HELLINSIA COSTATUS (BARNES & LINDSEY, 1921), A NEW PLUME MOTH RECORD FOR THE GEORGIA FAUNA (LEPIDOPTERA: PTEROPHORIDAE)

BY

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The plume moth genus *Hellinsia* (Tutt) is represented by 59 described species in the Nearctic Region. Of these, 19 species belong to a distinct Asteraceae stem boring clade characterized by plain cream to beige adults, larvae with a distinct circular anal plate, and characters of male and female genitalia (Matthews 2006, Matthews unpublished data). The Georgia fauna includes four stem borers, *Hellinsia balanotes* (Meyrick), *H. kellicottii* (Fish), *H. chlorias* (Meyrick), and *H. unicolor* (Barnes & McDunnough). *Hellinsia unicolor*, aptly named, can be separated from the others by the absence of tiny dark scale spots marking the base of the forewing cleft and the terminus of the forewing veins. Fresh specimens of *H. unicolor* (see Fig. 10, Matthews 2010) have tan to gray scaling running along veins of forewing lobes, while worn adults appear more "unicolorous".

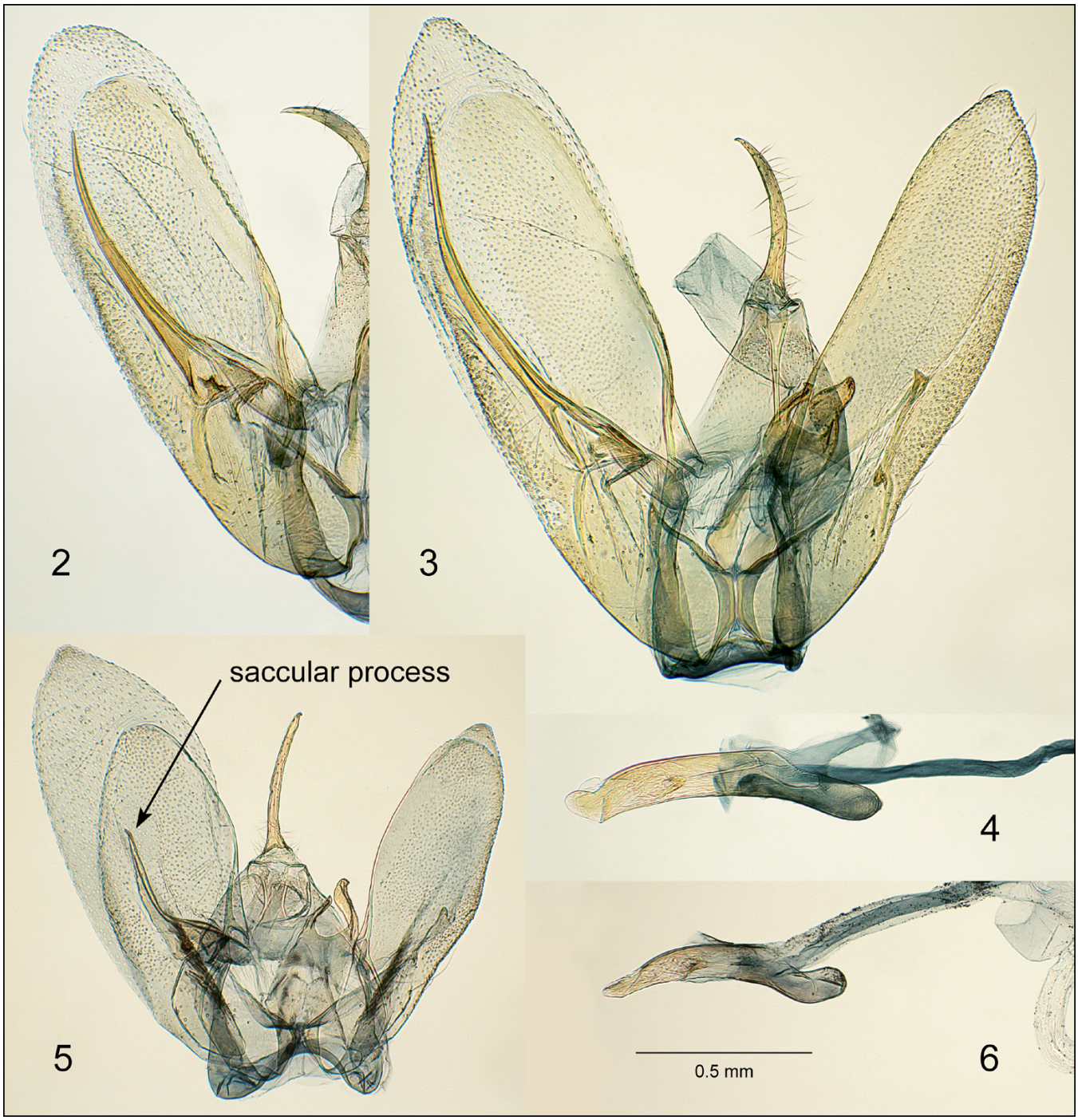
While checking the gender on recently collected Georgia specimens to be catalogued and determined as *H. unicolor*, DLM was surprised to discover a rather large left valve saccular process on one specimen where the valvae were partly open on the pinned specimen. Having previously dissected and confirmed the identity of *H. unicolor* from Southern Georgia, including recent material from Sapelo Island (Figs. 5–6) (Adams et al. 2015), DLM noted the odd specimen was from Bartow County in Northern Georgia. Both specimens from this location were dissected and subsequently identified as *Hellinsia costatus* (Barnes & Lindsey) (Figs. 1–4) by comparison with previously identified material and the male genitalia figured in Barnes and Lindsey (1921).

Fig. 1. Adult male *Hellinsia costatus* and associated data labels.

Hellinsia costatus was described from seven specimens including the holotype from Tulare County, California. In addition, Barnes and Lindsey (1921) mentioned a USNM specimen from Vineyard, Utah, which has been dissected and likewise confirmed as *H. costatus* by DLM. Other specimens examined and confirmed with dissections are from Uintah County, Utah, and Lander, and Nye Counties in Nevada. Additional unconfirmed records are from USA: Colorado and CANADA: British Columbia. The two Georgia specimens, both males, were collected in light traps 27 August 2016, 5 mi. ESE of Salacoa Rd., S of Salacoa Creek by JKA. These specimens not only represent a new state record for Georgia, but are also the only known *H. costatus* specimens from the Eastern USA.

While morphological characters indicate this species is most likely a composite stem borer, larval host species for *H. costatus* are unknown. The Georgia location where the *H. costatus* specimens were collected is fallow pastureland, with wooded hillsides to the east, and a couple of creeks running through the pasture. The habitat is indeed home to a rich variety of composites, including *Eupatorium, Eutrochium, Polymnia, Vernonia, Helianthus, Solidago* and several others.

The addition of *H. costatus* to the Georgia plume moth fauna brings the total number of species to 31. An updated list of the Georgia fauna is available online (Adams 2017) including *H. costatus* and recent records from surveys of



Figs. 2-6. Male Genitalia. 2) *Hellinsia costatus* left valve of Georgia: Bartow Co. specimen, slide DM 1359; 3) valvae of second Bartow Co. specimen illustrated in Fig. 1, slide DM 1752; 4) phallus removed from same individual; 5) *Hellinsia unicolor*, valvae of specimen from Georgia: McIntosh Co. (Int. of Middle Rd & E-W Autobahn 5-6 August 2016 L.A. Durden, slide DM 1358); 6) phallus removed from same individual. Images were captured using a Canon Rebel T3i digital camera (Canon USA, Inc., Lake Success, NY) mounted on a Zeiss Axiophoto (Carl Zeiss Inc., Thornwood, NY) transmitted light microscope in conjunction with Canon EOS Utility software.

Sapelo Island (Hyatt 2014, Hyatt and Durden 2015, Adams et al. 2015). Surveys of neighboring Alabama are incomplete. However, Mississippi, similar to Georgia in latitudinal range, and also with coastal plain habitats has a total of 32 recorded Pterophoridae species (Matthews 2010). Georgia and Mississippi currently have 22 species in common. Nine species occur in Georgia which are not yet recorded from Mississippi, and likewise, Mississippi has 10 species not yet recorded in Georgia. With a larger area (by 23%) than Mississippi and additional habitats from the Blue Ridge, Valley and Ridge, and Piedmont Physiographic Provinces, we expect additional Georgia species shared and not shared with Mississippi. Of the 42 species currently known from Florida (Matthews, unpublished data), four occur in Northern Florida which have not yet been recorded in Georgia or Mississippi and may extend

into the southern counties or coastal islands. A total of 45 Pterophoridae species for Georgia is conceivable. We thus anticipate additional Georgia records as ongoing surveys continue and more localities are sampled.

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