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FIVE NEW SPECIES OF THE TRIBE EUCOSMINI (TORTRICIDAE)

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ABSTRACT. *Phaneta mayelisana, Phaneta verecundana, Eucosma atascosana, Eucosma guttulana* and *Eucosma diabolana* are described. Imagines, male and female genitalia, and wing venations are represented.

Phaneta mayelisana A. Blanchard, **new species**

Figs. 1, 6, 11, 17

Head. Palpi exceeding head by about an eye diameter, white except on pale brownish gray outer side of second segment, which bears on its underside a tuft of long white scales exceeding and almost hiding downturned, white third segment. Front and vertex white. **Antennae** simple, white; pubescence in male not exceeding the scales, still shorter in female. **Thorax:** Patagia and mesonotum white, tegulae white, spotted with pale brownish gray in their middle. Abdomen whitish.

Maculation (as in Fig. 1). Fasciae white; ground color of both wings a brownish gray hue of variable saturation. Fringe of forewing white basally, peppered outwardly with brownish gray. Fringe of hindwing white.

Venation (as in Fig. 17). This insect shares with *Eucosma cataclystiana* (Walker) the unusual character that veins M_3 and Cu_1 of the forewing fuse about midway between cell and termen.

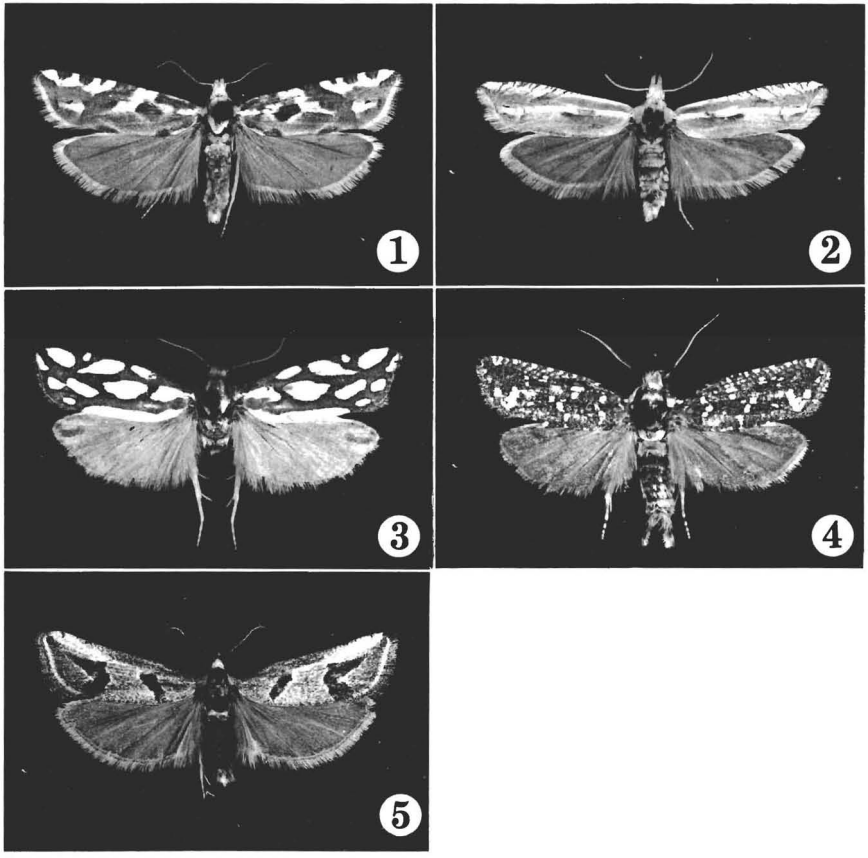
Hindwing: Rs and M_1 approximate toward base; M_3 and Cu_1 united.

Length of forewing. Males, 10.2–12.2 mm, mean = 11.1 mm; females, 11.5 mm (single specimen).

Male genitalia (Fig. 6). Figured from slide A.B. 4322, paratype from Canadian, Hemphill Co., Texas, 2.VI.70.

Female genitalia (Fig. 11). Slide A.B. 4319, paratype from Paducah, Cottle Co., Texas, 17.IV.68. The signa and the sclerotization of the ductus bursae are obscured because the genitalia took more than the optimum amount of chlorazol black. Two signa, the smaller signum more ventral. Ductus bursae with sclerotized band with a length about one and one-half times its diameter, separated from ostium by a short membranous section. Ductus seminalis attached ventrally at middle of sclerotized band. Lamella postvaginalis semicircular and well sclerotized.

Holotype. ♂, Matador Wildlife Management Area near Paducah, Cottle Co., Texas, 17.IV.68, collected by A. & M. E. Blanchard, deposited in the National Museum of Natural History (type No. 75817).



FIGS. 1–5. Holotypes: 1, *Phaneta mayelisana*; 2, *P. verecundana*; 3, *Eucosma atascosana*; 4, *E. guttulana*; 5, *E. diabolana*.

Paratypes. Same location, same date as the holotype, 6 ♂, 1 ♀. Gene Howe Wildlife Management Area near Canadian, Hemphill Co., Texas, 13.IV.69, ♂; 14.IV.69, ♂; 29.V.70, ♂; 2.VI.70, 2 ♂; all collected by A. & M. E. Blanchard.

Also in the National Museum are three specimens of this species: one collected by F. H. Snow in Clark Co. Kansas, June, 1962 (No. 146); one from Denver, Colorado (No. 187), no date; one from Colorado (No. 523), no date. They are included here for distribution record, but I do not make them paratypes because they are in rather poor condition.

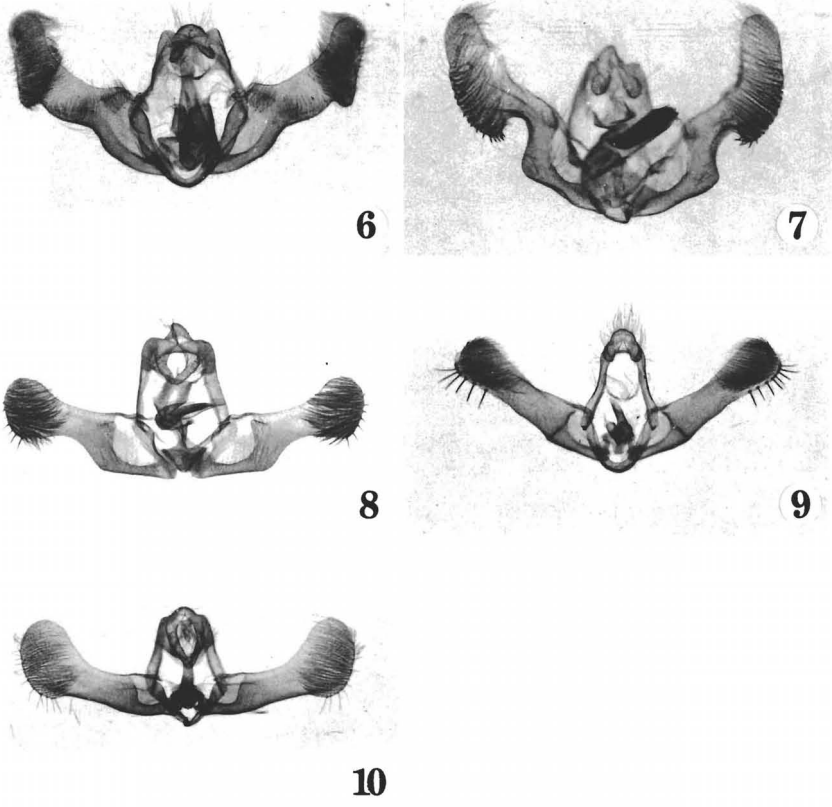
Dr. J. F. Gates Clarke who has examined some of the paratypes comments: "In pattern this is much like *columbiana,* but is a much larger insect."

I take great pleasure in naming this pretty insect for my beloved wife who collected it with me.

Phaneta verecundana A. Blanchard, **new species**

Figs. 2, 7, 12, 18

Head. Palpi projecting the length of the head beyond front, much compressed, white with a faint grayish spot on outer side of second segment and a grayish shading



FIGS. 6–10. Male genitalia: 6, *Phaneta mayelisana*; 7, *P. verecundana*; 8, *Eucosma atascosana*; 9, *E. guttulana*; 10, *E. diabolana*.

toward end of tuft scales underneath second segment; third segment hidden by tuft. Face and vertex white. **Antennae** white, shortly pubescent in male. **Thorax:** Patagia white; tegulae white to faintly ochreous, mesonotum white. **Forewing** with arched costa, termen oblique, concave between veins R_s and Cu_1

Maculation (as in Fig. 2). Forewing white with markings pale ochreous in males but generally somewhat darker in females. Hindwing whitish to pale gray.

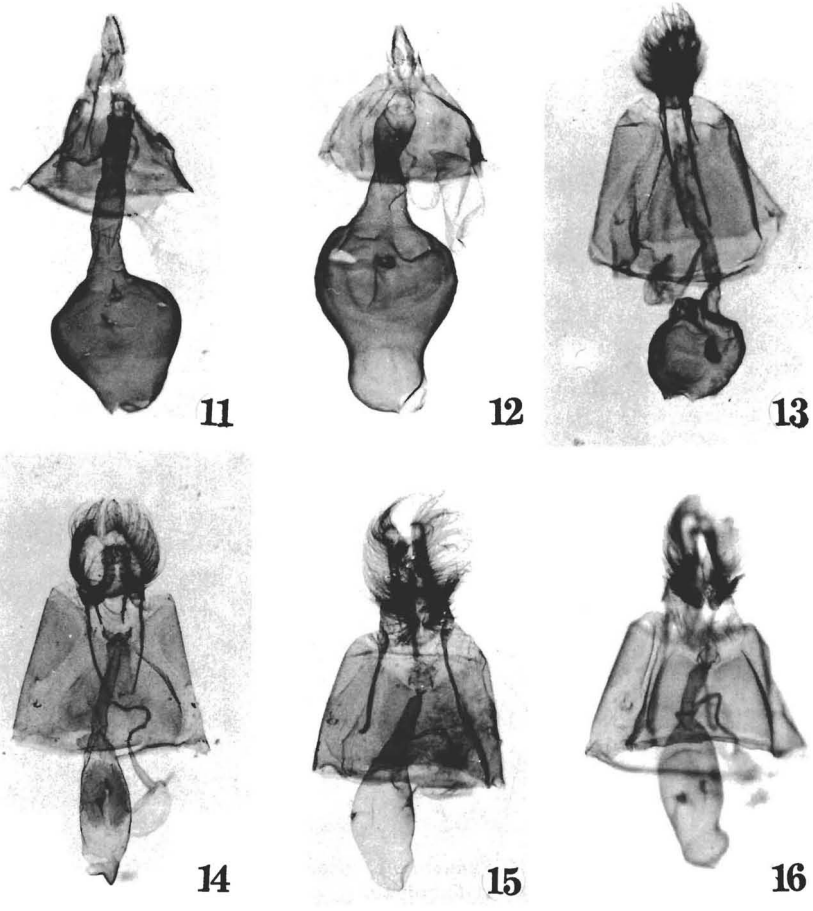
Venation (Fig. 18). Veins R_s and M_1 of hindwing very closely approximate toward base; veins M_3 and Cu_1 united.

Length of forewing. Males 7–9 mm, mean = 8 mm; females 7.3–8 mm, mean = 7.6 mm.

Male genitalia (Fig. 7). Slide A.B. 4340, paratype from Canadian, Texas, 13.VIII.71.

Female genitalia (Fig. 12). Slide A.B. 4341, paratype from Canadian, Texas, 28.V.70. Corpus bursae membranous, two signa present; ductus bursae with some sclerotization around it near ostium.

Holotype. ♂, Gene Howe Wildlife Management Area near Canadian, Hemphill Co., Texas, 15.VIII.71, collected by A. & M. E. Blanchard, deposited in the National Museum of Natural History (No. 75818).



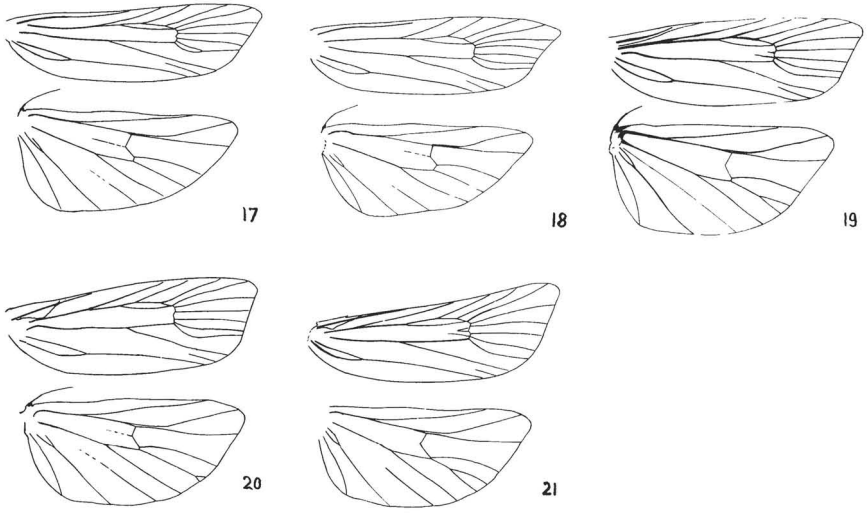
FIGS. 11–16. Female genitalia: 11, *Phaneta mayelisana*; 12, *P. verecundana*; 13, *Eucosma atascosana*; 14, *E. guttulana*; 15, *E. diabolana*; 16, *E. graziella*.

Paratypes. Same location as holotype, 28.V.70, ♂, 4 ♀; 13.VIII.71, 4 ♂. Matador Wildlife Management Area, near Paducah, Cottle Co., Texas 4.VI.70, ♂; all collected by A. & M. E. Blanchard. Dr. J. F. Gates Clarke who examined two of my dissected paratypes commented as follows: "Very similar to *indagatricana*, but in (*verecundana*) the costal strigulae of the forewing are confined to the outer half of the costa, in *indagatricana* they go nearly to the base of the costa. The genitalia also differ: in the male the neck of the harpe (valve) is much narrower and the excavation of the ventral edge of the harpe is much deeper in (*verecundana*) than in *indagatricana*; also in the female of (*verecundana*) the postvaginalis is not sclerotized but is in *indagatricana*."

Eucosma atascosana A. Blanchard, **new species**

Figs. 3, 8, 13, 19

Head light ochreous; palpi exceeding front by an eye diameter; tuft on underside of second segment externally ochreous, slightly compressed, loosely scaled, concealing



FIGS. 17–21. Venations: 17, *Phaneta mayelisana*; 18, *P. verecundana*; 19, *Eucosma atascosana*; 20, *E. guttulana*; 21, *E. diabolana*.

third segment. **Antennae** slightly compressed laterally, finely ciliate in male, light ochreous. **Thorax:** Tegulae and anteromedial mesonotum ochreous brown; posterior tuft white. **Abdomen:** whitish ochreous.

Maculation (as in Fig. 3). Forewing: rich yellowish brown, a little paler in the fold, with silvery white spots showing negligible variation in all specimens before me. All white spots, except the elongate one along the dorsum and the one near the costal fold, surrounded by line of dark brown scales; fringe pale ochreous with a darker line near base; male costal fold extending to about one fourth of the costa. Hindwing: pale ochreous with concolorous fringe.

Length of forewing. Males 11.5–13.0, average 12.5 mm; females 11.0–14.0, average 12.0 mm.

Venation (Fig. 19).

Male genitalia (Fig. 8). Slide A.B. 4489, paratype from Laguna Atascosa, Cameron Co., Texas, 22.XI.73.

Female genitalia (Fig. 13). Slide A.B. 4459, paratype from Laguna Atascosa, Cameron Co., Texas, 22.X.73. Corpus bursae and ductus bursae membranous; two large signa; lamella postvaginalis about one and one half times as long as broad, lightly sclerotized, with long setae.

Holotype. ♂, Laguna Atascosa National Wildlife Refuge, Cameron Co., Texas, 22.XI.73, genitalia on slide A.B. 4313, deposited in the National Museum of Natural History (No. 75821); collected by A. & M. E. Blanchard.

Paratypes. Welder Wildlife Refuge near Sinton, San Patricio Co., Texas, 28.X.64, ♂; 12.XI.65, ♂; 13.XI.65, ♀. Voshell Wildlife Management Area, near Brownsville, Cameron Co., Texas, 12.XI.68, ♂; 5.XI.69, 6 ♀; 9.XI.69, ♀; 26.X.70, ♂. Laguna Atascosa Wildlife Refuge, Cameron Co., Texas, 19.XI.73, ♂; 22.XI.73, 4 ♂, 7 ♀; collected by A. & M. E. Blanchard.

This insect is close to *Eucosma sandiego* Kearfott, as shown by their male genitalia and maculation. Dr. J. F. Gates Clarke who compared some of my specimens to the *sandiego* specimens in the National Museum commented: "Generally the spots of your species are larger and more rounded than in *sandiego* and the three subterminal spots of your species are larger and more distinct than those in *sandiego*. The neck of the harpe of your species is narrower than that of *sandiego*."

Eucosma guttulana A. Blanchard, **new species**

Figs. 4, 9, 14, 20

Head. Palpi exceeding front by half eye diameter; second segment white medially, whitish above; external side and shaggy brush of long scales on underside tawny; third segment smoothly scaled, downturned, tawny. Front and vertex white, spotted with tawny. **Antennae** simple, tawny; pubescence in male barely exceeding the scales. **Thorax:** mesonotum tawny with white anterior band and white posterior tuft. Tegulae tawny with white tip. **Abdomen** pale ochreous above, paler beneath.

Maculation (as in Fig. 4). Forewing: ground color varying from ochreous to tawny or even dark brown; spots white, except the three larger faintly ochreous ones forming an ill-defined ocelloid patch. Fringe white, basally speckled with ground color. Hindwing: slightly paler than ground color of forewing; fringe whitish, basally darker.

Venation (Fig. 20). Hindwing veins R_s and M_1 approximate toward base; veins M_3 and Cu_1 fused almost to termen.

Length of forewing. Males 7.5–12.0, mean = 9.5 mm; females 9.0–11.0, mean = 10.3 mm.

Male genitalia (Fig. 9). Slide A.B. 3597, paratype from Padre Island, Nueces Co., Texas, 9.IX.74.

Female genitalia (Fig. 14). Slide A.B. 4460, paratype from South Padre Island, Cameron Co., Texas, 30.III.78. Papillae anales large, with a blunt ventral process turning caudodorsally. Lamella antevaginalis heavily sclerotized; lamella postvaginalis broader, crescent shaped, weakly sclerotized; ductus bursae slightly sclerotized between junction with ductus seminalis and ostium, but not immediately cephalad of ostium. Corpus bursae with a wide slightly sclerotized medial band that includes ventral and dorsal signa.

Holotype. ♂, Padre Island National Seashore, Kleberg Co., Texas, 19.VII.76, collected by A. & M. E. Blanchard, deposited in the National Museum of Natural History (No. 75819).

Paratypes. All from Texas: Engeling Wildlife Management Area near Tennessee Colony, Anderson Co., 30.IV.66, 2 ♂; 6.IX.66, ♂. Camp Strake near Conroe, Montgomery Co., 27.IV.67, ♂; 22.IV.69, ♂. Matador Wildlife Management Area, near Paducah, Cottle Co., 8.VIII.68, 6 ♂, 3 ♀. Gene Howe Wildlife Management Area, near Canadian, Hemphill Co., 28.V.70, ♂. Welder Wildlife Refuge, near Sinton, San Patricio Co., 30.VI.75, ♂, ♀. North Padre Island, Nueces Co., 9.IX.74, 5 ♂, ♀; 19.IX.74, 2 ♀; 12.III.75, ♂; 30.IX.75, 2 ♂, ♀; 17.VIII.76, 2 ♂; 19.VI.77, 4 ♂; 21.VI.77, ♂; 6.IV.78, 5 ♂, 2 ♀. Padre Island National Seashore, Kleberg Co., 2.X.75, ♂, ♀; 17.V.76, 2 ♂, 2 ♀; 19.V.76, ♀; 19.VII.76, ♂. South Padre Island, Cameron Co., 1.III.78, ♂; 30.III.78, 21 ♂, 3 ♀. Attwater Prairie Chicken National Wildlife Refuge near Eagle Lake, Colorado Co., 27.IV.78, 2 ♂; collected by A. & M. E. Blanchard.

Remarks. This species is closely related to *Eucosma robinsonana* Grote as shown by the genitalia of both sexes and the wing venation, but the maculation is very different and it is a much bigger insect.

I have this insect only from eastern and southern Texas and from the Panhandle of Texas: none from the wide intervening territory. The specimens from the Panhandle are generally lighter in color (ochreous instead of tawny or brown) than those from the East and South, but this appears to be no more than a color variation.

Eucosma diabolana A. Blanchard, **new species**

Figs. 5, 10, 15, 21

Head. Palpi exceeding front by half an eye diameter; second segment white anteriroly and medially, outer side pale brownish; underside with tuft of very long, dark brownish scales greatly exceeding the smoothly scaled, downturned, half hidden third segment. Front and vertex whitish. **Antennae** fasciculate in male, shortly pubescent in female. **Thorax:** mesonotum and tegulae ochreous.

Maculation (as in Fig. 5). Forewing: from where the background is palest, near

apex, to the dark fasciae, the color is of about the same hue, varying only in saturation; that is from a very pale ochreous near apex to a rich brown with an orange tinge in the two large fasciae and near base along costa. Most wing scales and all the fringe scales are white tipped. Hindwing: concolorous with the parts of the forewing with average saturation only a little grayer.

Venation (Fig. 21). Hindwing: R_s and M_1 approximate toward base, M_2 connate with stalk of M_3 and Cu_1.

Length of forewing. Males 10.3–18.0, mean = 13.6 mm; females (three specimens): 12.0, 12.7, 13.4 mm.

Male genitalia (Fig. 10). Slide A.B. 1233, paratype from Mt. Locke, Davis Mts., 26.III.68.

Female genitalia (Fig. 15). Slide A.B. 4443, paratype from Sierra Diablo, 20.V.68. Lamella antevaginalis a narrow sclerotized lip; lamella postvaginalis subquadrangular with setae; ductus bursae membranous with narrow constriction near ostium. Corpus bursae membranous with two minute signa.

Holotype. ♂, Sierra Diablo Wildlife Management Area, 6,000 ft, Culberson Co., Texas, 31.III.70, collected by A. & M. E. Blanchard, deposited in the National Museum of Natural History (No. 75820).

Paratypes. Davis Mts., Mt. Locke, 6,500 ft, Jeff Davis Co., Texas, 26.III.68, ♂; Sierra Diablo Wildlife Management Area, 6,000 ft, Culberson Co., Texas, 20.V.68, 5 ♂, ♀; 29.III.70, ♂; 31.III.70, 6 ♂, ♀; 3.IV.70, ♂; 27.V.73, 8 ♂, ♀; 29.V.73, 2 ♂; 30.V.73, 2 ♂, collected by A. & M. E. Blanchard.

Remarks. "The smaller specimens (of *E. diabolana*) remind one of *mirosignata* Heinrich, but your species is distinct and presumably undescribed" (Dr. J. F. Gates Clarke, in litt.). The genitalia, male as well as female, are also very different.

Eucosma graziella A. Blanchard

Fig. 16

Remarks. This species was previously described (Blanchard, 1968) but the female genitalia had not been studied. Fig. 16 is drawn from slide A.B. 4446, the genitalia of a female taken in the Chihuahua Desert, near Nugent Mt. at Big Bend National Park, Texas, 3.X.67. The ventral and lateral parts of the sterigma loosely surround the small ostial chamber; its dorsal part extends caudad as a subquadrate lamella postvaginalis. There is some slight sclerotization of the corpus bursae mediodorsally near the dorsal signum.

ACKNOWLEDGMENT

I am deeply grateful to Dr. J. F. Gates Clarke for examining critically much of my material and comparing it with the material in the National Museum. Without his unstinted help this article would not have been possible. I also want to thank Mr. Fletcher of the BM(NH) for helping me in the same manner.

LITERATURE CITED

BLANCHARD, A., 1968. New moths from Texas (Noctuidae, Tortricidae). J. Lepid. Soc. 22: 143.