

N O T E

Observations of a Brood Site of Triceratops Beetles (Coleoptera: Scarabaeidae) at the Wormsloe Historic Site in Savannah, Georgia, USA¹

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A large number of insect species, especially beetles, rely on standing dead trees (snags) or logs (on the ground) for shelter and/or development of young. In the southeastern United States, for example, snags and logs were found to harbor over 250 species of saproxylic beetles (Ulyshen and Hanula 2009, Forest Ecol. Manage. 257: 653–664). The natural history of many of these species is poorly known. On 7 June 2018, authors HL and DE were performing routine landscaping and yard work at the Wormsloe Historic Site in Savannah, Georgia, a >120-ha wooded property composed of palms, live oaks, and coastal marshland. In doing so, a standing, dead cabbage palm, *Sabal palmetto* (Walter) Lodd. Ex Schult. & Schult., was knocked over. The snag was approximately 5–6 m tall and had no leaves or any canopy (i.e., only the trunk remained); the top had apparently sheared several years earlier. Once felled, it was apparent that the top of the trunk was hollow with an open cavity approximately 0.5 m in depth (Fig. 1A). On closer examination, 6 live beetles were discovered living in the cavity. They were subsequently identified as *Phileurus truncates* (Palisot de Beauvois), which are sometimes referred to as triceratops beetles (Fig. 1B). All had been apparently loosely buried in the soft, decaying wood at the bottom of the cavity.

Phileurus truncates is not well-studied, although historic collecting records indicate it is known to occur in Georgia (Leng 1910, J. New York Entomol. Soc. 18: 71–82). There is little known of its biology, and there is no known description of its nesting (or brood) preferences. We surmise that this snag was a nest or larval brood site because the beetles appeared to be recently eclosed, based on the auburn color of their sternites (i.e., not yet fully melanized), and there were six in one cavity that all appeared freshly emerged (i.e., no scratches or wear on their surface).

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Fig. 1. Beetle brood cavity (A) and triceratops beetles (B) found within the cavity.

Interestingly, there have been anecdotal reports of this species entering homes through chimneys (Evans 2014, *Beetles of Eastern North America*, Princeton Univ. Press, pp. 172), which is of importance here. The snag in question had a distinct chimney-like appearance before it was felled (i.e., a single columnar trunk with an opening at the top). It is possible that this species has a preference for chimney-like snags, which leads them to enter actual chimneys (presumably when no fire is lit).

The other aspect of this discovery that is of note is the height of the nest site. One of the authors (AD) routinely collects another saproxylic beetle at this location, namely, horned passalus beetles, *Odontotaenius disjunctus* (Illiger), which are found in rotten logs on the ground throughout this property (Davis et al. 2013, *J. Entomol. Sci.* 48: 1–3). Over several years of collecting, AD has never observed *P. truncates* in these ground logs, even of logs from cabbage palm. It is, therefore, possible that the lack of observations of this species and, thus, the lack of basic information on it are because it is rarely encountered at ground-level. Future investigations of its natural history or biology may need to focus on (tall) dead snags with similar characteristics.

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