Zootaxa 1080: 1–16 (2005)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

1080

Two new species of *Neodactria* Landry (Lepidoptera: Pyralidae: Crambinae) from the United States of America

BERNARD LANDRY[1] (BL) & RICHARD L. BROWN[2] (RLB)

[1]*Muséum d'histoire naturelle, C.P. 6434, CH-1211 Genève 6, Switzerland; bernard.landry@mhn.ville-ge.ch*
[2]*Mississippi Entomological Museum, Box 9775, Mississippi State, MS 39762, U.S.A.; moth@ra.msstate.edu*

Abstract

Two new species of *Neodactria* B. Landry, *N. daemonis* B. Landry & A. B. Klots **n. sp.**, from Arkansas and Missouri, and *N. oktibbeha* B. Landry & R. L. Brown **n. sp.**, from Mississippi are described and illustrated.

Key words: Lepidoptera, Pyralidae, Crambinae, *Neodactria*, new species, Arkansas, Mississippi, Missouri, prairie remnants

Introduction

Surveys of Lepidoptera for the purposes of faunal documentation and habitat conservation have led to the discovery of a number of new species in the United States in recent years, e.g. Landry (1994), Metzler (1998, 2000), Metzler and Adamski (2002), Metzler and Sabourin (2002). A survey of insects in prairie remnants of the Mississippi Black Belt by RLB and his collaborators has documented several new species and provided a basis for restoring one prairie remnant (Brown 2003; Wiygul *et al*. 2003). RLB and his collaborators collected two new species of the genus *Neodactria* B. Landry; one was described as *Neodactria glenni* Landry & Klots in Landry and Metzler (2002), and the other is described below.

During a survey of Devil's Den State Park, Washington County, Arkansas, in 1966, Ronald W. Hodges and E. L. Todd, assisted by RLB, were responsible for collecting three of the four available specimens of the second new species of *Neodactria* described here. Alexander B. Klots, who died in 1989 (Wagner 1992), worked on the North American fauna of Crambinae for most of his career and found that these *Neodactria* specimens from

Accepted by John Brown: 27 Sept. 2005; published: 15 Nov. 2005

Arkansas belonged to a new species, which he named "daemonis," but for which he never published a description. This information was found by BL during his doctorate work; the new name was used in A.B. Klots' manuscript notes and on labels pinned to the three specimens he had available for study. We are pleased to apply his name to the description of this new taxon.

In addition to *Neodactria glenni* and the two species described herein, five more species of *Neodactria* are presently recognized: *N. modestella* (Barnes & McDunnough, 1918), *N. murella* (Dyar, 1904), and the *N. luteolella* group (*N. luteolella* (Clemens), *N. caliginosella* (Clemens), and *N. zeella* (Fernald)).

Material and Methods

The specimens mentioned here are deposited in the following collections: The Natural History Museum, London, England (BMNH); Canadian National Collection of Insects, Ottawa, Ontario, Canada (CNC); collection of George J. Balogh, Portage, Michigan, U.S.A. (GJBC); Mississippi Entomological Museum, Mississippi State, Mississippi, U.S.A. (MEM); Muséum d'histoire naturelle, Geneva, Switzerland (MHNG); Essig Museum, University of California at Berkeley, U.S.A. (UCB); and National Museum of Natural History, Washington, D.C., U.S.A. (USNM).

The generic description and terminology for morphological features follow Landry (1995). The description of *N. daemonis* is based on both females and males, which lack sexual dimorphism in wing shape and color, whereas the sexes of *N. oktibbeha* are described separately. The color of only the lateral sides of legs is described. For the holotypes, abbreviated words on labels are completed in brackets, and backward slashes indicate different lines of the label. In the lists of paratypes, dates are standardized, and collectors' names are placed in parentheses.

Taxonomy

Neodactria Landry

Neodactria Landry, 1995: 101. Type species: *Crambus luteolellus* Clemens, 1860.

Diagnosis. The dorsoapically opened aedeagus was the first recorded apomorphy defining *Neodactria* (Landry 1995). A valva with spinules or spines on the costal process, usually contained in a furrow (except in *N. daemonis* for which the spines are exposed) is a new synapomorphy for *Neodactria*. The moths also have a characteristic forewing pattern consisting of median and subterminal transverse lines, although the pattern is not visible in many specimens of *N. oktibbeha*.

Remarks. The generic description and other information provided by Landry (1995) are still valid although the antennal flagellomeres were described as serrate whereas they are better described as laminate, and the feminine gender of the name was inadvertently unmentioned.

Neodactria oktibbeha B. Landry & R.L. Brown, NEW SPECIES (Figs 1, 3–5)

Type material. HOLOTYPE ♂: "[USA] MISS[ISSIPPI]., Oktibbeha Co[unty]./ T19N, R15E, Sec[tion]. 16/ 21 April 1987/ R. L. Brown" [white label, printed except for day of collecting and last two digits of year]; "HOLOTYPE/ Neodactria/ oktibbeha B. Landry & R. L. Brown" [red label, handwritten in black ink]. The specimen is mounted on a regular pin and in perfect condition except for missing a small portion of the right forewing apex and some fringe scales. It is deposited in the USNM.

PARATYPES (25 ♂, 29 ♀) from MISSISSIPPI. Oktibbeha Co.: 6 ♂, 25 ♀ (1 ♂, 1 ♀ with genitalia on slides BL 386, BL 1353) with same data as holotype; 1 ♀ (genitalia on slide BL 1354) with same data as holotype except 24.iv.1987; 1 ♂ with same data as holotype except 23.iii.1990 (D. M. Pollock); 2 ♂ with same data as holotype except 31.iii.1990 (D. M. Pollock); 1 ♂, 1 ♀ with same data as holotype except 9.iv.1990 (D. M. Pollock); 1♂ with same data as holotype except 10.iv.1990 (D. M. Pollock); 2 ♂ with same data as holotype except 13.iv.1990 (D. M. Pollock); 1 ♂ with same data as holotype except 7.iv.1991 (D. M. Pollock); 8 ♂, 2 ♀ with same data as holotype except 27.iv.1991 (D. M. Pollock); 2 ♂ (genitalia on slides BL 1352, BL 1356), Starkville [data inaccurate, both specimens collected at same location as holotype], 10.iv.1992 (R. Kergosien [with R. L. Brown]). Lowndes Co.: 1 ♂, T17N, R15E, Sec. 34, Black Belt Prairie, 13.iv.1994 (D. M. Pollock). Deposited in BMNH, CNC, MEM, MHNG, UCB, USNM.

Diagnosis. In forewing markings (Fig. 1) this species contrasts with other species of *Neodactria* in that it usually lacks the typical median and subterminal wavy lines. Only some specimens have a faint subterminal line, and only the best marked specimens show an indication of a very oblique median line (more oblique than in any other species of the genus) extending from 1/3 of dorsal margin to about end of discal cell. The forewing also is slightly narrower than in the other species of the genus (see remarks below). The mouse grey forewing color of the females and the slightly darker and more brownish color of the male forewing are constant in all the specimens observed. These particular colors are rarely seen in other species of *Neodactria*. In female genitalia *N. oktibbeha* is similar to *N. murella* (Dyar) and *N. glenni* in that the projecting tube of the sterigma is scaleless, whereas it is scaled in the other species of the genus. *Neodactria oktibbeha* can be separated from *N. murella* and *N. glenni* in that its projecting tube is very large and associated with large, thickly sclerotized lateral plates with a pair of small crests dorsobasally; the projecting tube of *N. glenni* is smaller, its associated lateral plates are large, and it lacks dorsobasad crests, whereas the sterigma of *N. murella* is much less

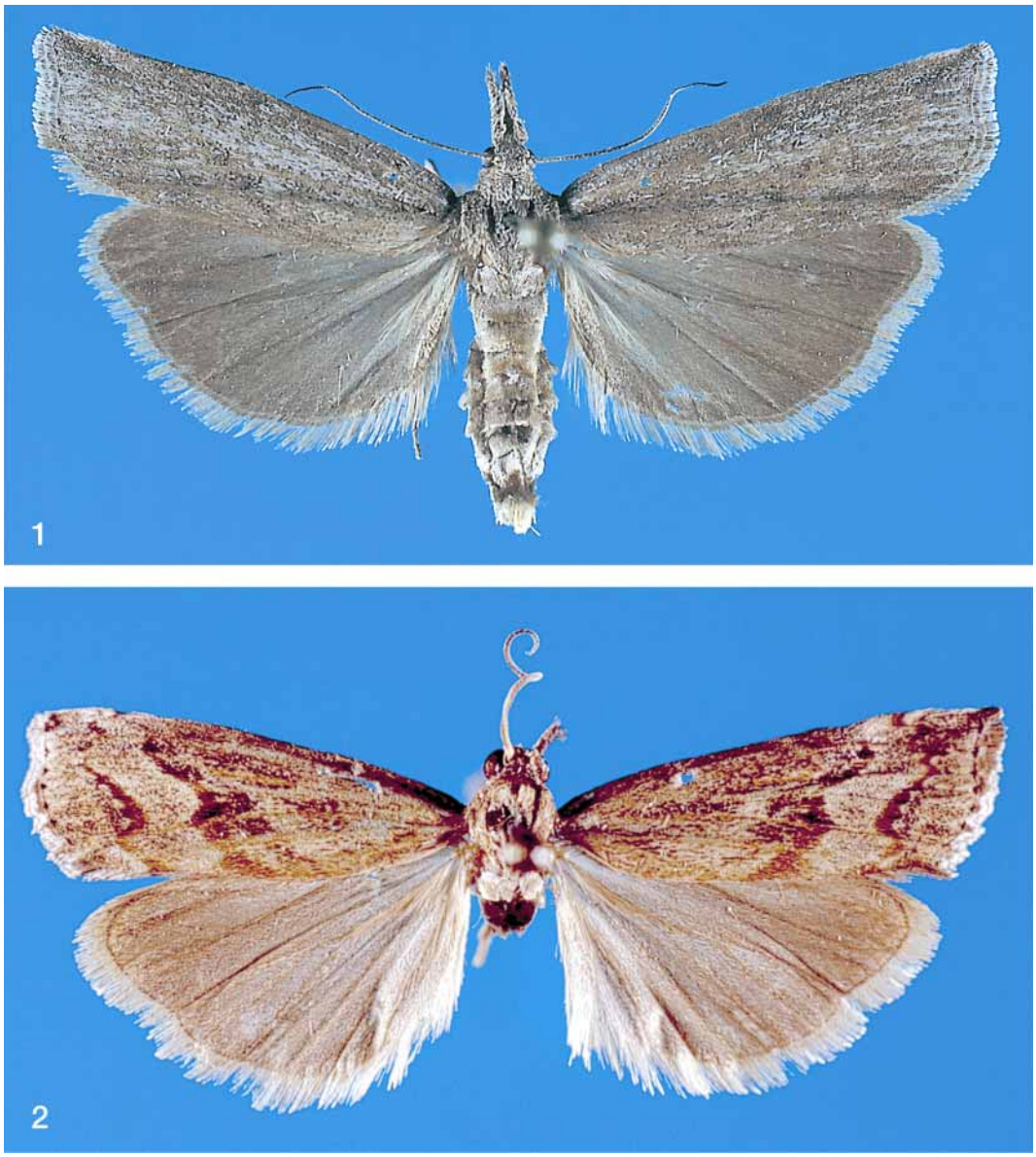
developed, with the projecting tube short and weakly sclerotized. In male genitalia this species is closest to the *N. luteolella* group. The best diagnostic characters to separate them are as follows:

1. Costal process of valva closely following course of cucullus for most of length, gently narrowing in width toward apex with (usually) very small and sharp, recurved point apically; uncus broadly rounded; aedeagus usually with a distinct bend downward from base of dorsally opened distal section, with a distinct but small coecum penis unadorned with a flap, about 1/2 length of vinculum + valva .....*N. luteolella* group
1'. Costal process of valva detached from cucullus at base, narrowing strongly from base, broadly curved inwardly, and rather sharply pointed at apex (Fig. 3); dorsal margin of uncus straight at base, curving downward toward apex; aedeagus almost straight in side view, without distinct coecum penis but with short dorsoventrally compressed flap, about 2/3 length of vinculum + valva .....*N. oktibbeha*

Description. Male (n=26) (Figs. 3, 4; see Fig. 1 of female for wing pattern). Head, maxillary palpus, labial palpus and thorax brownish grey with scales mostly tricolored (white at apex, brown in middle gradually becoming whitish beige toward base), but more uniformly colored and paler beige to whitish beige at base of palpi ventrally and around eye ventrally and posteriorly. Labial palpus 3 X longer than widest diameter of eye. Proboscis scaling whitish beige. Antenna with scape and pedicel dark greyish brown with lateral white patch; dorsal width of flagellomeres about half of lateral width, dorsal surface with narrow band of scales (4–5 across) pale brown and beige, slightly tricolored (darker in middle), lateral surfaces with sensilla about as long as 1/3 width of widest flagellomeres. Foreleg mostly brownish grey, with scales only slightly paler at base and apex, with a few mostly white scales at apex of femur. Midleg coxa pale whitish beige, with scales slightly darker in middle; femur dark greyish brown on ventral half except for white patch apically, dorsal half with white apex of scales more conspicuous; tibia and tarsi pale brownish grey, with scales more or less conspicuously paler at tip, with small white patch at apex of tibia, with tibial spurs concolorous with general color of tibia. Hindleg coxa and femur as in midleg; tibia generally whitish beige, with a mixture of mostly white to tricolored scales with pale brownish grey in middle, spurs uniformly brownish beige; tarsi almost uniformly whitish beige on first tarsomere, becoming slightly darker brown toward last tarsomere, with most scales only faintly darker at apex. Wingspan (n=26): most specimens between 23–28 mm, but one = 19 mm (holotype: 25 mm). Forewing mostly brownish grey, with scales tricolored with various shades of brown, sometimes completely white or completely dark brownish grey (almost black) near the middle of the wing; costa above cell darker brown; with a pair of more or less conspicuous darker brown longitudinal lines above and below cell in middle of wing; sometimes dark line above cell continuing to apex; sometimes with slightly paler longitudinal line made of white and beige scales in cell; with a beige longitudinal line in

cubital fold from base to beyond middle of wing; occasionally with indication of darker subterminal line at 3/4 wing length in cubital sector; occasionally also, but more often than for subterminal line, with a very oblique darker median line extending from 1/3 of dorsal margin to about end of cell; also with a series of six small dark brown spots between veins on outer margin; fringe greyish brown with scales paler at base and tip, also with some pure white scales randomly distributed. Hindwing uniformly brownish grey, with scales bicolored, darker on distal half; fringe with basal row of shorter scales mostly greyish brown but with paler base, row of longer distal scales whitish beige and slightly tricolored with pale greyish brown in middle. Abdomen brownish grey with scales tricolored dorsally on first two segments and ventrally on segments III–VIII, ventrally with segment I+II and praecinctorium with scales mostly unicolorous whitish beige; coremata on intersegmental membrane VIII–IX unicolorous, beige.

Male genitalia (n=3) (Figs. 3, 4). Uncus about as long as tegumen, of medium width in side view, laterally compressed to half dorsoventral width beyond basal 1/3, straight on basal 2/3, gently down-curved beyond, with setation of moderate length and thickness from base to before apex, sometimes slightly enlarged dorsoventrally before apex, moderately pointed apically. Gnathos slightly shorter than uncus, with narrow lateral arms comprising 1/2 total length, apical section narrow, dorsoventrally flattened, poorly sclerotized, and narrowly rounded at apex. Tegumen rather short and bulky, with rather wide lateral arms about as long as dorsal connection, with ventral connection narrow and sometimes incomplete. Valva with costal process of medium width on basal half, directed slightly downward, with setation of moderate length dorsally, distal half narrower and narrowing to a point, curving first upward and then medially; cucullus of same small girth for whole length, slightly ascending at about 1/4 right angle and with very slight inward curve, barely longer than costal process, with slight bump medially before middle, with setation of moderate length, apically rounded; sacculus more strongly sclerotized but without short ridge near base of cucullus, with setation of moderate length. Vinculum with rather narrow arms narrowing toward anterior end, anteriorly digit-shaped in side view, narrowly rounded in dorsal view, and slightly curving upward. Juxta short, broad bell-shaped in dorsal view. Pseudosaccus only slightly convex (dorsoventrally compressed), rhombus-shaped, without median ridge, posterior margin broadly rounded, anterior margin more narrowly rounded. Aedeagus of medium girth and mostly straight, in side view with ventral margin sometimes slightly concave subbasally and with very short coecum penis slightly bent downward, dorsally opened from about middle to apex and with lateral margins gently decreasing toward apex, in dorsal view slightly enlarged at coecum penis (more so on the left side) and subapically with membrane lightly sclerotized and expanded as rounded lateral flaps, slightly narrower and rounded at apex, coecum penis not distinct from shaft, with short dorsoventrally compressed flap; vesica usually with pair of small, more or less sclerotized and blunt structures located above subapical membranous lateral flaps.

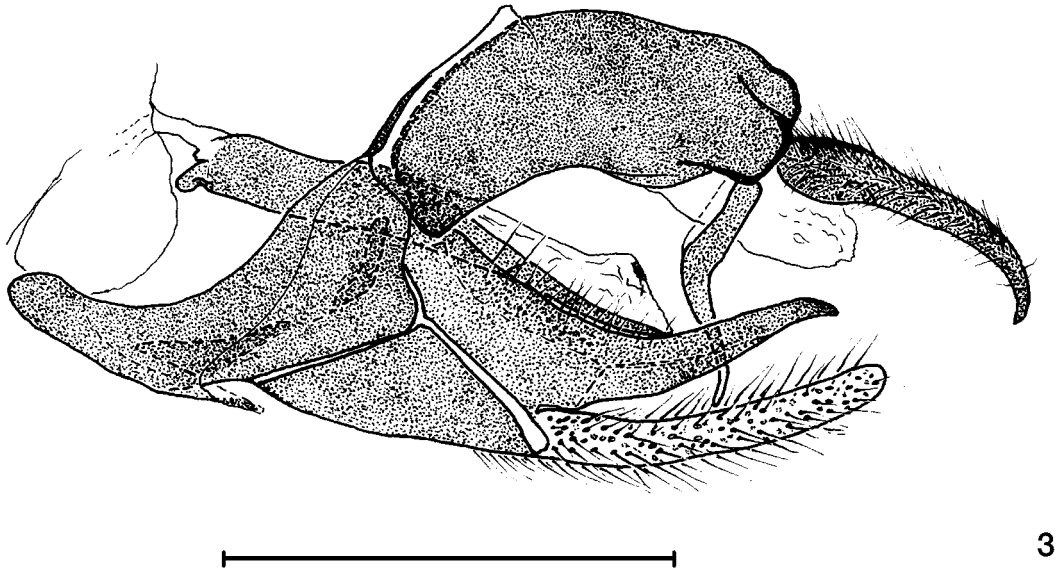


FIGURES 1–2. Habitus of *Neodactria* species; 1, *N. oktibbeha*, paratype female; 2, *N. daemonis*, holotype.

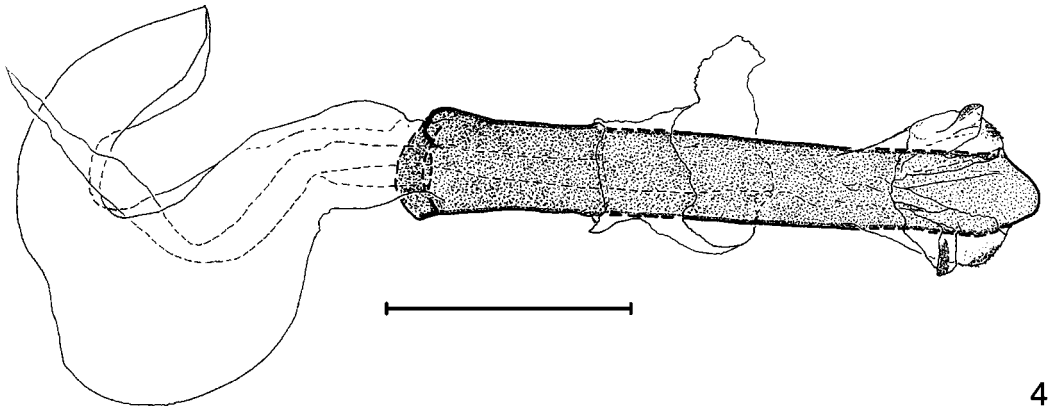
Female (n=29). Wingspan: 20–31 mm. Antenna with scales covering third of each flagellomere dorsally, ventrally with sensilla slightly shorter than 1/3 width of larger flagellomeres. Forewing color more grey than male's and usually without darker longitudinal markings and without subterminal transverse line; hindwing slightly paler than male's. Female genitalia (n=2) (Fig. 5). Papillae anales with moderate setation of short to medium length and with scobination. Posterior apophyses straight, moderately narrow and narrowing to rounded apex. Anterior apophyses of medium width, narrowing

to narrowly rounded apex. Sterigma a pair of large, well sclerotized lateral plates connecting medioventrally to form scaleless projecting tube of medium length, without cavities but with single short bump on each side dorsally. Ductus bursae of medium girth, slightly sclerotized posteriorly and surrounded by rather large membranous pouch opening partly or completely at posterior end. Ductus seminalis opening in pouch at posterior end of ductus bursae. Corpus bursae about same length as ductus and about twice its girth, with slight angle to the left, slightly wider at apex (almost pear-shaped).

Distribution. This species is known only from prairie remnants in the Black Belt of Oktibbeha County and Lowndes County, slightly northeast of central Mississippi.



3



4

FIGURES 3–4. Male genitalia of *Neodactria oktibbeha*; 3, whole genitalia in side view, slide BL 1356, scale bar = 1.0 mm; 4, aedeagus in dorsal view, slide BL 1352, scale bar = 0.5 mm.

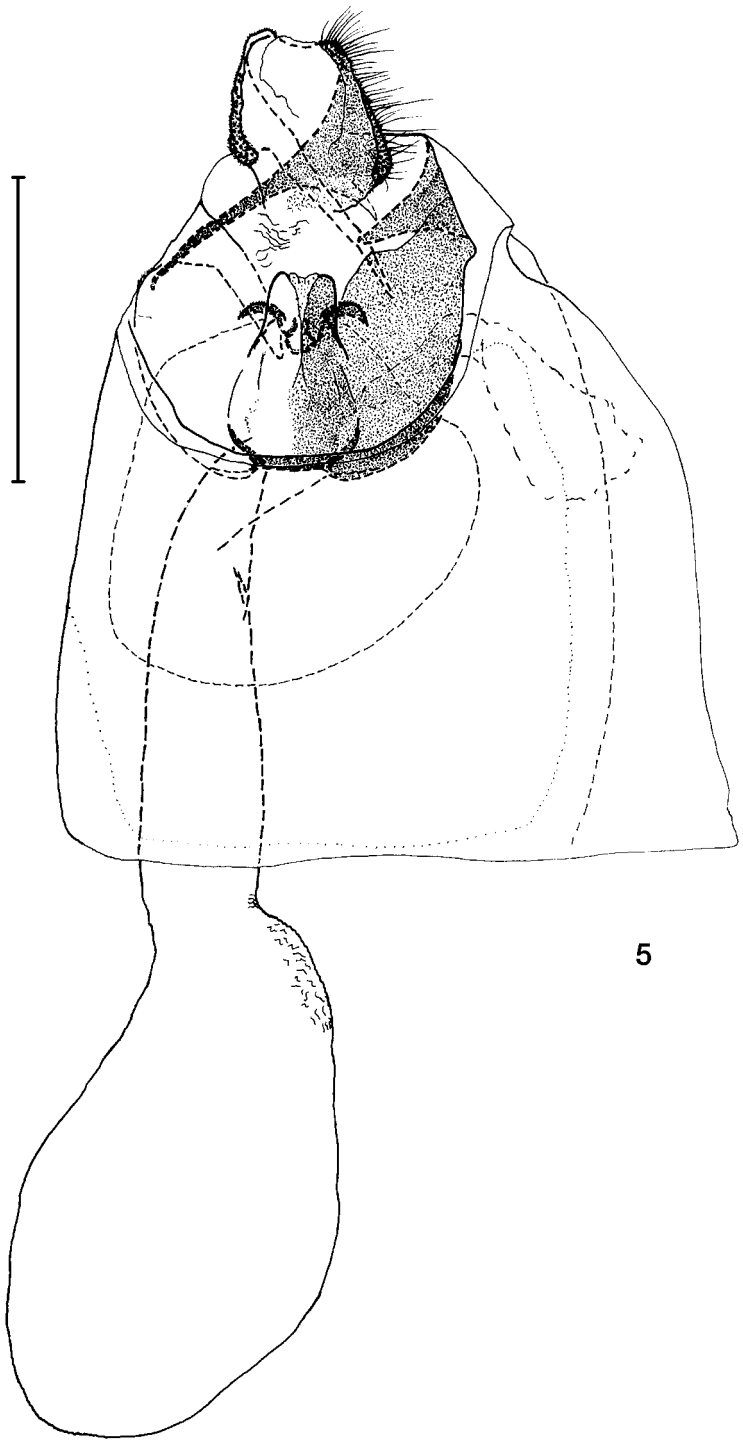


FIGURE 5. Female genitalia of *Neodactria oktibbeha* in ventral view, slide BL 1353, scale bar = 1.0 mm.

Collection and habitat notes. All specimens were collected during a survey of Lepidoptera in the Black Belt physiogeographic region of Mississippi conducted from 1987 to 1994. Collections were made with 15-watt blacklights in ten prairie remnants and two oak-hickory forest remnants on 145 nights during all months except December. Specimens of *N. oktibbeha* were collected on eleven nights at two prairie remnants from the end of March to the end of April. During these two months a total of 26 samples (some taken at two locations on the same night) were obtained from five prairie remnants. This species was not collected on three nights of sampling in two oak-hickory forest remnants of the Black Belt during April. Specimens of *N. oktibbeha* have not been collected in other physiogeographic regions of Mississippi in which a comparable or greater number of samples have been taken during March and April nor in grasslands and other habitats of states adjacent to Mississippi, although the latter have had less sampling during March and April. Based on this sampling, *N. oktibbeha* is univoltine and appears to be restricted in distribution to only a few prairie remnants in the Black Belt of Mississippi.

Leidolf and McDaniel (1998) described the flora of the type locality, which they referred to as Sixteen Section Prairie. They found that the dominant grasses included *Andropogon glomeratus* (Walter), *A. virginicus* L., *Bouteloua curtipendula* (Michx.), *Panicum virgatum* L., and *Schizachyrium scoparius* (Michx.). In addition to *B. curtipendula*, several forbs were recorded that have distributions primarily in the Great Plains. Brown (2003) discussed the paleoenvironment and biogeography of the Black Belt, with emphasis on the type locality, which he termed the Osborn Prairie. This prairie remnant supports a large number of insect species in Coleoptera, Hymenoptera, and Lepidoptera with distributions that are disjunct from the Great Plains and other grasslands (Wright *et al*. 1997; Schiefer 1998; Brown 2003). Much of this prairie remnant, as well as other remnants in the Black Belt, has been threatened by invasion of *Juniperus virginiana* L., erosion, and other disturbances. The uniqueness of the Osborn Prairie, the type locality of *N. oktibbeha*, was a stimulus for organizing the Friends of the Black Belt who have obtained a thirty-year lease of this area for insuring its conservation and restoration (Wiygul *et al*. 2003).

Etymology. The specific epithet refers to the type locality in Oktibbeha County. Oktibbeha originally designated the name of the creek (now called Tibbee) in the northern part of the county that formed part of the boundary between the Choctaw and Chickasaw Nations. Oktibbeha, in the Choctaw language, means "Ice Therein" (K. Baca, pers. comm.).

Remarks. The slight difference in forewing width compared to length is valid for most specimens; in *N. oktibbeha* this ratio ranged from 0.34 to 0.37 in six specimens measured (average = 0.35; 3 males and 3 females), while in *N. luteolella* this ratio varied between 0.37 and 0.44 in nine specimens measured (average = 0.40). The other species of the genus have wider forewings.

***Neodactria daemonis* B. Landry & A. B. Klots, NEW SPECIES (Figs 2, 6–9)**

Type material. HOLOTYPE ♂: "ARKANSAS/ Devil's Den St[ate]./ P[ar]k. VI-27-1966/ E. L. Todd" [printed white label]; "♂ genitalia slide/ 31 Dec[ember]. 1968 # 3/ A.B. Klots Neodactria/ daemonis Klots MS/ Holotype ★" [pale green label, hand written in black ink except for "genitalia slide" and "A.B.Klots" which are typed, and for the star, which is drawn in red ink]; "HOLOTYPE/ Neodactria/ daemonis B. Landry & A.B. Klots" [red label, handwritten in black ink]. The specimen is mounted on a regular pin and is missing the right antenna beyond the first two flagellomeres, the right maxillary palpus, the left labial palpus, one midleg, and one hindleg; the one midleg and one hindleg present are broken beyond the coxa, attached to the pin with glue, and missing the last four tarsomeres. The genitalia are mounted on a slide in Canada balsam and are in good condition. The tegumen + uncus + gnathos and the aedeagus were detached from the rest of the genitalia and mounted as in Figs. 6 and 8; the abdomen is mounted laterally. It is deposited in the USNM.

PARATYPES (1 ♂, 2 ♀). ARKANSAS. 2 ♀, Devil's Den State Park: one with genitalia on slide A.B. Klots 31 Dec. 1968 # 4, 10.vii.1966 (R. W. Hodges) (USNM); one with genitalia on slide BL 1359, 30.vi.1966 (no collector) (MHNG). MISSOURI. 1 ♂ (genitalia on slide BL 1616), Barry Co., Roaring River St[ate] P[ar]k, 24.v.1981 (G. J. Balogh) (GJBC).

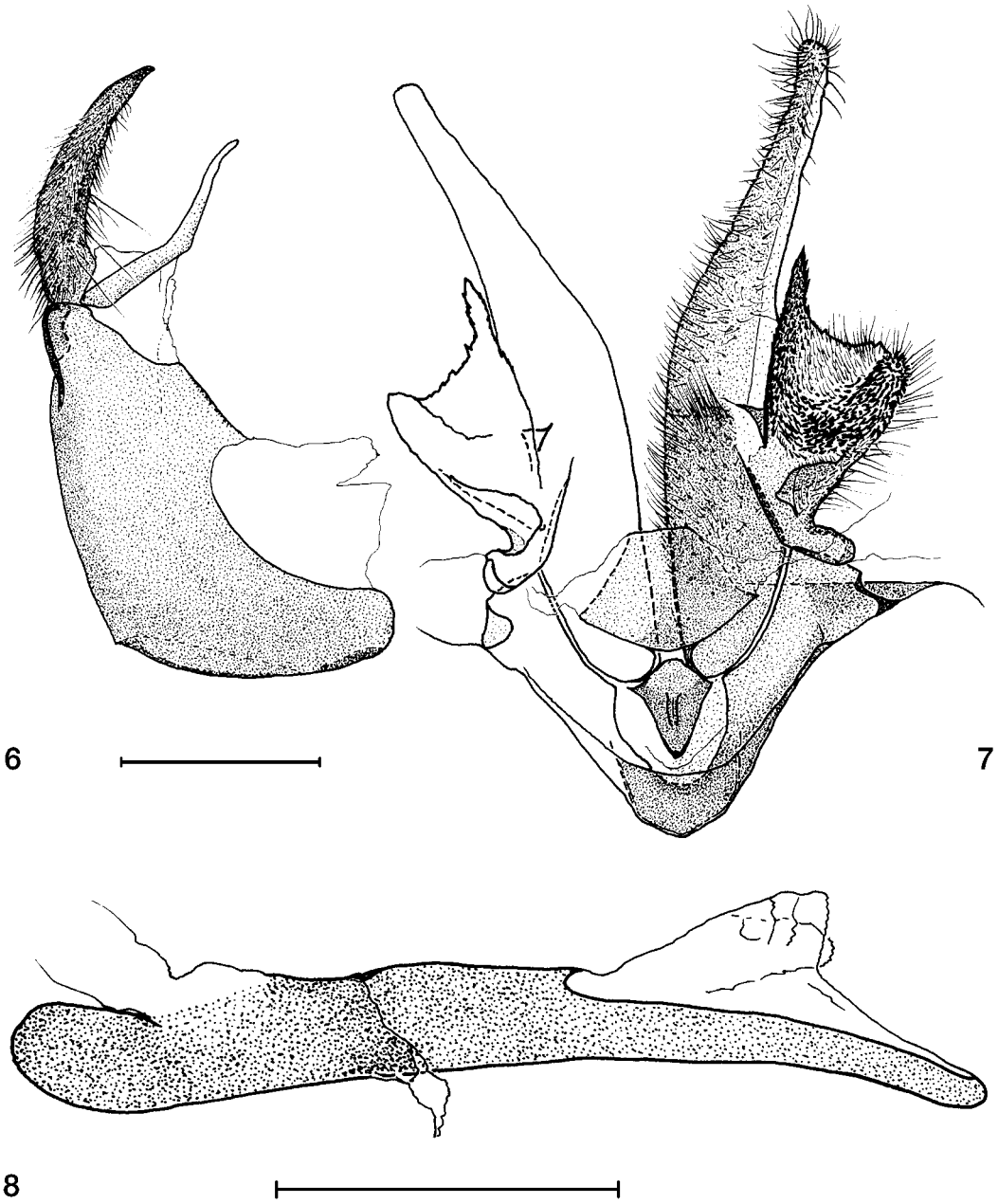
Diagnosis. This species can be separated from other species of *Neodactria*, except for similarly colored specimens of the *N. luteolella* group, by wing color and markings. In the female genitalia this species has a sterigma with a scaled projecting tube as in the *N. luteolella* group, but more material is needed to determine if there are differences between the species involved. However, in the male genitalia *N. daemonis* is easily separated from other species of *Neodactria* by the strongly developed, spined, and peculiarly shaped costal process of the valva (Fig. 7).

Description. Male and female (n=4) (Fig. 2). Head beige, with some white scales behind ocellus and some scales tricolored with pale brown in the middle. Maxillary palpus with a mixture of scales tricolored pale to dark brown in their middle, also with some purely pale beige scales mostly at base. Labial palpus laterally with tricolored scales mostly brown with beige or white tip and base; medially with scales paler, beige. Proboscis whitish beige. Antenna beige with pale brown tinge; male antennal flagellomeres with dorsal width about 0.4 lateral width, dorsal surface with narrow band of scales (4–5 across), lateral surfaces with sensilla reaching length of about 1/4 width of widest flagellomeres; female antenna with scales covering about one third of each flagellomere dorsally, ventrally with sensilla about half as long as width of larger flagellomeres. Thorax brownish beige with most scales tricolored with pale brown to greyish brown in their middle; some purely beige scales at collar. Foreleg coxa with tricolored scales mostly brown on dorsal half and with mostly pure beige scales on ventral half; femur mostly greyish brown with tricolored scales only slightly paler at base and tip,

also with line of beige to white scales on ventral edge; tibia greyish brown with scales only slightly paler brown at their apex; tarsomeres generally pale brownish beige, with scales tricolored with greyish brown in middle and beige at base and tip. Midleg coxa with unicolorous white and beige scaling, the latter especially at apex; femur with mixed unicolorous white to beige scales and tricolored scales with pale greyish brown in their middle; tibia mostly pale greyish brown or beige with some unicolored beige scales along ventral edge, especially on distal half; tarsomeres beige, with some tricolored scales greyish brown in their middle. Hindleg coxa with unicolorous white to pale beige scaling at base and along dorsal edge, with pale greyish brown scales mostly tricolored along middle and at apex; femur with white to pale beige unicolorous scales along dorsal edge, with pale greyish brown scales usually tricolored along ventral edge; tibia pale beige with few darker pale greyish brown scales, especially toward apex; tarsomeres I-V entirely pale beige. Male wingspan (n=2): 21.0–25.5 mm; female wingspan (n=2): 18.0–22.0 mm. Forewing beige with markings of various shades of brown; median line usually complete, made of unicolorous chestnut brown scales, sometimes with additional dark brown scales at end of and below cell, starting at 3/5 on dorsal margin, extending obliquely toward apex to cubital fold, turning obliquely with same angle in opposite direction to dorsal margin of cell, turning again obliquely toward apex to about 7/10 wing length (near base of R5), turning back directly toward base until about 3/5 wing length, continuing toward base and costa obliquely for very short distance before turning obliquely in opposite direction, connecting to costal margin at about 3/5; subterminal line generally concolorous with median line, with smaller dark brown spots, following path of median line from dorsal margin to about middle of wing, thereafter making six short turns in opposite directions before reaching costa; with thin chestnut brown longitudinal lines in middle of cell and along cubital fold; with rather extensive greyish brown scaling especially along base of costa and more or less forming longitudinal bands in cell; with interrupted transverse band of shining greyish brown scales along external margin of subterminal line; with strongly contrasted brown and beige tricolored scaling especially toward apex between subterminal line and outer margin; with thin line of dark brown on outer margin between apex and cubital fold interrupted by dark brown spots between apex of veins; shorter scales of fringe tricolored greyish brown and white, shining, longer scales mostly pale chestnut brown with paler base and apex. Hindwing brown to greyish brown with scales bicolored, whitish at their base; fringe almost uniformly pale whitish beige, with shorter scales only slightly tinged greyish brown or with shorter scales more distinctly greyish brown with paler base.

Male genitalia (n=2) (Figs. 6–8). Uncus of medium length, about 3/4 dorsal length of tegumen, bulky, without median crest, slightly concave for whole length, with abundant setation of medium length from base almost to apex, apically pointed. Gnathos with narrow arms and thin apical section, altogether slightly shorter than uncus, apex poorly sclerotized and slightly bent downward. Tegumen dorsal margin slightly concave; dorsal connection long, 2/3 total length of tegumen; with arms of medium width; ventral con-

nection wide, about 1/3 length of dorsal connection. Costal process of valva a large concave plate with ventral margin forming spinose, straight, and narrow projection directed caudad, with dorsal margin rounded and bulging, with setae of short to medium length, with thick cover of short spines on dorsal bulge; cucullus rather wide at base, narrowing to



FIGURES 6–8. Male genitalia of *Neodactria daemonis*, holotype; 6, tegumen + uncus + gnathos in side view; 7, rest of genitalia except aedeagus in dorsal view; 8, aedeagus in side view. Both scale bars = 0.5 mm.

about 2/5 basal width, slightly curving upward, with setation mostly short, apically rounded; sacculus almost undifferentiated, forming a small rounded bulge with setation of short to medium length. Vinculum with arms of medium width; without distinct saccus. Juxta about 1/4 wider than long. Pseudosaccus lozenge-shaped, with anterior end rounded, without median crest. Aedeagus narrow, virtually straight in lateral view; with unadorned and short coecum penis; subapically without sclerotization of membrane or lateral projections of lateral margins; dorsally open apical section trough-like, i.e. with high lateral margins and closed apically; apex narrowly rounded.

Female genitalia (n=2) (Fig. 9). Papillae anales with setae of short to medium length, slightly longer laterally, distinctly scobinate. Posterior apophyses narrow, straight, with slight bulge near base. Anterior apophyses about 1/2 length of posterior apophyses, more or less narrow, apically bent or not. Sterigma a projection formed by pair of lateral sclerotized plates unconnected ventrally and adorned with short to long scales of medium width, with mediodorsal depression associated with internal carina, also associated with pair of small laterodorsal depressions on each side, and with pair of short bar-shaped sclerotized ornaments set longitudinally and side by side medioventrally at base. Ductus bursae of medium girth, with short, bulbous, and sclerotized enlargement before posterior end, only slightly enlarging to corpus bursae, with slight curve to the left, with longitudinal ridges on posterior half, without surrounding membranous pouch toward posterior end. Ductus seminalis opening in enlargement of posterior end. Corpus bursae about 3X largest width of ductus bursae and a little shorter that 1/2 its length, oval-shaped.

Distribution. This species is known only from Devil's Den State Park, situated at the bottom of a steep valley in the Boston Mountains of northwest Arkansas (Washington County), and Roaring River State Park, Barry County, Missouri. Both localities fall on the western edge of the Ozark Plateau and have isolated and scattered prairie and scrub oak habitats.

Biology. Unknown.

Etymology. The name refers to the type locality. "Theories abound on the naming of Devil's Den State Park. Was it for the notorious outlaws who, according to legend, hid out in this cool valley during hot Arkansas summers? Or was it for the abundance of bats and caves, which evoke a sinister image of the Devil's own playground? My bet is the epithet derived from stagecoach drivers in the mid-1800s, who probably cursed the place like Hades itself after navigating the rocky ridges on the Butterfield Overland Stage Route." (From: www.backpacker.com/destinations/article/0,3772,683,00.html).

Remarks. Unlike other species of the genus, the dorsally open apical section of the aedeagus has higher lateral margins and the apex is closed and rounded; in other species the lateral margins are lower and not joining apically to close the dorsally opened section.

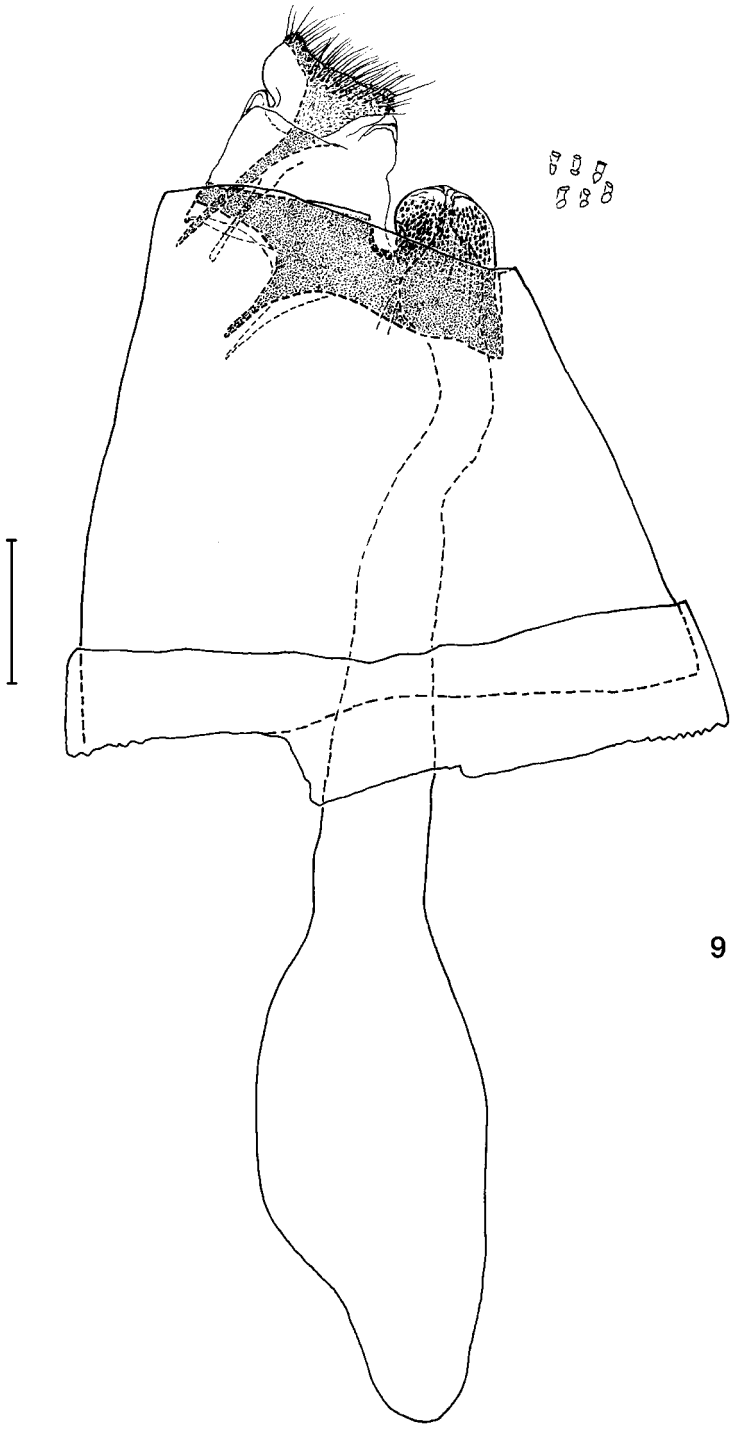


FIGURE 9. Female genitalia of *Neodactria daemonis* in lateral view with scale sockets of projecting sterigma enlarged in upper right side, slide A.B. Klots 31 Dec. 1968 # 4, scale bar = 0.5 mm.

Acknowledgments

We thank G. J. Balogh (Portage, Michigan), F. H. Rindge (American Museum of Natural History, New York, New York, U.S.A. (AMNH)), and M. A. Solis (USNM) for the loan of material in their care. We are also grateful to A. Smetana (CNC) for commenting on our choices of new species names, to F. H. Rindge and E. L. Quinter (AMNH) for access to A. B. Klots' files, to C. Ratton (MHNG) for the photographs, and to Florence Marteau (MHNG) for scanning the illustrations and producing the plates. Collections were made in the Black Belt of Mississippi with support from Mississippi Agricultural and Forestry Experiment Station project MIS-6538 and NSF grants BSR–9024810 and DEB–9200856. Collections at Devil's Den, Arkansas were supported in part by a visiting specialist grant from the Department of Entomology, University of Arkansas to R. W. Hodges.

Literature cited

Brown, R.L. (2003) Paleoenvironment and biogeography of the Mississippi Black Belt – Evidence from insects. *In*: Peacock, E. & Schauwecker, T. (Eds.), *Blackland Prairies of the Gulf Coastal Plain - Nature, Culture, and Sustainability.* University of Alabama Press, Tuscaloosa and London, pp. 11-26.

Landry, B. (1995) A phylogenetic analysis of the major lineages of the Crambinae and of the genera of Crambini of North America (Lepidoptera: Pyralidae). *Memoirs on Entomology, International*, 1, 1–245.

Landry, B. & Metzler, E.H. (2002) A new species of *Neodactria* Landry (Lepidoptera: Pyralidae, Crambinae) from the middle United States. *Fabreries*, 27, 47–57.

Landry, J.-F. (1994) Two new species of metallic-green *Coleophora* Hübner (Lepidoptera: Coleophoridae) from the Nearctic region, and first records of *C. mayrella* (Hübner) from South America. *The Canadian Entomologist*, 126, 1185–1191.

Leidolf, A. & McDaniel, S. (1998) A floristic study of black prairie plant communities at Sixteen Section Prairie, Oktibbeha County, Mississippi. *Castanea*, 63, 51–62.

Metzler, E.H. (1998) Presidential address 1997: a new species of *Lithophane* (Noctuidae) from the midwestern United States, dedicated to the purpose of The Lepidopterists' Society. *Journal of the Lepidopterists' Society*, 52, 1–8.

Metzler, E.H. (2000) Two new species of Cochylini (Lepidoptera: Tortricidae: Tortricinae) from eastern United States. *Great Lakes Entomologist*, 32, 185–197.

Metzler, E.H. & Adamski, D. (2002) A new species of *Gnorimoschema* Busck, 1900 (Lepidoptera: Gelechiidae, Gelechiinae) from Ohio and Illinois. *Fabreries*, 27, 59–68.

Metzler, E. H. & Sabourin, M. (2002) A new species of *Spinipogon* Razowski, 1967 from two remnants prairies in Ohio (Lepidoptera: Tortricidae, Cochylini). *Fabreries*, 27, 69–76.

Schiefer, T.L. (1998) Disjunct distribution of Cerambycidae (Coleoptera) in the Black Belt Prairie and Jackson Prairie in Mississippi and Alabama. *Coleopterists Bulletin*, 52, 278–284.

Wagner, D.L. (1992) Obituaries. Alexander Barrett Klots (1903-1989). *Journal of the Lepidopterists' Society*, 46, 314–324.

Wiygul, S., Krans, K., Brown, R. & Maddox, V. (2003) Restoration of a prairie remnant in the Black Belt of Mississippi. *In*: Peacock, E. & Schauwecker, T. (Eds.), *Blackland Prairies of the Gulf Coastal Plain - Nature, Culture, and Sustainability.* University of Alabama Press, Tuscaloosa and London, pp. 254–261.

Wright, D.J., Brown, R.L. & Gibson, L.D. (1997) A new species of *Phaneta*, with taxonomic diagnoses and seasonal and geographical data on four related species (Tortricidae). *Journal of the Lepidopterists' Society*, 51, 119–127.

