Hylesinus* spp. in Europe and America (Johnson-Montes et al., 2025; Tello et al., 2005). And although the development of *E. segnis* as an urban pest is not clearly studied, monitoring in municipalities is recommended for a future tree management scheme.

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Conflict of interest

The authors declare no conflict of interest.

Contribution by author

Oscar Martínez Morales: sampling design, data analysis, manuscript writing; Tonatiuh Santos Neria: insect collection and photography; Araceli López Juárez: insect collection; Ana Lilia Muñoz-Viveros: data organization and analysis; Simón Asaf Johnson Montes: insect collection, map generation; Mauricio Pérez Rosas: data processing and trap collection assistance; Juan Manuel Vanegas Rico: manuscript writing.

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