

A NEW *BLASTOBASIS* ASSOCIATED WITH ACORNS AND PECANS IN THE SOUTHEASTERN AND SOUTHCENTRAL UNITED STATES (LEPIDOPTERA: COLEOPHORIDAE: BLASTOBASINAE)

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ABSTRACT.—*Blastobasis taurusella* n. sp. is described from southeastern and southwestern United States and is associated with feeding in pecans of *Carya illinoensis* (Wangenheim) (Juglandaceae) and acorns of *Quercus alba* Linnaeus (Fagaceae). A photograph of the imago, illustrations of wing venation, and male and female genitalia are provided. A mediolongitudinal process on the male seventh sternum, not known previously in Coleophoridae, is described.

KEYWORDS: Blastobasidae, Blastobasini, *Blastobasis taurusella* n. sp., Fagaceae, hostplants, Juglandaceae, Nearctic, North America, oaks, pecans, taxonomy, USA.

Since Meyrick (1894), the Blastobasinae have been considered to be a monophyletic group. Recent studies (Adamski and Brown, 1989; Hodges 1998) have corroborated this view and have rigorously established the monophyletic relationships among the genera and the phylogenetic relationships of the Blastobasinae within Gelechioidea. In this paper, the Blastobasidae (*sensu* Adamski and Brown, 1989) are treated as a subfamily within the Coleophoridae, following Hodges (1998).

The Blastobasini are one of two clades within Blastobasinae, and *Blastobasis* remains the basal lineage in the Blastobasini (Adamski and Brown, 1989). There are 34 species of *Blastobasis* (described and undescribed species) that occur in North America north of Mexico, and there are many more species represented in the Neotropics. Just a few species of *Blastobasis* occur in the Palearctic region and other faunal regional of the world.

Species of *Blastobasis* are small to medium-sized moths, somewhat drab in appearance, with few distinguishing wing pattern characteristics. They feed on a variety of plant families that include, Bromeliaceae (probably detritus), Cycadaceae, Fabaceae, Fagaceae, Juglandaceae, Liliaceae, Pinaceae, and Rosaceae. Characters that support the monophyly for *Blastobasis* are summarized by Adamski and Brown (1989).

Kornerup and Wanscher (1978) was used as a color standard for the description of the adult vestiture. Genitalia were dissected as described by Clarke (1941), except mercurochrome and chlorazol black were used as stains. Pinned specimens and genital preparations were examined with dissecting and compound microscopes. Measurements of wings and genitalia were made using a calibrated ocular micrometer.

The purpose of this paper is to describe a new *Blastobasis* and to call attention to this potential pest to foresters and pecan growers.

Blastobasis taurusella Adamski, new sp.

(Fig. 1-5)

Diagnosis.— Male 7th sternum with mediolongitudinal process; uncus broad; gnathos with two large divergent projections; female antrum dilated posteriorly. **Head:** Vertex and frons with grayish-brown scales tipped with pale grayish brown; antennal scape, pedicel, and flagellum mostly with pale grayish-brown scales intermixed with grayish-brown scales, flagellomeres gray, pecten pale grayish brown; male first flagellomere laterally expanded on one side forming a notch; outer surface of labial palpus mostly with grayish-brown scales tipped with pale grayish-brown intermixed with grayish-brown scales, segments paler near apex; inner surface patterned as above but paler; proboscis pale gray. Older

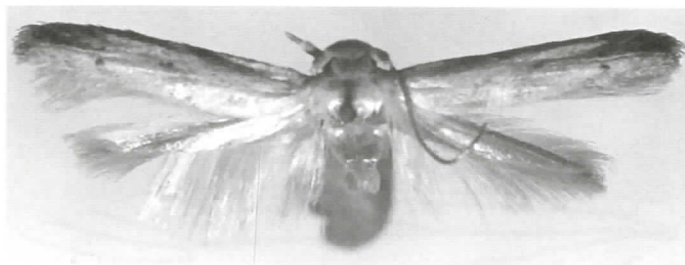


Fig. 1. Holotype of *Blastobasis taurusella*.

faded specimens are pale brown. **Thorax:** Tegula and mesoscutum with grayish-brown scales tipped with pale grayish-brown; outer surface of legs with grayish-brown scales, intermixed with grayish-brown scales tipped with pale grayish-brown and few pale grayish-brown scales, midtibia and apical part of segments and tarsomeres pale grayish brown; inner surface mostly with white scales, intermixed with pale grayish-brown scales; forewing (Fig. 1, 3), length 4.1-5.9mm (n = 16), upper surface with mostly grayish-brown scales tipped with white, intermixed with grayish-brown and pale grayish-brown scales (some specimens darker basally); cell with one faint brownish-gray midcell spot and two spots near distal end of cell; undersurface brown; venation with base of R_4 and R_5 arising slightly anterior to mediolongitudinal point of cell; cubitus 4-branched with M_2 and M_3 arched, divergent from M_1 and radial veins; CuA_1 nearly straight to margin; CuA_2 slightly arched beneath cell; hindwing pale gray; venation with slightly arched posteriorly; cubitus 4-branched, M_2 and M_3 divergent slightly beyond cell, CuA_1 and CuA_2 nearly parallel to margin. **Abdomen** (Fig. 2): Pale gray above and beneath. **Male Genitalia** (Fig. 4): Uncus broad, with short submarginal setae; gnathos with two prominent, divergent projections beneath anus; valva upper and lower parts setose; proximal flange rounded distally, demarcated by stout setae, intermixed with hairlike setae and short microtrichia; manica with short microtrichia throughout; vinculum wide; juxta, a narrow support; aedeagus slightly angled; anellus obtuse, with short, stout setae. **Female Genitalia** (Fig. 5): Ovipositor telescopic, with four membranous subdivisions; ostium within intersegmental membrane between 7th and 8th sterna, membrane microtrichiate; seventh sternum protracted medially, posterior margin obtuse; antrum posteriorly broadened; inception of ductus seminalis and membranous part of ductus bursae arising at anterior part of antrum; anterior part of ductus bursae with imbricate plates within; corpus bursae with a posterior lobe (collapsed in Fig. 5); signum present.

Types.— *Holotype* ♂, "Brownsv[i]lle, Tex[as], 4-V-[19]04", HS Barber, Collector", "♂ Genitalia slide by D. Adamski 2713, USNM 81282" [green label]. The holotype is deposited in the National Museum of Natural History [USNM], Smithsonian Institution, Washington, D.C., USA.

Paratypes, 15 paratypes: TEXAS.— 1 ♂, same label data as holotype except, "10-15" [May]. 2 ♂♂, "at light", "April 26-28", "Brownsv[i]lle, Tex[as]", FH Benjamin, Collector", one specimens with "♂ Genitalia Slide by D. Adamski 2706, USNM 81275" [green label]. 1 ♂, "Cuero, T[exa]s", "Aug[ust] 10-[19]10", "Reared from pecan" [*Carya illinoensis* (Wangenheim)], "Chittenden No.

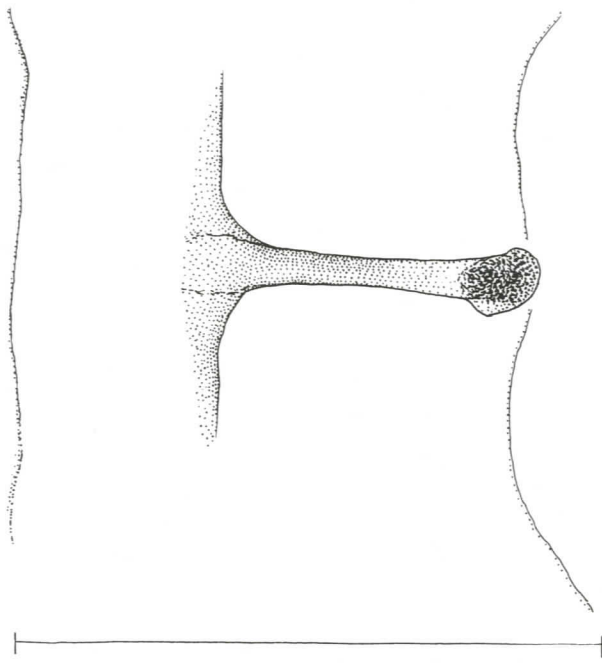


Fig. 2. Mediolongitudinal process on seventh sternum of *Blastobasis taurusella* (scale = 0.5mm).

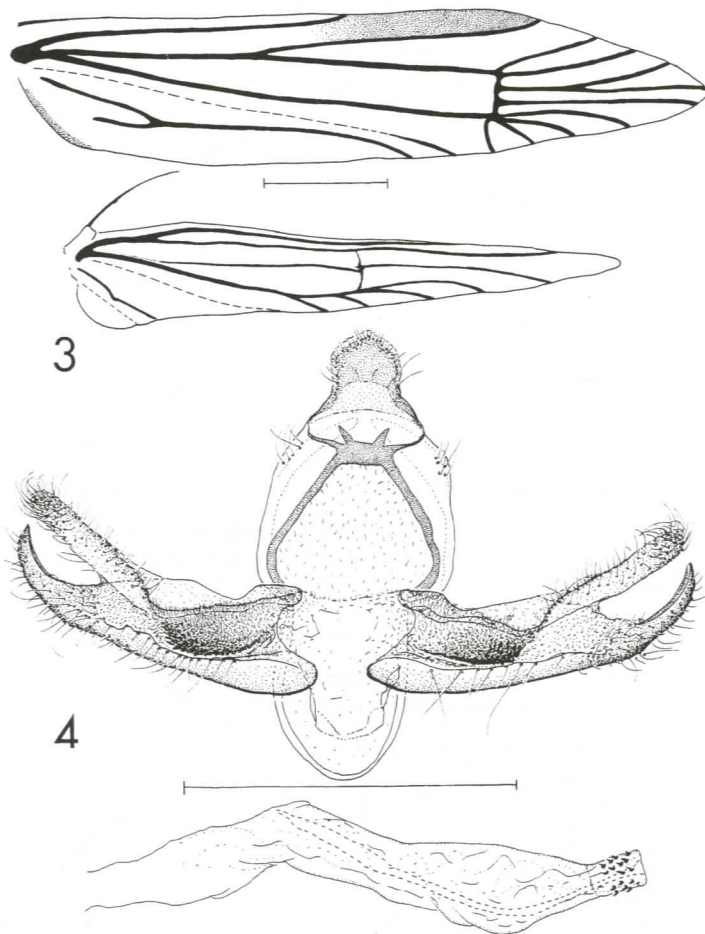


Fig. 3. Wing venation of *Blastobasis taurusella* (scale = 1mm). Fig. 4. Male genital capsule and aedeagus of *Blastobasis taurusella* (scale = 0.5mm).

1893", "M.M. High", "♂ Genitalia slide by D. Adamski 2745, USNM 81814" [green label], "♂ Wing Slide by D. Adamski 2771, USNM 81333", [green label]. 1 ♂, "Brownsv[ille], Texas", "♂ Genitalia Slide by D. Adamski 2741, USNM 81310." ARKANSAS.—2 ♂♂, "Devil's Den St[ate] P[ar]k, Wash[ington] Co[unty], Ark[ansas], 20-IV-1966, R.W. Hodges [collector], one specimen with, "♂ Genitalia slide by D. Adamski 1154, USNM 80547" [green label], "♂ Wing Slide by D. Adamski 1308, USNM 80680" [green label], "*Blastobasis* sp 6, Adamski and Brown, [19]89 Voucher"; 1 ♂, same label data as above except, "21-VI-1966", "♂ Genitalia slide by D. Adamski 1271, USNM 80661" [green label]; 1 ♂, same label data as above except, "1-VI-1966", "♂ Genitalia slide by D. Adamski 1185, USNM 80577" [green label], "♂ Wing slide by D. Adamski 1309, USNM 80681" [green label], "*Blastobasis* sp 6, Adamski and Brown, [19]89 Voucher." 1 ♂, same label data as above except, "VII-22-1966", "♂ Genitalia slide by D. Adamski 1248, USNM 80638" [green label], "*Blastobasis* sp 6, Adamski and Brown, [19]89 Voucher." 1 ♂, "Washington Co[unty], Ark[ansas], 3-31-1972", "White Oak Acorns", "G.W. Wallis, Collector", "Genitalia slide by D. Adamski 1294" [green label]. 2 ♂♂, "Siesta Key, Sarasota Fl[orida], April 13, 1960, C.P. Kimball" [collector], "♂ Genitalia slide by D. Adamski, 2617, USNM 81185" [green label], "♂ Genitalia slide by D. Adamski 2619, USNM 81187" [green label]. FLORIDA.—1 ♂, 1 ♀, "FLORIDA, Lake Placid, Archbold Bio[logical] Sta[tion], 8-15 May 1964, R.W. Hodges", one specimen with, "♂ Genitalia slide by D. Adamski 2603, USNM 81172" [green label], "♂ Wing slide by D. Adamski 2671, USNM 81240" [green label], "*Blastobasis* sp 6, Adamski and Brown [19]89 Voucher"; one specimen with, "♂ Genitalia slide by D. Adamski 2604, USNM 81173" [green label], "♂ Wing Slide by D. Adamski 2672, USNM 81241" [green slide], "*Blastobasis* sp 6, Adamski and Brown [19]89 Voucher." All paratypes are deposited in the National Museum of Natural History [USNM], Smithsonian Institution, Washington, D.C., USA.

Remarks.—*Blastobasis taurusella* ranges along the gulf states of southern United States, from southern Florida west to southern Texas and probably into Mexico. It is known as far north as Arkansas. Recorded flight period is from around mid April to late August. Hosts include *Quercus alba* Linnaeus (Fagaceae) and *Carya illinoensis* (Wangenheim) (Juglandaceae). Immature stages of *B. taurusella* are not known.

Etymology.—The name *taurusella* is derived from the Latin word *taurusella* meaning bull. *Blastobasis taurusella* is named for the horn-like ganthal projections of the male genital capsule.

Discussion.—*Blastobasis taurusella* is probably closely related to *Blastobasis glandulella* (Riley), as both species share similar hosts. However, it should be noted, that two Neotropical species, *Blastobasis gracilis* Walsingham, 1897, and *Blastobasis obstricta* Meyrick, 1918, share a mediolongitudinal process on the seventh sternum similar to that in *Blastobasis taurusella*. Because hosts and immature stages for these and other species of *Blastobasis* are not known, the phylogenetic relationships of these species is problematical.

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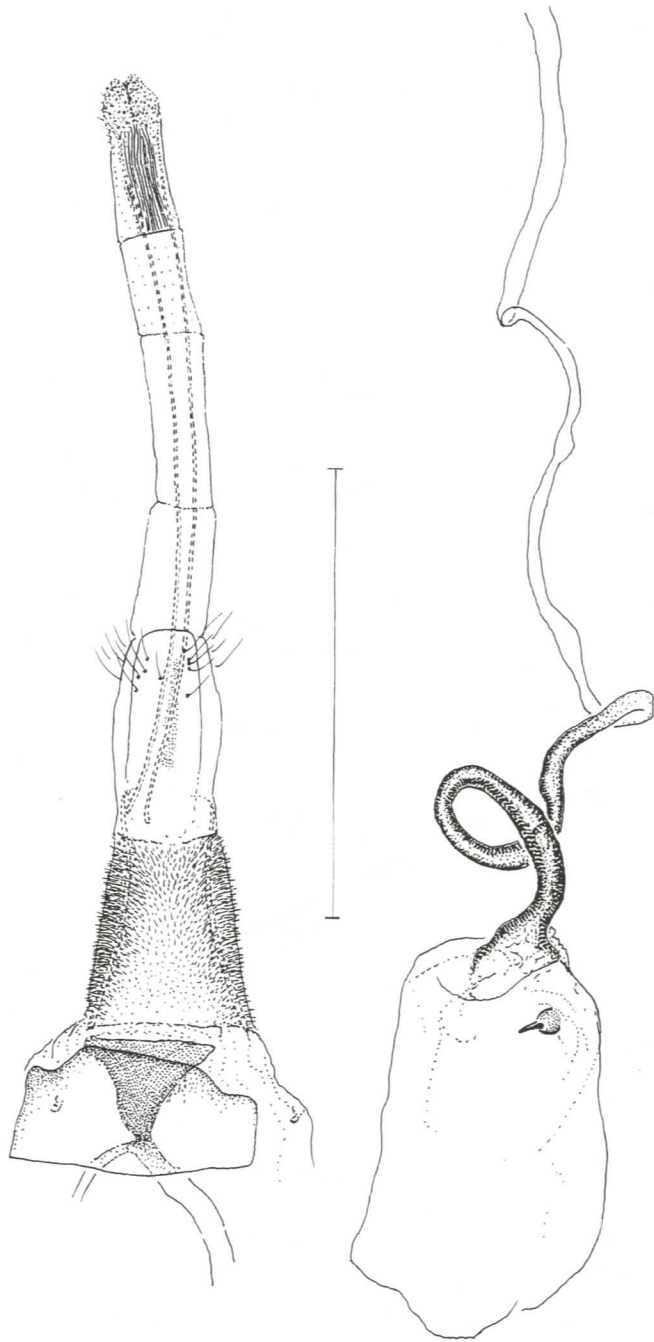


Fig. 5. Female genitalia of *Blastobasis taurusella* (scale = 1mm).

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