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First record of the beekeeping pest *Aethina tumida* Murray
(Coleoptera: Nitidulidae) for Honduras

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First record of the beekeeping pest *Aethina tumida* Murray (Coleoptera: Nitidulidae) for Honduras

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Abstract. *Aethina tumida* Murray (Coleoptera: Nitidulidae) (also known as the small hive beetle), an important pest in apiaries, is reported from Honduras for the first time, **new country record**. The precise distribution in the country is unknown, and no damage related to it has been observed. Photographs are provided to aid in its identification. Differentiation of *A. tumida* from *Aethina villosa* Reitter and *Aethina quadrata* Sharp, which also occur in Honduras, is provided.

Key words. Sap beetle, apiaries, *Apis mellifera*, pest.

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Introduction

Aethina tumida Murray (Coleoptera: Nitidulidae) was originally described from sub-Saharan Africa (Murray 1867) but has spread throughout all continents except Antarctica (Neumann et al. 2016). The species is considered an important pest in apiaries. In the United States, for example, it is estimated to cause annual losses of about \$3 million USD (Hood 2004).

The damage caused by *A. tumida* involves physical destruction to the hive, bee brood predation, fecal contamination of the honey, fermentation of honey and pollen, and, in extreme cases, hive abandonment (Neumann and Elzen 2004; Lóriga Peña et al. 2014; Pereira et al. 2021). Poor beekeeping practices, stress, queen related problems, and weak colonies have all been associated with the presence of *A. tumida* (Spiewok and Neumann 2006; Al Toufaily et al. 2017).

In the Americas, *A. tumida* was first found in Florida, USA in 1998 (Thomas 1998). Since its arrival in the Western Hemisphere, efforts to trace and explain its dispersal across the continent have been made. Beeswax transport has been suggested as a pathway for beetle dispersal (Idrissou et al. 2019), but natural movement of established populations into new areas has also been documented (Bulacio Cagnolo et al. 2023).

Materials and Methods

Two adult specimens of *A. tumida* were collected during April 2022 in apiaries located in El Zamorano, Francisco Morazan, Honduras (14.008, -87.003). Two more beetles were found in the same locality during January 2024. Additional specimens, always in low numbers, were observed continuously after the initial discovery by German Pacheco (Zamorano University).

The specimens were mounted and identified using the diagnosis in Neumann et al. (2013). Photographs were taken using a Canon EOS Rebel T5i mounted on a Leica EZ4 stereomicroscope. Composite images were obtained by using PICOLAY (<http://www.picolay.de>). Individual images were edited and organized in plates in GIMP (<http://www.gimp.org>). Voucher specimens are deposited in the insect collection at the Pan-American Agricultural School, El Zamorano, Honduras (EAPZ).

Results and Discussion

Since the initial detection in April 2022, four adult *A. tumida* (Fig. 1) were collected in different beehives from both apiaries found at Zamorano. This species can be separated from other nitidulids based on (1) eyes with lateral tuft of setae; (2) legs broad and flattened; and (3) pygidium basally with a transverse row of foveae (Thomas 1998). It can also be separated by the deeply, triangularly emarginate labrum and the dense and undulate tarsal setae (these two characters plus the transverse row of foveae on the pygidium are diagnostic of the genus *Aethina*).

Four other species of *Aethina* Erichson occur in Central America: *A. brunnea* Reitter, *A. concolor* Sharp (not *A. concolor* (Macleay)), *A. quadrata* Sharp, and *A. villosa* Reitter (Blackwelder 1945). Both *A. villosa* and *A. quadrata* occur in Honduras. *Aethina villosa* is known in Honduras from the departments of El Paraíso, Francisco Morazán, Olancho, and Yoro (specimens in EAPZ and in the Ronald D. Cave collection), and it can be distinguished from *A. tumida* by the slender, nearly parallel-sided tibiae, band of pale setae on the bases of the elytra, and elytra broadly rounded at the sutural angle. *Aethina quadrata* is known from the department of Atlántida (eight specimens in the Ronald D. Cave collection) and is diagnosed by the slender tibiae, unicolored pubescence, and broader elytra that are less rounded at the sutural angle.

In Central America, *A. tumida* is recorded in Nicaragua (Calderón Fallas et al. 2015), Costa Rica (Ramírez and Calderón 2018), Guatemala (García-Ochaeta 2020), and now Honduras. The species is also reported from El Salvador (WOAH 2013) and Belize (WOAH 2016) on the World Organization of Animal Health website.

No other records of *A. tumida* in Honduras are known. As in the other countries in the region where *A. tumida* is known, the extent of the damage these beetles are causing is unknown. Despite active efforts to locate eggs and larvae none were found in El Zamorano apiaries.



Figure 1. *Aethina tumida* from El Zamorano, Honduras, dorsal and ventral views. (Scale = 2.0 mm.)

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