

Acknowledgments

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OBSERVATIONS ON SOME PHYCITINAE (PYRALIDAE) OF TEXAS WITH DESCRIPTIONS OF TWO NEW SPECIES

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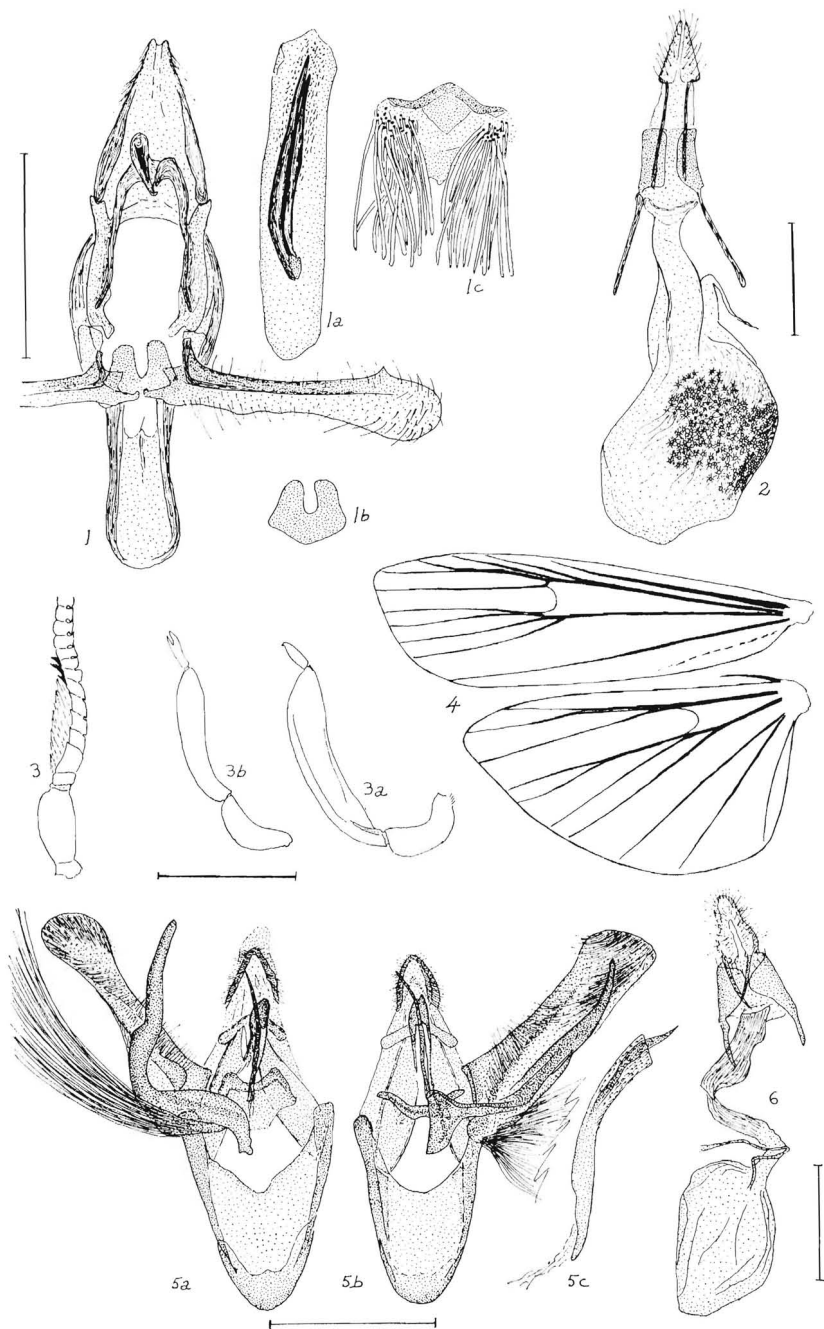
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The latest revision of the Phycitinae is that of Heinrich (1956). It includes a description and figures of genitalia of every New World species known at the time of its publication. It makes it possible, for anyone who can dissect genitalia, to identify a very large proportion of his captures and to call for expert advice in difficult cases only.

In trying to classify my Phycitinae I have been puzzled by several species which do not appear to be included in Heinrich's monograph. For all of these, except two, I have only one specimen or specimens of only one sex. These will have to wait a little longer. This paper offers a description of the two new species of which I have males and females; it also includes an annotated list of some species which Heinrich had not seen from Texas or even from the United States.

Zamagiria kendalli A. Blanchard, **new species**

Male: Tongue well developed. Antennae brown, shortly ciliate, a deep sinus at base of shaft, fringed with heavy scale tufts, bearing on each of the three upper segments a claw-like, well-sclerotized process (Fig. 3). Head slightly depressed between antennae and in upper part of front. Labial palpi recurved ascending, first segment whitish, second segment sprinkled with brown scales, very long, broadly dilated and hollowed within to hold maxillary palpi, third segment minute (Fig. 3a). Maxillary palpi in the form of large aigrettes. Head, collar and disc of thorax dark



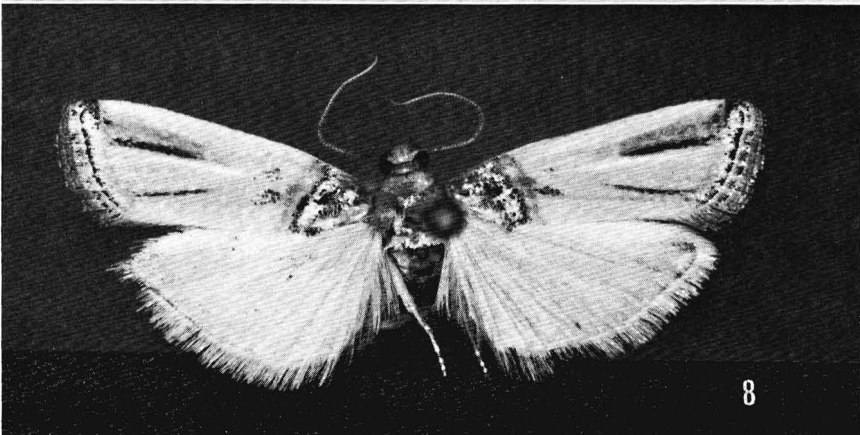
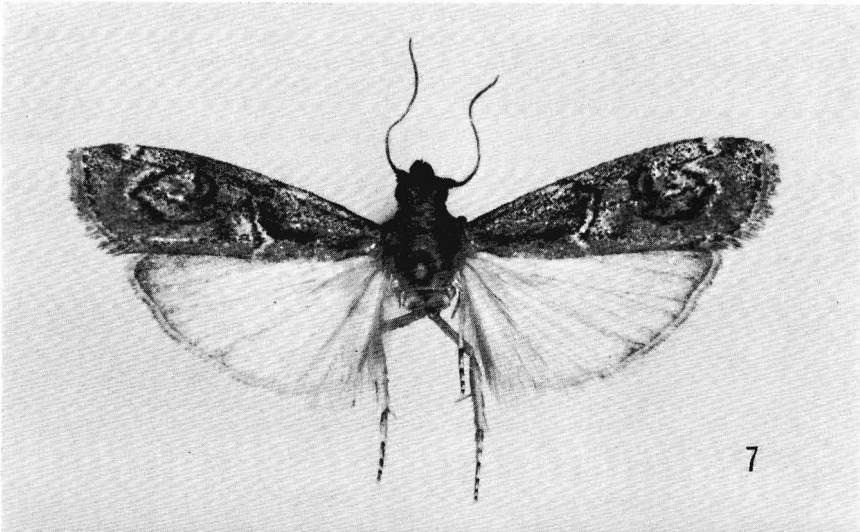


Fig. 7. *Zamagiria kendalli*, holotype.

Fig. 8. *Dasypygia salmicolor*, holotype.

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Figs. 1 to 4. *Zamagiria kendalli*. 1, Male genitalia, aedeagus omitted; 1a, aedeagus; 1b, transtilla; 1c, tufts of eighth abdominal segment; 2, female genitalia; 3, part of male antenna; 3a, denuded male labial palp; 3b, denuded female palp; 4, venation (female wings).

Figs. 5 to 6. *Dasypygia salmicolor*. 5a, Male genitalia moderately expanded, aedeagus omitted; 5b, male genitalia fully expanded, aedeagus omitted; 5c, aedeagus; 6, female genitalia.

(Scale shown on all figures is one millimeter except for 1c and 4.)

brownish gray; patagiae darker; abdomen above lighter. Underside of thorax, abdomen and legs grayish white. *Primary* (Fig. 7) with ground color pale bluish gray, heavily dusted, mostly between radial vein and inner margin, with brownish to reddish and a few black scales. T.a. line well defined only between radial and anal veins, bluish white; narrowly bordered distally by a black line bending basad, almost squarely, over the radial and running to costa; narrowly bordered basally by a black line meeting a broader, black basal dash on anal vein. *S.t. line* bluish white, best defined by its black inner border deeply and sharply indented opposite upper angle of cell and on Cu2; this last cusp bringing it below discocellular vein. A crescent shaped spot, with ground colored center, entirely outlined in black at the end of cell, the more basad arc of the crescent contour lying directly over discocellular vein. Black, intervenular, almost confluent, terminal dots. Fringe light brownish gray. *Secondary* grayish white, slightly darker at apex and along termen. Fringe light gray; the shorter scales, being dark tipped, produce a median blackish line. *Undersurface of primary* almost uniformly brown, basal half of costa darker. *Secondary* iridescent grayish white, brown between costa and radial vein and near apex.

Female: Similar to male except for the following: antennae simple pubescent, labial palpi (Fig. 3b) not hollowed out, ascending but not exactly applied against front, maxillary palpi minute, filiform.

Venation: As shown in Fig. 4.

Expanse: 20 to 24 millimeters.

Male genitalia: As represented by Fig. 1, 1a, 1b. Uncus broadly triangulate. Gnathos elongate, arising well down from ventrolateral projections of tegumen, terminating in a spatulate, hollow hook. Transtilla absent. Aedeagus stout. Penis armed with one or two strong cornuti. Eighth abdominal segment with ventral tuft as shown in Fig. 1c.

Female genitalia: As shown in Fig. 2.

Of all the genera included in Heinrich's monograph, *Zamagiria* appears to accommodate *kendalli* best: the venation, labial and maxillary palpi, male antennae, as well as the male and female genitalia indicate a close relationship. The head, however, in the upper part of the front and between the antennae, is somewhat depressed rather than deeply grooved, and the "appressed, matted tuft of long scales arising from the upper edge of the frons" is missing. Although the male genitalia differ markedly from all those figured by Heinrich (which, as he remarks, exhibit striking, structural, specific differences among themselves) they agree quite well in general characters. The combination of elaborate wing masculation and genitalia differentiate this species very definitely from all previously described taxa.

Food plant: On 7 July 1969 in Musquiz Canyon (Tex. Hwy 118) N.W. of Alpine, Texas, Roy and Connie Kendall found several larvae, sheltered inside folded or rolled portions of leaves of *Croton fruticosus* (Engelm.). They reared three with the following results: pupated 10 July (1), ♀ emerged 23 July; pupated 12 July (1), ♂ emerged 23 July; pupated 18 July (1), ♀ emerged 28 July.

I have these three specimens before me; as they are definitely conspecific with those taken in our light traps, they are labeled paratypes.

It gives me pleasure to name the new species for our dear friends, who have discovered the life histories of many Texas species of Lepidoptera, and with whom we have enjoyed many fruitful and pleasant field trips.

Type material: Holotype male, Fort Davis, Hospital Canyon, behind historical fort (Jeff. Davis Co.), Texas, 5000', 11 July 1969 (genitalia on slide A.B. 2050); deposited in the U.S. National Museum (No. 71004).

Eighteen paratypes, including the three listed above in the Kendall collection: Fort Davis, 1 ♂, 3 ♀, 24 Aug. 1967; 1 ♂, 1 ♀, 11 June 1969; 3 ♂, 5 ♀, 11 July 1969; Guadalupe Mts., Bear Canyon, 5700', Culberson Co., Texas, 1 ♂, 4 Sept. 1969.

***Dasypyga salmocolor* A. Blanchard, new species**

Head covered with ochreous salmon scales, paler and thinner on front than on vertex, with a transverse parting line behind antennae. Tongue well developed. Antenna weakly pubescent. Labial palpus upcurved, not quite reaching vertex, very slightly longer in female than in male; third segment a trifle longer than second, acuminate. Maxillary palpus small, squamous. *Thorax* with collar, disc of thorax, and patagiae concolorous with vertex. Legs closely scaled, varied with bright ochreous salmon, purplish black, and whitish. *Abdomen* pale ochreous salmon; with some blackish scales on the more basad segments beneath. *Upper surface of primary* (Fig. 8) ochreous salmon. T.a. line pale purplish gray, starting on costa one fifth distance from base to apex, nearly straight to inner margin, and reaching latter one fourth distance from base to anal angle; rather wide, and narrowly bordered on both sides by sprinkling of darker scales. A small patch of black, coarse, raised scales in submedian fold on inner side of t.a. line. Basal area soiled in places with purplish scales, some of them slightly raised. On male specimens, ground color somewhat darker along outer border of t.a. line, on a width about equal to width of t.a. line itself. S.t. line absent, but along termen a border about same width and color as t.a. line, continuing in a rather wide, concolorous fringe. No discal dots. In cell M_1 a fine red line running nearly to outer dark border, and thence angling sharply to apex. A similar red line on lower fold in outer area. *Secondary* pale, shining, smoky fuscous; somewhat darker along outer margin and toward apex. Fringe very pale smoky fuscous, with a fine dark line consisting of the tips of the shortest scales. *Undersurface of primary* almost uniform ochreous. *Secondary* almost uniform paler ochreous.

Expanse: 19–20 mm.

Male genitalia: As represented by Figs. 5a, 5b, 5c. Fig. 5a showing those of the type prepared with moderate expansion; Fig. 5b showing those of another specimen fully expanded to reveal inner face of valve; 5c showing aedeagus of same specimen.

Female genitalia: As represented by Fig. 6.

Type material: Holotype male, Sierra Diablo Wildlife Management Area, 6000', Culberson Co., Texas, 1 September 1969 (genitalia on slide A.B. 2079); deposited in the U.S. National Museum (No. 71005).

Five paratypes, all from same locality: one male, 6 June 1969; two males 8 June 1969; one male 14 July 1969; one female 1 September 1969 (genitalia on slide A.B. 2080).

Dasypyga salmocolor is extremely close to *D. alternosquamella*, Ragonot. It can be distinguished from the latter by its much reduced dark basal area, extending definitely less than a fourth, instead of almost one half, the length of the wing. The male genitalia also show the close relation between the two species, but the shape of the free arm of the sacculus is quite different.

Other Interesting Records

I will now list some Phycitinae which Heinrich did not see from Texas or in some cases even from the United States, which my wife and I have collected in our effort to prepare a catalogue of the moths of Texas.

Acrobasis kearfottella Dyar: Tennessee Colony (Anderson Co.), Conroe (Montgomery Co.), Huntsville State Park (Walker Co.), end of May. These records extend the distribution indicated by Heinrich more than five hundred miles.

Acrobasis stigmella Dyar: Tennessee Colony (Anderson Co.) end of May. An extension of range of over five hundred miles.

Bertelia grisella Barnes & McDunnough: My identification of this insect has been delayed a long time by what I think is a poor representation of the transtilla in Heinrich's Fig. 187. I have a series caught at Shafter (Presidio Co.) and a few specimens from the Guadalupe Mts. (Culberson Co.), all taken in October.

Myelopsis alatella (Hulst): Seen only once, but was abundant, at Belton Reservoir (Bell Co.), 6 April 1970. Nearest locality indicated by Heinrich: Pecos, New Mexico.

Fundella ignobilis Heinrich: I have only one female specimen. The female genitalia leave no doubt about its identity. It was caught five miles southeast of Mt. Livermore in Jeff Davis Co. This is a new record for the U.S. It was previously taken in Central America.

Anadelosemia condigna Heinrich: Shafter (Presidio Co.), Big Bend National Park, Davis Mts. (Jeff. Davis Co.), October. Described from a dozen specimens caught in the Baboquivari Mts. of Arizona.

Zamagiria australella (Hulst): Two specimens only, from Santa Ana National Wildlife Refuge and from the Welder Wildlife Foundation, both taken in mid-November. The type in the U.S. Nat. Mus. is labeled Blanco, Texas but Heinrich suspected that it might be a Florida specimen. There does not seem to be any reason for this doubt any longer.

Ancylostomia stercorea (Zeller): Brownsville (Cameron Co.), mid-October, two males.

Pima albiplagiata Heinrich: Fort Davis (Jeff. Davis Co.), end of March, two males, one female.

Pima granitella (Ragonot): Fort Davis (Jeff. Davis Co.). Big Bend National Park (Brewster Co.), Mt. Locke in Davis Mts., end of March; Paducah (Cottle Co.) mid-April.

Quasisalebria admixta Heinrich: This is quite common in the Sierra Diablo Wildlife Management Area and in the Guadalupe Mts. (both in Culberson Co.) in June and September. Only one female was taken in Big Bend Nat. Park in October.

Actrix nyssaecolella (Dyar): Tennessee Colony (Anderson Co.) mid-April, one female.

Actrix dissimulatrix Heinrich: Huntsville State Park (Walker Co.), May, one female.

Dioryctria auranticella (Grote): Three specimens from near the top of Mt. Locke in the Davis Mts. early July.

Patriciola semicana Heinrich: Sierra Diablo Wildlife Management Area (Culberson Co.) end of September; Davis Mts. (Jeff. Davis Co.) early October.

Anderida sonorella (Ragonot) (?): Sierra Diablo Wildlife Management Area (Culberson Co.) early June and late September; Mt. Locke, Davis Mts. (Jeff. Davis Co.) September and October; Paducah (Cottle Co.) July. All my specimens have a sprinkling of rusty red scales along the inner margin of the primaries, which is not mentioned by Heinrich; yet their genitalia, male and female, agree with his figures.

Homoeosoma impressale Hulst: Fort Davis (Jeff. Davis Co.) May. Paducah (Cottle Co.) April.

Unadilla erronella (Zeller): Brownsville (Cameron Co.) November. Big Bend Nat. Park (Brewster Co.) October. A surprising record as Heinrich had it only from Central America and the Greater Antilles. Yet the female genitalia leave little doubt about the correctness of this identification.

Rhagea packardella (Ragonot): Not uncommon from June until September in my collecting places of West Texas.

Eremberga insignis Heinrich: Not uncommon at Big Bend Nat. Park in September and October but does not seem to reach even Fort Davis. A new U.S. record.

Acknowledgment

It is a pleasure to acknowledge with warm thanks the help given me by Dr. D. C. Ferguson of the Systematic Entomology Laboratory, U.S.D.A. in examining some of my specimens and revising part of this paper.

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there is ample food for a large and varied population of grass-feeders. I suspect that it is just a case of competition that has existed for many millenia and probably relates to refugia during the ice advances during the Pleistocene Epoch.

The European subregion is cut off from the tropical faunal regions by deserts and extraordinarily high mountains. This might be used as an explanation for the somewhat smaller European nymphalid array than is found in America north of Mexico. Here there is continuous land connection between the tropics and the temperate areas. The north-south pattern of American mountain ranges also may influence this difference. At first glance the Lycaenidae seem to deny such reasoning. When this family is looked at from the subfamily rank quite a different picture develops:

Subfamily	Western Europe		U. S. and Canada	
Theclinae	16	15.8%	80	60.2%
Gerydinae	0		1	0.7%
Lycaeninae	11	10.9%	16	12.0%
Plebejinae	74	73.3%	36	27.1%
	101	100.0%	133	100.0%

The dominance of Theclinae in the United States and Canada and the dominance of Plebejinae in western Europe make the species arrays of the two regions quite different. Continuity with the tropics, the stronghold of Theclinae, probably explains the large number of hairstreaks in our fauna. The very large number of blues in the European fauna may be real or it may be a figment of taxonomic philosophy in the two listings—Higgins & Riley vs. dos Passos. In turn, each of these is strongly influenced by recent regional taxonomic research. Stempffer and others in Europe are far ahead of anyone in North America in understanding of the Plebejinae. I have a strong suspicion that when parity of intelligence is reached for this subfamily the number of North America species will be increased. We have tended to turn to subspecies designation whereas the Europeans have demonstrated specific distinctions among taxa that are superficially much alike. Perhaps more than a little of our error has been blind acceptance of work published. We need much more to inquire critically before accepting the work of others.

Notice of occurrence in North America is included among the brief notes on range for the holarctic species found in western Europe. Such notice is made for 38 species. In four cases the relationship is not usually recognized in North America: *Pontia chlorodice beckeri* W. H. Edwards, *Pontia callidice occidentalis* Reakirt, *Euchloe ausonia ausonides* Boisduval and *Everes argiades comyntas* Godart. The last of these needs verification. Three species in the European fauna which we acknowledge in ours are not noted as such in Higgins & Riley. These are *Lycaeides argyrognomen* Bergsträsser, *Vacciniina optilete* Knoch and *Agriades glandon* de Prunner. I wrote to Higgins about these cases and he replied that in the case of the first two he had been unable to dissect North American specimens and therefore omitted reference to them. The omission of *glandon* was accidental. Higgins had collected material in Hall Valley, Colorado, when he visited me some years ago. At that time he remarked upon how close to *glandon* is *rustica*.

Although written primarily for the amateur collector in Europe this book will be found of value to collectors in North America. I recommend it highly to anyone who is interested in taxonomic studies, zoogeography and the biology of butterflies.

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CORRECTION

Vol. 24, no. 4, page 254, line 27: Under *Zamagiria australella* (Hulst) read "The type is in the American Mus. Nat. Hist." for "The type is in the U.S. Nat. Mus."

It seems safe to assume that when males of both species are on a given hilltop they court and fertilize females of their own species. If, however, a virgin female of one species hilltopped and found the summit occupied only by one or more males of the other species, interspecific courtship, copulation, and fertilization *might* then occur. There must certainly be many behavioral and environmental factors opposing this process, otherwise one might expect hybrids to be more common.

Field (1971) has removed *annabella* from the genus *Vanessa* and placed it in *Cynthia*. In view of the natural hybridization of *V. atalanta rubria* and *C. annabella*, it would seem that the validity of such a separation is doubtful. Until further studies of the hybrids can be made, including laboratory crosses and backcrosses, together with comparative morphological studies of the early stages, it seems best to respect for the present Field's revision.

The adult hybrid specimens, their mature larval cast skins, and the pupal shells of hybrids #1 and #2 are retained in the collection of the author.

ACKNOWLEDGMENTS

I am most grateful to Mr. Herman G. Real of San Mateo, California, for his review and criticism of the manuscript, and to Dr. Theodore D. Sargent for his editorial suggestions.

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NOTES AND NEWS

Erratum

In my paper, "Observations on some Phycitinae (Pyrilidae) of Texas with descriptions of two new species," (J. Lepid. Soc. 24: 249-255, 1970), the species *Dioryctria Auranticella* (Grote) is reported in error. Dr. E. G. Munroe, who saw the three specimens, when he examined my collection in early 1973, identified them as *Dioryctria rossi* Munroe.

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