

A REVISION OF THE MOTH  
GENUS *STENOPORPIA*  
(LEPIDOPTERA, GEOMETRIDAE)

FREDERICK H. RINDGE

BULLETIN  
OF THE  
AMERICAN MUSEUM OF NATURAL HISTORY  
VOLUME 140 : ARTICLE 2      NEW YORK : 1968





A REVISION OF THE MOTH GENUS  
*STENOPORPIA* (LEPIDOPTERA,  
GEOMETRIDAE)

FREDERICK H. RINDGE

*Curator, Department of Entomology  
The American Museum of Natural History*

BULLETIN  
OF THE  
AMERICAN MUSEUM OF NATURAL HISTORY  
VOLUME 140 : ARTICLE 2                      NEW YORK : 1968

BULLETIN OF THE AMERICAN MUSEUM OF NATURAL HISTORY

Volume 140, article 2, pages 65-134,  
figures 1-14, plates 3-16

*Issued November 29, 1968*

*Price: \$5.00 a copy*



## CONTENTS

INTRODUCTION . . . . .	69
Materials and Methods . . . . .	70
Acknowledgments . . . . .	70
SYSTEMATIC DESCRIPTIONS . . . . .	72
Genus <i>Stenoporpia</i> McDunnough . . . . .	72
Key to Species . . . . .	73
Group I . . . . .	78
<i>Stenoporpia pulchella</i> (Grossbeck) . . . . .	78
<i>Stenoporpia pulchella pulchella</i> (Grossbeck) . . . . .	78
<i>Stenoporpia pulchella coolidgearia</i> Dyar, New Status and New Combination . . . . .	80
<i>Stenoporpia margueritae</i> , New Species . . . . .	80
<i>Stenoporpia margueritae margueritae</i> , New Subspecies . . . . .	80
<i>Stenoporpia margueritae farina</i> , New Subspecies . . . . .	82
<i>Stenoporpia asymmetra</i> Rindge . . . . .	83
<i>Stenoporpia dionaria</i> (Barnes and McDunnough) . . . . .	83
Group II . . . . .	86
<i>Stenoporpia polygrammaria</i> (Packard) . . . . .	86
<i>Stenoporpia mediatra</i> Rindge . . . . .	88
<i>Stenoporpia dissonaria</i> (Hulst) . . . . .	89
<i>Stenoporpia dissonaria dissonaria</i> (Hulst) . . . . .	89
<i>Stenoporpia dissonaria campae</i> , New Subspecies . . . . .	91
<i>Stenoporpia anastomosaria</i> (Grossbeck) . . . . .	91
Group III . . . . .	93
<i>Stenoporpia pulmonaria</i> (Grote) . . . . .	94
<i>Stenoporpia pulmonaria dejecta</i> (Hulst), New Combination . . . . .	94
<i>Stenoporpia pulmonaria lita</i> , New Subspecies . . . . .	96
<i>Stenoporpia pulmonaria albescens</i> (Hulst), New Combination . . . . .	97
<i>Stenoporpia pulmonaria satisfacta</i> (Barnes and McDunnough), New Combination . . . . .	98
<i>Stenoporpia pulmonaria vicaria</i> , New Subspecies . . . . .	98
<i>Stenoporpia pulmonaria pulmonaria</i> (Grote) . . . . .	99
<i>Stenoporpia pulmonaria blattifera</i> , New Subspecies . . . . .	100
<i>Stenoporpia purpuraria</i> (Barnes and McDunnough) . . . . .	100
<i>Stenoporpia noctiluca</i> (Druce), New Combination . . . . .	102
<i>Stenoporpia serica</i> , New Species . . . . .	103
Group IV . . . . .	104
<i>Stenoporpia vernata</i> (Barnes and McDunnough) . . . . .	104
<i>Stenoporpia vernata vernata</i> (Barnes and McDunnough), New Status . . . . .	104
<i>Stenoporpia vernata variana</i> , New Subspecies . . . . .	106
<i>Stenoporpia vernallella</i> McDunnough . . . . .	107
Group V . . . . .	108
<i>Stenoporpia insipidaria</i> McDunnough . . . . .	109
<i>Stenoporpia anellula</i> (Barnes and McDunnough) . . . . .	110
<i>Stenoporpia badia</i> , New Species . . . . .	111
<i>Stenoporpia macdunnoughi</i> Sperry . . . . .	113
Group VI . . . . .	115
<i>Stenoporpia blanchardi</i> , New Species . . . . .	116
<i>Stenoporpia glaucomarginaria</i> McDunnough . . . . .	117
<i>Stenoporpia separataria</i> (Grote) . . . . .	119
<i>Stenoporpia excelsaria</i> (Strecker) . . . . .	120
<i>Stenoporpia excelsaria excelsaria</i> (Strecker) . . . . .	121
<i>Stenoporpia excelsaria pullata</i> , New Subspecies . . . . .	122

<i>Stenoporpia larga</i> , New Species . . . . .	124
<i>Stenoporpia cuneata</i> , New Species . . . . .	125
<i>Stenoporpia regula</i> , New Species . . . . .	126
<i>Stenoporpia graciella</i> McDunnough . . . . .	127
<i>Stenoporpia lea</i> , New Species . . . . .	129
<i>Stenoporpia bulbosa</i> , New Species . . . . .	130
LIST OF SPECIES WITH THEIR KNOWN DISTRIBUTION . . . . .	131
BIBLIOGRAPHY . . . . .	133



## INTRODUCTION

THE PRESENT PAPER is one of a continuing series of revisionary studies on the genera of the New World Cleorini (McDunnough, 1920), or Boarmiini (Forbes, 1948) of the subfamily Ennominae. Both these tribal names refer to a very large group of "inch worm" moths that are commonly represented in both the Old and New worlds. The adults, including some of the species of *Stenoporpia*, often rest on tree trunks, with their wings outspread and appressed to the bark. The wings are usually gray or brown in color, with a pattern that makes the moths almost invisible.

The purpose of this paper is to revise taxonomically the genus *Stenoporpia* for its entire range, and to answer some of the questions pertaining to the phylogeny and distribution of its species, tasks that have been long overdue. McDunnough (1920) proposed the genus, gave a review of the North American species, and presented illustrations of the male genitalia and some adults. There has been no revisionary work published on this genus as a whole since then, however, and eight new species have been described in the intervening years. The one previously described Mexican species has never been correctly placed in this genus.

Nine species and eight subspecies are described as new in this revision. In addition, one species from North America is transferred to another genus. Twenty-eight species are included in *Stenoporpia*; of these, six are polytypic. The members of this genus are found primarily in western North America and Mexico, from southern Alaska south into California and northern Baja California, and down the Rocky Mountains into Mexico, occurring as far south as Veracruz and Guatemala. Only one species is found elsewhere; it is in northeastern North America.

The genus is divided into six groups on the basis of the type of maculation and genitalia. The more primitive species, placed in group I, have relatively broad wings, with the cross lines weakly represented, the distal one paralleling the outer margin and being outwardly dentate on the veins. The more advanced species have more elongate wings,

with heavier and straighter cross lines.

The male genitalia of the more primitive species have a long slender uncus, and the costal arms of the valves tend to have a relatively large number of spines at the apex. The uncus becomes shorter and broader in the more highly evolved species, with the tip being hoodlike in the members of group VI. A reduction takes place in the number of apical spines on the costal arms until some species have only one or two.

The female genitalia show evolutionary changes in the sterigma and in the area of the intersegmental membrane between abdominal segments VII and VIII. The sterigma varies from an almost undifferentiated membranous area to a flat, lightly sclerotized structure with numerous small, concentric ridges to a recessed and elongate structure. The intersegmental membrane varies from being undifferentiated to possessing paired lateral pockets, or pouches. In the most highly evolved forms, these pouches unite medially to form a large, single, median structure.

The female genitalia of approximately one-third of the species of *Stenoporpia* have an unmodified, membranous intersegmental area anterior of the sterigma (between segments VII and VIII), whereas the remaining species have this part more or less sclerotized and variously modified, often into pouchlike or saclike protuberances. It is interesting to speculate on this difference and what has caused it. In the male genitalia the terminal portion of the costal arm is a narrow, sclerotized structure that appears to vary in the closeness of its attachment to the face of the valve from species to species. In the primitive species the costal arm tends to be closely attached. In the more specialized species the tip of the arm is not attached to the valve and, in fact, the apical region of the valve has a tendency to fold back dorsally away from the arm, thus leaving the tip of the arm as an exposed protuberance. In the females the more primitive species have an unmodified intersegmental membrane, whereas the more highly developed ones tend to have this area modified. The more specialized

males probably not only use the valves of the genitalia as a means of attachment to the female while mating, but also insert the tips of the costal arms into the intersegmental area as an aid in this process. Apparently the different species do so to varying degrees; *purpuria* has the longest tips of the arms (0.75 mm. in total length), but the female has only weakly developed pouches. On the other hand, the ends of the arms of *vernalella* are 0.6 mm. in length, and the female of this species has extremely long and sclerotized, hornlike pouches. The difference in the two species may be due to a different technique used in clasping while mating, or else there is a difference in the length of the costal arm that is not attached to the face of the valve.

The males of *Stenoporpia* do not have a ventral row of bristles on the third abdominal segment, whereas at least 11 of the 28 species possess a small hair pencil on the hind tibia. In closely allied genera, such as *Glena* (Rindge 1965, 1967) and *Anacamptodes* (Rindge, 1966), a well-developed tibial hair pencil is invariably associated with the ventral row of abdominal bristles. The hair pencils in *Stenoporpia* are smaller, are not situated in prominent grooves as are those of the above-mentioned related genera, and may be deciduous—all of which indicates that a method of inheritance is involved different from the presumably sex-linked inheritance in *Glena* and *Anacamptodes*.

#### MATERIALS AND METHODS

The present revision is based on a study of the collections of the American Museum of Natural History, the California Insect Survey, the Canadian National Collection, the Los Angeles County Museum of Natural History, the Museum of Comparative Zoology at Harvard College, and the United States National Museum of the Smithsonian Institution. Material from the private collections of several individuals has also been examined; these are referred to specifically in the section on Acknowledgments.

The specimens studied by the author at the American Museum of Natural History during the preparation of this paper have had identification or type labels affixed. All too often such labeling has not been done in the past, so that there is always the question of

whether or not certain specimens were examined by a reviser.

More than 4500 specimens have been studied during the preparation of this paper; more than one-half of them are in the collection of the American Museum of Natural History. It is interesting to note that 3020 of them were males and 1508 were females, a sex ratio of almost exactly two to one. By comparison the ratio was found to be three males to one female in the closely related genus *Anacamptodes* (Rindge, 1966).

The specimens photographed for this revision bear a typewritten "photo" label. In general, the adults and genitalia that are figured have been taken from the collection of the American Museum of Natural History. When such a procedure was not practical, the fact is specifically noted.

The following abbreviations have been used:

A.M.N.H., the American Museum of Natural History

C.N.C., Canadian National Collection, Ottawa, Ontario

M.C.Z., Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts

U.S.N.M., United States National Museum, Smithsonian Institution, Washington, D. C.

A large number of genitalic preparations were made by the author, who also had at his disposal the slides made by J. H. Sperry at the American Museum of Natural History, by J. H. McDunnough at the Canadian National Collection, by H. W. Capps and E. L. Todd at the United States National Museum, by S. E. Cassino and L. W. Swett at the Museum of Comparative Zoology at Harvard University, and by A. Blanchard, C. W. Kirkwood, and R. W. Poole. In all, 348 male and 158 female dissections were studied.

For this revisionary study, the genitalic structures of each sex are reproduced at different scales.

#### ACKNOWLEDGMENTS

The author wishes to acknowledge with thanks the cooperation and aid of the following colleagues who have allowed him to study the types and specimens in their charge: Dr. J. A. Powell of the California Insect Survey, University of California,



Berkeley; Dr. W. C. McGuffin of the Department of Forestry and Rural Development, Ottawa, for the Canadian National Collection; Mr. L. M. Martin of the Los Angeles County Museum of Natural History; Dr. P. J. Darlington, Jr., of the Museum of Comparative Zoology, Harvard University; Dr. E. L. Todd of the Insect Identification and Parasite Introduction Research Branch, United States Department of Agriculture, for the United States National Museum of the Smithsonian Institution; Mr. A. Blanchard of Houston, Texas; Dr. J. G. Francel-

mont of Ithaca, New York; Mr. C. W. Kirkwood of Summerland, California; Mr. R. H. Leuschner of Gardena, California; and Mr. R. W. Poole of Ithaca, New York.

The author wishes to thank Mr. Robert E. Logan of the American Museum of Natural History for the photographic work.

Some of the specimens used in the preparation of this paper were collected by the author with the support of National Science Foundation Grants G-9037, G-25134, GB-3856, and GB-6478X. This assistance is gratefully acknowledged.

## SYSTEMATIC DESCRIPTIONS

### GENUS *STENOPORPIA* McDUNNOUGH

*Stenoporpia* McDUNNOUGH, 1920, p. 25; 1938, p. 164.

*Glena* (*Stenoporpia*): FORBES, 1948, p. 54.

Head with front flat, smooth scaled; eyes large, wider than front; antennae of male bipectinate, with pectinations arising from apex of segments, each pectination with numerous setae, and with terminal one-eighth to one-fifth of shaft without pectinations; antennae of female simple or with short terminal pectinations, scaled, with terminal pair of setae; tongue present; labial palpi small to moderate in size, reaching middle of eye in some species. Thorax without tufts; fore tibia of male with elongate process, in length varying from shorter than to as long as tibia, extending distally beyond end of segment, in female shorter, about one-half of length of tibia; hind tibia with two pairs of spurs, with or without both groove and small hair pencil in male. Abdomen without tufts; male with third segment without medioventral row of bristles, and remainder of abdomen without additional modifications.

Forewings broad, rather elongate in most species, with 11 veins, and with elongate, slender areole;  $R_{1+2}$  anastomosed, with small cross vein to  $R_{3+4}$ ,  $R_5$  arising distal to cross vein;  $M_1$  from upper angle,  $M_2$  from near middle of dc,  $M_3$  from lower angle;  $Cu_1$  from near angle,  $Cu_2$  from one-half of distance to angle; with small fovea at base of wing below cubital vein in male. Hind wings broad, rounded, or tending to be elongate; outer margin concave between veins; frenulum strong in both sexes; with seven veins; Sc with weakly swollen base, approximate to radial vein for short distance only near base;  $R_1$  separating from  $M_1$  before upper angle,  $M_3$  from lower angle;  $Cu_1$  from near angle,  $Cu_2$  from near middle of cell;  $m+l_{dc}$  curved or weakly angulate.

MALE GENITALIA: Uncus with broad base, tapering medially, apical section varying from attenuate and pointed to broadly hood-like, terminating in two small points; socius absent; gnathos strongly sclerotized, slender, with small to moderate median enlargement;

valves large, elongate, narrow, symmetrical; costa broadly sclerotized basally and medially, extending as far as middle of inner surface of valve, projecting distally as narrow arm, extending to near tip of valve, apex symmetrical, rarely asymmetrical (one species), with variable number of short spines at tip; sacculus not modified; transtilla absent, apparently replaced by membranous strip; cristae present as large conspicuous patch near base of each valve, or absent; furca absent; anellus represented in most species by elongate, narrow strip; tegumen and saccus elongate, broadest posteriorly, tending to become narrowed anteriorly; aedeagus long, slender, tending to become both sclerotized and pointed posteriorly; vesica unarmed or with small dentate strip.

FEMALE GENITALIA: Papillae anales simple, elongate, with apophyses posteriores approximately twice as long as apophyses anteriores; sterigma varying from being membranous to lightly sclerotized, many species with numerous small ridges; anterolateral areas of sterigma either membranous, or lightly sclerotized and extending into inter-segmental area between segments VII and VIII, often with pair of lateral saclike pouches, or with single median protuberance; ductus bursae short, membranous or partly sclerotized; ductus seminalis arising ventrally or on right side of corpus bursae near ductus bursae; corpus bursae membranous, posterior portion narrow and striate, anterior part swollen; signum present on dorsal surface of corpus bursae.

The maculation of the species of *Stenoporpia* is of two basic types. One group of species has relatively broad wings on which the t. p. and extradiscal lines of the upper surface are weakly or incompletely represented, are outwardly dentate on the veins, and tend to curve parallel with the outer margin. The remaining species have more elongate wings, heavier and straighter t. p. and extradiscal lines that tend to be shaded with a dark band on the side away from the usually paler median area. All the species of the genus have the hind wings concolorous with the forewings, and have the same type of maculation as is found thereupon.



EARLY STAGES: Several species in this genus have been reared, but the descriptions of their early stages have not been published.

TYPE SPECIES: *Cleora anellula* Barnes and McDunnough, by original designation.

RANGE: The species of *Stenoporpia* are to be found primarily in western North America, from southern Alaska and British Columbia into Mexico and Guatemala; one species occurs in northeastern North America.

*Stenoporpia* is closely related to the genus *Glena* McDunnough; in fact Forbes (1948) considered it to be a subgenus of *Glena*. As previously indicated (Rindge, 1965, p. 270), I believe that the magnitude of the differences between the two warrant their being recognized as separate genera.

Some of the adults of *Stenoporpia*, particularly those of group I, can easily be mistaken for specimens of *Glena*. Males of the two groups can be separated on the basis of their antennae: members of the genus *Glena* have a long terminal seta at the apex of each pectination, whereas the setae on the ends of the antennal pectinations of *Stenoporpia* are of the same size. A genitalic dissection should be made whenever there is doubt as to the identification.

The male genitalia of *Stenoporpia* can be recognized by the less strongly developed median extension of the gnathos, the narrower attachment of the valves to the tegumen, the narrow costal arm on the apical portion of the inner face of the valves, the more slender anellus, and by the fact that the vesica is unarmed or has a small sclerotized piece. The female genitalia of *Stenoporpia* can be recognized by the characters given in the above generic description.

Another closely related genus is *Perigramma* Guenée (1857, p. 215; type species, *P. nervaria* Guenée). Since its publication, this genus has been associated with *Nephodia* Hübner and allied genera. A study of the male genitalia of *nervaria*, by D. S. Fletcher of the British Museum (Natural History), shows these structures to be very similar to those of *Stenoporpia*. As the venation of *Perigramma* is also of the same type as that of *Stenoporpia*, this group of moths should be placed in the Cleorini. Preliminary investigations show that they differ from *Stenoporpia* by the lack of an areole in the forewing

and by the presence of both the tibial hair pencil in a well-defined groove on the hind legs, and the bristle comb on the under surface of the third abdominal segment of the male. The adults are white in color, and vary from immaculate to having bold gray or grayish black bands on the upper surface of the wings. The species occur primarily in South America, but apparently extend northward into Central America.

The results of this revisionary study show that *crickmeri* Sperry, described as a *Stenoporpia*, should be transferred to the genus *Pterotaeta* Hulst.

Keys to the adults of *Stenoporpia*, based on both maculation and genitalia, have been prepared. The safest way to identify the species of the genus *Stenoporpia* is by means of the male genitalia. A number of the females have distinctive genitalic structures, but others are less clearly separable. The key to maculation should be used with caution, as the members of a number of species are variable in maculation and color.

#### KEY TO SPECIES

##### BASED ON MACULATION, SECONDARY SEXUAL CHARACTERS, AND DISTRIBUTION

1. Wings relatively short and broad, with  
t. p. line of upper surface narrow or  
weakly represented, outwardly dentate  
on veins and curving parallel with  
outer margin . . . . . 2
- Wings more elongate and narrower, with  
t. p. line broader, prominent, not out-  
wardly dentate on veins. . . . . 13
- 2(1). Upper surface of wings pink or cream  
colored . . . . . 3
- Upper surface of wings gray or grayish  
black . . . . . 4
- 3(2). Upper surface of wings pink; Arizona. .  
. . . . . *pulchella pulchella*
- Upper surface of wings cream colored;  
southern California . . . . .  
. . . . . *pulchella coolidgearia*
- 4(2). Upper surface of wings gray, with median  
area of forewings black. . . *mediatra*
- Forewings without above characters . . 5
- 5(4). Hind tibia of male with hair pencil . . 7
- Hind tibia of male without hair pencil. . 6
- 6(5). Forewings above with broad, pale gray  
median area; New Mexico and Durango  
. . . . . *margueritae margueritae*
- Forewings above with median are con-  
colorous with remainder of wing;  
western Texas . . *margueritae farina*

- 7(5). All discal spots of upper surface small and round; t. p. line strongly outwardly dentate on veins . . . . . 8  
 Discal spots of upper surface not as above; t. p. line weakly dentate. . . . . 9
- 8(7). Upper surface of wings grayish brown; length of forewing of male, 17 to 20 mm.; of female, 19 to 20 mm. . . . .  
 . . . . . *asymmetra*  
 Upper surface of wings pale gray; length of forewing of male, 19 to 23 mm.; of female, 20 to 25 mm. . . . . *dionaria*
- 9(7). T. p. line of upper surface weakly defined; northeastern North America . . . . .  
 . . . . . *polygrammaria*  
 T. p. line of upper surface prominent; southern Rocky Mountains and Texas . . . . . 10
- 10(9). T. p. line of upper surface evenly curved in lower portion of wing. . . . . 11  
 T. p. line of upper surface with basal curve above inner margin . . . . . 12
- 11(10). Upper surface of wings pale gray; Colorado to western Texas . . . . .  
 . . . . . *dissonaria dissonaria*  
 Upper surface of wings heavily suffused with brownish black; central and northeastern Texas . . . . .  
 . . . . . *dissonaria campa*
- 12(10). Upper surface of wings pale gray to grayish black; t. p. line of upper surface either without shade band or with faint brownish black band; southern California to western Texas . *anastomosaria*  
 Upper surface of wings grayish black; t. p. line of upper surface with prominent black or blackish gray shade band; central and northeastern Texas. . . . .  
 . . . . . *dissonaria campa*
- 13(1). Moths with two generations per year, the adults dimorphic in size, with specimens of spring generation noticeably larger than those of summer generation. . 14  
 Moths with either one generation per year or, if more, not dimorphic in size . . . . . 17
- 14(13). Hair pencil present on hind tibia of male . . . . . 15  
 Hair pencil absent on hind tibia of male . . . . . *lea*
- 15(14). Upper surface of wings purplish brown and more or less unicolorous; Arizona . . . . . *vernalella*  
 Upper surface of wings pale gray, with median area of forewing contrasting in color with broad brown bands next to cross lines . . . . . 16
- 16(15). Upper surface of wings more unicolorous, with median area not sharply contrasting with adjacent areas of forewing; southern Rocky Mountain states, Nevada, and southeastern California . . . . . *vernata vernata*  
 Upper surface of wings with pale median area of forewing contrasting sharply with dark brown or reddish brown scaling of shade bands next to cross lines; Sierra Nevadas, California . . . . . *vernata variata*
- 17(13). Upper surface whitish tan, with very broad reddish brown or dark brownish red bands next to cross lines filling in much of basal and outer areas of forewings . . . . . *macdunnoughi*  
 Wings without the above coloration. . 18
- 18(17). Forewings with t. p. line straight, prominent, meeting inner margin just basad of center, and 15 to 18 mm. long; New Mexico . . . . . *inspidaria*  
 Without above characters. . . . . 19
- 19(18). Forewings with anterior portion of t. p. line very broadly curved and strongly represented . . . . . 20  
 Forewings with anterior portion of t. p. line more shallowly curved and weakly represented . . . . . 33
- 20(19). Occurring in the United States and Canada . . . . . 21  
 Occurring in Mexico and Guatemala . 28
- 21(20). Hair pencil present on hind tibia of male . . . . . 22  
 Hair pencil absent from hind tibia of male . . . . . *purpuraria*
- 22(21). Upper surface of wings unicolorous pale gray, with large, oval, discal spots on forewings, and with curving, often more or less dentate t. p. line; length of shorter, broad forewings, 15 to 21 mm.; Rocky Mountains . . . . . *separataria*  
 Upper surface of wings varying from pale gray to brownish gray, with large linear discal spots on forewings, and with straighter, non-dentate t. p. line; length of more elongate, narrower forewings, 18 to 23 mm. . . . . 23
- 23(22). Forewings above more or less unicolorous, without dark shade bands next to cross lines . . . . . 24  
 Forewings above with median area contrasting in color with remainder of wing, owing to dark shade bands next to cross lines. . . . . 26
- 24(23). Upper surface dark gray; coastal central California . . . . . *pulmonaria lila*  
 Upper surface paler gray . . . . . 25
- 25(24). Upper surface whitish gray; coastal areas



- of northern California to Alaska . . . . .  
 . . . . . *pulmonaria albescens*  
 Upper surface darker gray; northern  
 Rocky Mountains . . . . .  
 . . . . . *pulmonaria satisfacta*  
 26(23). Shade bands next to cross lines reddish  
 brown or dark brown, broad, prominent  
 . . . . . 27  
 Shade bands next to cross lines grayish  
 black or brownish gray, narrow, some-  
 what inconspicuous; Colorado . . . . .  
 . . . . . *pulmonaria vicaria*  
 27(26). Upper surface with median area of fore-  
 wings pale gray, with bright, con-  
 trastingly colored shade bands; Pacific  
 coast states . . . . . *pulmonaria dejecta*  
 Upper surface with median area of fore-  
 wings darker gray, with dull brown  
 shade bands; southern Rocky Moun-  
 tain states. . . . . *pulmonaria pulmonaria*  
 28(20). Length of forewing, 16 mm.; Coahuila  
 . . . . . *bulbosa*  
 Length of forewing, 18 to 23 mm. . . . . 29  
 29(28). Upper surface of forewings with broad  
 brown shade band distad of t. p. line;  
 Durango . . . . . *cuneata*  
 Upper surface of forewings without  
 prominent shade band distad of t. p.  
 line. . . . . 30  
 30(29). Upper surface of wings light gray;  
 Hidalgo. . . . . *regula*  
 Upper surface of wings a darker, purplish  
 gray . . . . . 31  
 31(30). Length of forewing, 23 mm.; Durango. .  
 . . . . . *pulmonaria blattifera*  
 Length of forewing, 18 to 21 mm. . . . . 32  
 32(31). Upper surface with median area of fore-  
 wings concolorous with adjacent areas;  
 Durango . . . . . *serica*  
 Upper surface with median area of fore-  
 wings paler than adjacent areas;  
 southern Mexico and Guatemala . . . . .  
 . . . . . *noctiluca*  
 33(19). Hair pencil present on hind tibia of male  
 . . . . . 34  
 Hair pencil absent from hind tibia of male  
 . . . . . 35  
 34(33). Upper surface of wings an even gray or  
 purplish gray; length of forewing, 16 to  
 21 mm.; western Texas . . . . . *blanchardi*  
 Upper surface of wings more or less  
 heavily suffused with black scales,  
 most specimens having prominent red-  
 dish brown band distad of t. p. line;  
 length of forewing, 18 to 23 mm.;  
 southern Rocky Mountain states and  
 Durango . . . . . *glaucomarginaria*  
 35(33). Forewing above with large, round discal  
 spot . . . . . 36  
 Forewing above with or without small  
 discal dash . . . . . 37  
 36(35). Forewing above with t. a. and t. p. lines  
 shaded by narrow grayish black or  
 brownish black bands; southern Rocky  
 Mountains . . . . . *anellula*  
 Forewing above with t. a. and t. p. lines  
 shaded by wide, prominent, orange  
 brown bands; California. . . . . *badia*  
 37(35). Upper surface with median area of fore-  
 wings pale gray, contrasting with  
 adjacent area of wings; smaller species,  
 with length of forewings 17 to 22 mm.  
 . . . . . 38  
 Upper surface with median area of fore-  
 wings dark gray, concolorous with  
 adjacent area of wings; large species,  
 with length of forewings 22 to 24 mm.;  
 Arizona . . . . . *larga*  
 38(37). Upper surface of wings pale gray, with  
 weak shade bands to cross lines; most  
 specimens without median line on fore-  
 wings . . . . . *graciella*  
 Upper surface of wings darker gray, being  
 more heavily suffused with black  
 scales, with or without heavy bands;  
 most specimens with median line on  
 forewings . . . . . 39  
 39(38). Forewings above without noticeable  
 shade bands next to t. a. and t. p.  
 lines; coastal regions of Oregon, Wash-  
 ington, and British Columbia . . . . .  
 . . . . . *excelsaria excelsaria*  
 Forewings above with wide, black shade  
 bands next to cross lines; Rocky Moun-  
 tains from British Columbia to Du-  
 rango . . . . . *excelsaria pullata*
- BASED ON MALE GENITALIA<sup>1</sup>
1. Cristae rudimentary or absent . . . . . 2  
 Cristae present in large, conspicuous  
 patch on each side of very slender  
 anellus . . . . . 8
  - 2(1). Anellus almost as wide as width of  
 aedeagus . . . . . *pulchella*  
 Anellus very slender, much narrower than  
 width of aedeagus . . . . . 3
  - 3(2). Apical section of costal arm of valve with  
 spines extending from apex down outer  
 margin . . . . . *polygrammaria*  
 Apical section of costal arm with terminal  
 spines only . . . . . 4
  - 4(3). Aedeagus 1.1 to 1.2 mm. in length . . . .  
 . . . . . *margueritae*  
 Aedeagus 0.9 to 1.0 mm. in length . . . . 5

<sup>1</sup> The males of *bulbosa* are unknown.

- 5(4). Vesica with small sclerotized strip . . . 6  
 Vesica unarmed . . . . . 7
- 6(5). Uncus with apex sharply curved ventrally, making about a 90 degree arc; tip of costal arm thickly covered with many short spines . . . . . *mediatra*  
 Uncus more gently curved; tip of costal arm with from five to 10 short spines on posterodistal surface . . . . .  
 . . . . . *anastomosaria*
- 7(5). Costal arm about 0.4 mm. in length, with from five to 10 short spines at apex. . . . . *anastomosaria*  
 Costal arm about 0.3 mm. in length, with from three to five closely set spines at apex . . . . . *dissonaria*
- 8(1). Costal arms asymmetrical . . *asymmetra*  
 Costal arms symmetrical . . . . . 9
- 9(8). Uncus with slender, elongate apex, less than 0.1 mm. in width . . . . . 10  
 Uncus with wider apex . . . . . 14
- 10(9). Vesica with small sclerotized strip . . . . . *dionaria*  
 Vesica unarmed . . . . . 11
- 11(10). Gnathos tapering to median point . . 12  
 Gnathos with median swelling . . . . 13
- 12(11). Apex of costal arm with four or five thick, evenly spaced spines in single row . . . . . *noctiluca*  
 Apex of costal arm with eight or more slender spines not arranged in single row. . . . . *purpuraria*
- 13(11). Spines at apex of costal arm three to seven in number, evenly and widely spaced, comblike . . . . . *pulmonaria*  
 Spines at apex of costal arm two to four in number, crowded together. . . *serica*
- 14(9). Uncus triangular, evenly tapering to apex . . . . . 15  
 Uncus with distal portion attenuate, hoodlike . . . . . 16
- 15(14). Apex of costal arm with single spine projecting more or less parallel with axis of arm . . . . . *vernata*  
 Apex of costal arm with two (rarely one) spines projecting outwardly at angle to arm . . . . . *vernalella*
- 16(14). Apex of costal arm with one large spine and with from one to four smaller spines. . . . . 17  
 Apex of costal arm with three to four spines of approximately equal size . . . . . 26
- 17(16). Apex of costal arm with blunt tip, with spines arranged across end of arm. . 18  
 Apex of costal arm with tapered or wedge-shaped tip, with large spine at tip and smaller spine or spines on sloping surface . . . . . 21
- 18(17). Apex of costal arm with large spine between smaller spines . . . . . *anellula*  
 Apex of costal arm with one large spine, and with one or two smaller spines on one side. . . . . 19
- 19(18). Apex of costal arm with large spine situated distally, with smaller spine or spines mediad thereto. . *macdunnoughi*  
 Apex of costal arm either with large spine mediad of smaller spine or spines, or with smaller spines around base of large spine . . . . . 20
- 20(19). Apex of costal arm with large spine directed posteromedially . *blanchardi*  
 Apex of costal arm with large spine directed outwardly . . . . . *larga*
- 21(17). Apex of costal arm with one large spine and one or two small spines . . . . 22  
 Apex of costal arm with one large spine and from three to five smaller spines . . . . . *regula*
- 22(21). Apex of costal arm with small spine anterodistal to large spine. . . *badia*  
 Apex of costal arm with small spine anteromedial to large spine . . . . 23
- 23(22). Gnathos with median projection very long and slender . . . . . 25  
 Gnathos without noticeable median projection . . . . . 24
- 24(23). Aedeagus 2.2 to 2.4 mm. in length . . . . . *insipidaria*  
 Aedeagus 2.7 mm. in length . . . *cuneata*
- 25(23). Genitalia larger, with width of outer portion of uncus averaging 0.18 mm., aedeagus 2.30 mm. long and 0.28 mm. wide, narrowed apex of costal arm 0.44 mm. in length and 0.12 mm. in width . . . . . *graciella*  
 Genitalia smaller, with width of outer portion of uncus averaging 0.15 mm., aedeagus 2.20 mm. long and 0.25 mm. wide, narrowed apex of costal arm 0.42 mm. in length and 0.10 mm. in width . *lea*
- 26(16). Apex of costal arm slender, tapering, with from two to four closely set spines projecting at angle from arm . . . . 27  
 Apex of costal arm broader, with truncate apex, and having from four to six more widely spaced spines extending parallel with arm. . . . . *excelsaria*
- 27(26). Aedeagus larger, averaging 2.4 mm. in length and 0.3 mm. in width. . . . . *glaucomarginaria*  
 Aedeagus smaller, averaging 2.1 mm. in length and 0.2 mm. in width. . . . . *separataria*

BASED ON FEMALE GENITALIA<sup>1</sup>

1. Intersegmental area antieriad of sterigma unmodified . . . . . 2  
Intersegmental area antieriad of sterigma with either sclerotized lateral pouches or large median protuberance . . . . . 8
- 2(1). Apophyses posteriores at least 5 mm. in length . . . . . *pulchella*  
Apophyses posteriores not longer than 2.5 mm. . . . . 3
- 3(2). Sterigma broadly sclerotized, in form of transverse ellipse with lateral sclerotized areas. . . . . *asymmetra*  
Sterigma membranous, not as above . . . . . 4
- 4(3). Signum with posterior portion having irregular ridges. . . . . *margueritae*  
Signum with posterior portion smoothly sclerotized. . . . . 5
- 5(4). Apophyses posteriores 1.6 to 1.8 mm. in length; signum smaller, 0.30 mm. wide and 0.16 mm. long . . . . . *dissonaria*  
Apophyses posteriores 1.8 to 2.4 mm. in length; signum larger, 0.40 mm. wide and 0.21 mm. long . . . . . 6
- 6(5). Corpus bursae with distinct, wide, posterior necklike region . . . . . *mediatira*  
Corpus bursae with narrower posterior portion gradually increasing in width anteriorly to form rounded sac . . . . . 7
- 7(6). Sterigma membranous, with lateral and posterior areas extended and weakly crenulate . . . . . *polygrammaria*  
Sterigma weakly sclerotized, very long and narrow, with lateral and posterior areas not modified . . . . . *anastomosaria*
- 8(1). Intersegmental area antieriad of sterigma with anterolateral enlargements, or pouches . . . . . 9  
Intersegmental area antieriad of sterigma with elongate median protuberance . . . . . 24
- 9(8). Area between anterolateral pouches straight . . . . . 11  
Area between anterolateral pouches broad, V-shaped . . . . . 10
- 10(9). Apophyses posteriores 2.3 mm. in length . . . . . *larga*  
Apophyses posteriores 1.8 mm. in length . . . . . *cuneata*
- 11(9). Anterolateral enlargements elongate, extending at least as far as anterior margin of sclerotized area of ductus bursae . . . . . 12  
Anterolateral enlargements smaller, not extending past middle of sclerotized area of ductus bursae . . . . . 13
- 12(11). Anterolateral enlargements of moderate length, extending to anterior margin of sclerotized area of ductus bursae . . . . . *vernata*  
Anterolateral enlargements very long, extending past posterior end of corpus bursae . . . . . *vernalella*
- 13(11). Sterigma with transverse ridges . . . . . *dionaria*  
Sterigma unmodified or with concentric, semicircular ridges . . . . . 14
- 14(13). Sclerotized area of ductus bursae tapering anteriorly . . . . . 15  
Sclerotized area of ductus bursae with parallel sides. . . . . 16
- 15(14). Sterigma with numerous concentric ridges, but not extending antieriad to opening of ductus bursae . . . . . *anellula*  
Sterigma with fewer concentric ridges, and with anterior ridges extending into opening of ductus bursae . . . . . *badia*
- 16(14). Ductus bursae with heavily sclerotized, U-shaped area . . . . . *purpuraria*  
Ductus bursae with lightly sclerotized median area, with dorsolateral areas not broadly united anteriorly . . . . . 17
- 17(16). Sterigma triangular. . . . . *separataria*  
Sterigma with ridges concentric and semicircular . . . . . 18
- 18(17). Sterigma with semicircular ridges not extending anteriorly into opening of ductus bursae . . . . . *serica*  
Sterigma with semicircular ridges extending anteriorly into opening of ductus bursae . . . . . 19
- 19(18). Anterolateral enlargements of intersegmental area well developed, outwardly curved, and having median sclerotized strip between them . . . . . *macdunnoughi*  
Intersegmental area not as above. . . . . 20
- 20(19). Apophyses posteriores 2.0 to 2.5 mm. in length . . . . . *pulmonaria*  
Apophyses posteriores 1.6 to 2.0 mm. in length . . . . . 21
- 21(20). Intersegmental area without definite lateral swellings, and with anterior margin extending to middle of sclerotized portion of ductus bursae. . . . . *insipidaria*  
Intersegmental area with lateral swellings, and with anterior margin not extending beyond posterior end of sclerotized portion of ductus bursae . . . . . 22
- 22(21). Sterigma with few ridges and more strongly developed anterolateral areas . . . . . *glaucomarginaria*

<sup>1</sup> The female genitalia of *noctiluca* and *regula* are unknown.

- Sterigma with numerous ridges and more poorly defined anterolateral areas. .23
- 23(22). Intersegmental area with pouchlike sacs transverse, connected medially by straight, membranous strip . . . . . *blanchardi*
- Intersegmental area with pouchlike sacs tending to be diagonal, connected medially by lightly sclerotized, slightly V-shaped strip . . . . . *excelsaria*
- 24(8). Median protuberance of intersegmental area rounded or bluntly pointed anteriorly . . . . . 25
- Median protuberance of intersegmental area swollen and bulbous . . . *bulbosa*
- 25(24). Areas laterad of sterigma rugose, heavily sclerotized. . . . . *graciella*
- Areas laterad of sterigma smoothly and more lightly sclerotized . . . . . *lea*

## GROUP I

The species of this group can be recognized by the relative broadness of the wings and the fact that the t. p. and extradiscal lines of the upper surface are weakly or incompletely represented, outwardly dentate on the veins, and curve parallel with the outer margin. The median area of the forewing tends to be concolorous with the remainder of the wing, as it is not set off by dark bands bordering the two cross lines. The discal spots are circular. Small hair pencils are present on the hind tibia of two of the species.

The male genitalia have the uncus with a slender apex; the costal arms may be symmetrical or asymmetrical, and they tend to have a relatively large number of setae at the apex; the cristae may be either inconspicuous or represented by a large patch; the anellus may be either wide or narrow; and the vesica may be armed or unarmed.

The female genitalia cannot be used to define the group. These structures have either a membranous or lightly sclerotized sterigma, or the sterigma is covered with transverse ridges (*dionaria*). The anterolateral areas of the sterigma, in the intersegmental fold, are either not modified or have sclerotized pouchlike areas (*dionaria*). The ductus bursae is either entirely membranous (*pulchella*) or has a sclerotized area. The signum of *pulchella* has a transverse ridge, whereas the signa of the other species are ovate, with a recessed central area. The apophyses may either be very long (*pulchella*) or of moderate length. Of the four species in this group, *pulchella* is considered to have the more primitive characters and *dionaria* to have the most advanced ones.

Four species are included: *pulchella*, *margueritae*, *asymmetra*, and *dionaria*.

### *Stenoporpia pulchella* (Grossbeck)

*Selidosema pulchella* GROSSBECK, 1909, p. 156.

This species can be distinguished from all the others in the genus by the coloration of the upper surface of the wings. Two subspecific populations are recognized; one has pink or flesh-colored wings (*pulchella*), whereas the other has a cream-colored upper surface (*coolidgearia*). The genitalia of this species are very distinctive.

### *Stenoporpia pulchella pulchella* (Grossbeck)

Plate 7, figure 1

*Selidosema pulchella* GROSSBECK, 1909, p. 156.  
BARNES AND McDUNNOUGH, 1912, p. 35, pl. 16, fig. 7 (cotype male).

*Cleora pulchella*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia pulchella*: McDUNNOUGH, 1920, p. 26 (*partim*); 1927, p. 278; 1938, p. 164.

The upper surface of the wings of specimens from this population are pink or flesh colored. The distribution is from southern Arizona and adjacent states into Sonora.

MALE: Head with vertex pink or flesh colored; front dark gray, with small pink or flesh-colored area at bottom; palpi dark gray, with some pale scaling on first segment. Thorax pink or flesh colored above, with a few gray scales; below dull gray or buff; forelegs and middle legs gray on outer surfaces, buff beneath, and with narrow buff margins on ends of tarsal segments; hind legs buff, without hair pencil. Abdomen pink or flesh colored above, with scattered gray scales; paler below.

UPPER SURFACE OF WINGS: Forewings pinkish (freshly emerged specimens) or flesh colored, with scattered grayish black scales; veins tending to be yellowish buff; cross lines



more or less completely represented but not prominent, grayish black in color; basal line represented by costal spot in some specimens; t. a. and median lines represented by large spots on costa and by smaller spots on cubital and anal veins, spots more or less connected by faint dark line; discal spot elongate or circular, large, hollow; t. p. line similar to other lines, with large spot at about two-thirds of length of costa, and with stronger representation between spots on veins, particularly between veins  $M_3$  and  $Cu_2$  and above inner margin, where line becomes heavier and geminate; subterminal area with variable number of dark scales, these tending to be concentrated in cells  $M_1$  and  $M_2$ , forming nebulous spot, and above anal margin; terminal line narrow, black, interrupted by veins, and with prominent intravenular spots; fringe gray, broadly interrupted by pinkish scales opposite veins. Hind wings concolorous with forewings, tending to be slightly paler anteriorly, and with more grayish black scaling; maculation as on forewings, with weakly defined intradiscal line and extradiscal line complete, concave between veins; discal spot large, near extradiscal line; subterminal area broad, with diffuse dark scaling; terminal line and fringe similar to those of forewings.

**UNDER SURFACE OF WINGS:** Pale gray, with most of forewings anterior of anal vein broadly suffused with dark gray and having faint pinkish tinge; forewings without maculation except for large discal spot, incomplete t. p. line, and partial subterminal suffusion in anterior portion of wing; hind wings with discal spot, and extradiscal line absent from most specimens; terminal line represented by small to obsolescent intravenular dots; fringe concolorous with wing.

**LENGTH OF FOREWING:** 13 to 20 mm.

**FEMALE:** Similar to male but with heavier suffusion of grayish black scales on all wings above, and with maculation tending to be lost as result; under surface slightly grayer, with more dark scales.

**LENGTH OF FOREWING:** 21 to 23 mm.

**MALE GENITALIA:** Uncus triangular, with apical portion slightly attenuate and curved ventrally, apex with elongate paired points; gnathos with moderate-sized median enlargement, rounded apically and having

punctate surface; valves rounded apically; costa rather weakly sclerotized, with enlarged median valvular area; terminal arm short, approximately 0.25 mm. in length, angled outwardly across face of valve, apex rounded and with from four to nine small spines on posterodistal margin (number of spines often different on two arms of single genitalia); cristae absent or represented by several inconspicuous setae near base of valve; anellus with broad base, narrowed medially, then widening again posteriorly, becoming almost as wide as aedeagus; aedeagus 1.0 to 1.1 mm. in length, longer than combined lengths of uncus, tegumen, and saccus, with posterior end bluntly rounded; vesica armed with slender, dentate strip, 0.35 to 0.40 mm. in length.

**FEMALE GENITALIA:** Sterigma membranous, not differentiated; ductus bursae elongate, membranous, triangular, tapering anteriorly, with median constriction; ductus seminalis arising posteriorly on corpus bursae near junction with ductus bursae; corpus bursae with posterior end narrow and weakly striate, anterior end swollen; signum a transverse ellipse with irregular margins and transverse ridge; apophyses posteriores 5.7 mm. in length; apophyses anteriores 3.2 mm. in length.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Grossbeck described *pulchella* from three male specimens. His type labels designate one of them as "♂ type" and the other two as cotypes, although they are not so specified in the original description. The specimen with Grossbeck's type label is hereby designated as the lectotype; it is in the American Museum of Natural History, and its genitalia are mounted on slide F.H.R. No. 2445. The two cotypes are in the collections of that institution and of the United States National Museum.

**TYPE LOCALITY:** Santa Catalina Mountains, Pinal County, Arizona.

**DISTRIBUTION:** Southern Arizona, extending into the immediately adjacent portions of southwestern New Mexico and southeastern California (the Yuman district of the Sonoran Biotic Province), and south into Sonora (see fig. 1).

**TIME OF FLIGHT:** The adults have been

captured from February through May, and from July into November.

REMARKS: Thirty-three specimens (29 males and four females) and eight genitalic dissections (seven males and one female) have been studied, including all three of the original type specimens.

Freshly emerged specimens have the upper surfaces of the wings and body a more or less bright pink; this distinctive hue fades to a flesh color in older examples. This coloration will serve to identify this population.

The male genitalia of *pulchella* are considered to have the most primitive characters of any species in the genus. These characters are diagnostic for this species, and they include the rather poorly developed and weakly sclerotized costal arm, the inconspicuous cristae, the broad anellus, and the well-developed dentate strip in the vesica.

The female genitalia can also be considered as possessing primitive characters for the genus. These include the long apophyses posteriores, the membranous sterigma and ductus bursae, and the elliptical signum with the transverse ridge.

***Stenoporopia pulchella coolidgearia* Dyar,**  
new status and new combination

Plate 3, figure 1, plate 13, figure 1

*Stenoporopia pulchella*: McDUNNOUGH, 1920, p. 26 (*partim*), pl. 4, fig. 10 (male genitalia).

*Stenoporopia coolidgearia* DYAR, 1923, p. 24. McDUNNOUGH, 1927, p. 278 (synonym of *pulchella*); 1938, p. 164.

This population, from southern California and Baja California, is similar to nominate *pulchella*, but the upper surface of the wings is cream colored.

MALE: Similar to nominate *pulchella* but upper surfaces of body and wings cream colored; upper surface of wings tending to have slightly more grayish black scales, and maculation slightly more strongly defined, than in nominate population.

LENGTH OF FOREWING: 15 to 20 mm.

FEMALE: Similar to male but tending to have more dark scaling.

LENGTH OF FOREWING: 18 to 21 mm.

MALE GENITALIA: Similar to those of nominate subspecies.

FEMALE GENITALIA: Similar to those of nominate subspecies, but with apophyses

posteriores 5.0 mm. in length and apophyses anteriores 3.1 mm. long.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPE: U.S.N.M. No. 25828; this specimen is a male, as are the two paratypes from which Dyar described *coolidgearia*.

TYPE LOCALITY: Palm Springs, Riverside County, California.

DISTRIBUTION: Southern California and northwestern Baja California (see fig. 1). Most of the specimens of this population have been taken in the Interior Angeles District of the Southern Cordilleran Biotic Province of California.

TIME OF FLIGHT: The adults have been taken in every month from November through May.

REMARKS: A total of 121 specimens (115 males and seven females) and seven genitalic dissections (six males and one female) have been studied, including all of Dyar's original type series.

***Stenoporopia margueritae*,<sup>1</sup> new species**

This is a gray species, with a broad median area on the upper surface of the forewings. It occurs in two subspecific populations.

***Stenoporopia margueritae margueritae*,**  
new subspecies

Plate 3, figure 2, plate 7, figure 2, plate 13,  
figure 2

This subspecies is the larger of the two and has a contrasting, pale gray median area on the forewings. It occurs in southern New Mexico and Durango.

MALE: Head with vertex having mixture of whitish gray and grayish black scales; front whitish gray, with central area broadly black; palpi black or grayish black, with some paler scaling on first segment. Thorax appearing pale gray above, covered with mixture of whitish gray and grayish black scales and hairlike scales; below grayish white anteriorly, becoming white posteriorly; fore and middle legs gray on outer surface, whitish gray on inner surface; hind legs

<sup>1</sup> It gives me great pleasure to name this species for my daughter Marguerite, who has accompanied my wife and me on many of our field trips, including the trip to New Mexico in 1964 when the types of this subspecies were caught.

whitish gray, without hair pencil; all tarsi gray, with narrow whitish margins on ends of segments. Abdomen pale gray above, with scattered black scales, the latter tending to be grouped into two spots at ends of segments; paler below.

**UPPER SURFACE OF WINGS:** Forewings whitish gray, with variable number of dark grayish brown and black scales, particularly in basal and outer portions of wing; cross lines more or less completely represented but not prominent, black or grayish black; basal line obsolescent; t. a. line represented by large costal spot at about one-fourth of length of costa, extending outward into cell, then sharply angled posteriorly, with outward bends on veins, meeting inner margin at one-fourth of its length; median line absent or very weakly indicated except for a large costal spot; discal spot large, prominent, solid or with a few pale scales in middle; t. p. line extending from costal spot and subparalleling outer margin, represented by more or less connected venular spots, and with inward angle above anal vein; t. p. line shaded outwardly by broader, somewhat nebulous band; s. t. line white, narrow, outwardly pointed on veins; terminal line narrow, black, interrupted by veins, and with intravenular spots; fringe gray, interrupted by grayish white scales opposite veins. Hind wings concolorous with forewings, with broad, pale basal area; maculation as on forewings, with obsolescent intradiscal line and with complete, geminate extradiscal line; discal spot small; subterminal area broad, with diffuse dark scaling, and with narrow, white s. t. line; terminal line and fringe similar to those of forewings.

**UNDER SURFACE OF WINGS:** Pale gray, with some darker gray scaling in cell of forewing; forewings without maculation except for discal spot and faint reflection of t. p. line, and (in one specimen) broad subterminal suffusion in anterior portion of wing; hind wings immaculate or with discal dot; terminal line brownish gray, narrow, present on all wings; fringe concolorous with wing.

**LENGTH OF FOREWING:** 17 to 19 (holotype) mm.

**FEMALE:** Similar to male but with slightly more grayish black scales on upper surface of wings.

**LENGTH OF FOREWING:** 19 to 20 (allotype) mm.

**MALE GENITALIA:** Uncus triangular, apical portion not attenuate but slightly curved ventrally, apex with small paired points; gnathos with moderate-sized, smoothly sclerotized median enlargement, rounded apically; valves with apex either rounded or bluntly pointed; costa with enlarged median valvular area extending across most of inner face of valve; costal arm not reaching end of valve, approximately 0.4 mm. in length, extending parallel with costal margin after narrowing from shoulder, apex rounded and with from four to six closely set spines; cristae represented by rather inconspicuous group of setae near base of each valve; anellus elongate slender; aedeagus 1.0 to 1.1 mm. in length, slightly longer than combined lengths of tegumen and saccus, with posterior end pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma weakly sclerotized, with smooth, circular or elliptical median area, and with anterolateral areas not modified; ductus bursae with triangular, membranous posterior area, a sclerotized median section with sclerotized dorsal folds not meeting, and with membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising on right posteroventral section of corpus bursae; latter relatively short and broad, with narrow, longitudinally striate posterior portion, and with weakly swollen anterior section; signum dorsal, varying from rectangular to elliptical, with anterior margin doubled in thickness and dentate, and with flat central area having several irregular, narrow ridges; apophyses posteriores 1.9 to 2.0 mm. in length; apophyses anteriores 1.0 to 1.1 mm. long.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, and allotype, female, Pine Camp, 2 miles northeast of Cloudcroft, Otero County, New Mexico, elevation 8600 feet, July 3, 1964 (F., P., and M. Rindge). The genitalia of the holotype are on slide F.H.R. No. 13230, and those of the allotype on slide F.H.R. No. 13201. Paratypes: Same data as types but July 6, 1964, one male; 10 miles west of El Salto, Durango, Mexico, elevation 9000 feet, July 29, 1964 (J. E. H. Martin), one female.

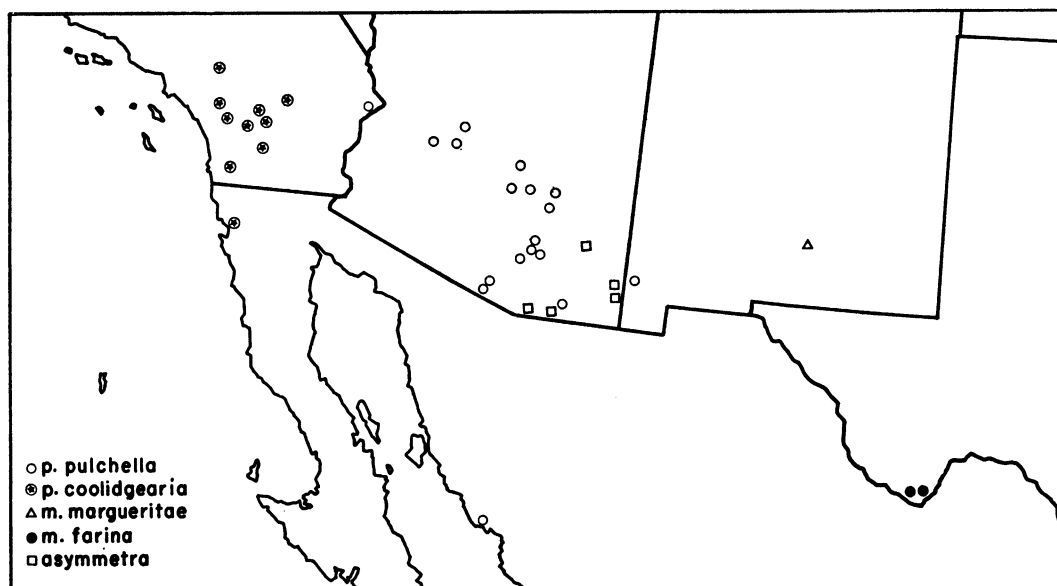


FIG. 1. Distribution of *Stenoporpia pulchella* (Grossbeck), *S. margueritae*, new species, and *S. asymmetra* Rindge.

The primary types and the male paratype are in the collection of the American Museum of Natural History; the female paratype is in the Canadian National Collection.

**DISTRIBUTION:** South central New Mexico (see fig. 1), and the mountains of Durango.

**TIME OF FLIGHT:** July.

**REMARKS:** Four specimens (two males and two females) and three genitalic dissections (one male and two females) have been studied.

The three specimens from New Mexico are quite similar to one another, whereas the Durango female is more heavily shaded with black than is the allotype.

The male genitalia of *margueritae* can be separated from those of *pulchella* by means of the nature of the costal arms and by the presence of the narrow anellus in the present taxa.

The female genitalia can be distinguished from those of the preceding species by the much shorter apophyses.

***Stenoporpia margueritae farina*,**  
new subspecies

Plate 3, figure 3

The upper surface of the wings of the members of this population is a more or less

unicolorous grayish brown. The moths occur in western Texas.

**MALE:** Head, thorax, and abdomen similar to those of nominate *margueritae* but more heavily suffused with grayish brown scales above.

**UPPER SURFACE OF WINGS:** Both forewings and hind wings whitish gray, heavily and evenly suffused with dark gray and dark grayish brown scales; maculation similar to that of nominate subspecies; outer portion of all wings tending to be slightly darker than median area.

**UNDER SURFACE OF WINGS:** Similar to that of nominate *margueritae*.

**LENGTH OF FOREWING:** 16 to 18 mm.; holotype, 17 mm.

**FEMALE:** Similar to male but tending to have fewer dark scales above.

**LENGTH OF FOREWING:** 16 to 17 mm.; allotype, 17 mm.

**MALE GENITALIA:** Similar to those of nominate subspecies.

**FEMALE GENITALIA:** Similar to those of nominate subspecies.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, Green Gulch, Big Bend National Park, Texas, October 7, 1965

(A. and M. E. Blanchard). Allotype, female, same data, September 27, 1965. The genitalia of the holotype are on slide F.H.R. No. 13436, and of the allotype on slide F.H.R. No. 14410. Paratypes, all from Texas: Same data as holotype, July 1, 1965, September 27, 1965, October 2, 3, 5, 7, 1965, October 2, 11, 1966, October 2, 1967, 34 males and three females; Basin, Big Bend National Park, April 9, 1967, May 14, 1966, September 27, 1965, October 2, 1966, October 3-5, 1967 (A. and M. E. Blanchard), 10 males; Pine Canyon, Big Bend National Park, April 8, 1967 (A. and M. E. Blanchard), one male; Chisos Mountains, Big Bend National Park, September 14, 1952, one female.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution, of the Los Angeles County Museum of Natural History, of A. Blanchard, of C. W. Kirkwood, and of R. H. Leuschner.

**DISTRIBUTION:** This population is known only from western Texas (see fig. 1).

**TIME OF FLIGHT:** The adults have been captured in the months of April, May, July, September, and October.

**REMARKS:** Fifty specimens (46 males and four females) and five genitalic dissections (four males and one female) have been studied.

This population was collected at elevations of 5400 (Green Gulch) and 5500 feet (Basin) (Blanchard, *in litt.*).

#### *Stenoporpia asymmetra* Rindge

Plate 3, figure 4, plate 7, figure 3, plate 13, figure 3

*Stenoporpia asymmetra* RINDGE, 1959, p. 15, figs. 12, 13 (male and female genitalia).

This species can be distinguished from the two preceding species by its unicolorous gray or grayish brown coloration and indistinct maculation. The forewings are relatively short and broad, and vary from 17 to 20 mm. in length in the male, and from 19 to 20 mm. in the female. The hind tibia of the male has a small hair pencil. The male antennae are of approximately 49 segments, with the terminal one-sixth to one-eighth simple.

Because very little additional material has come to hand since the publication of the

original description, the species is not re-described.

The asymmetrical costal arms are the character by which it is easiest to recognize the male genitalia of this species. The left arm is slightly longer than the valve, whereas the right arm is shorter; both arms have an elongate area of thickly set, short spines extending from the apex down the outer edge. The aedeagus is from 1.2 to 1.3 mm. in length, and it is equal to the combined lengths of the tegumen and saccus.

The female genitalia of *asymmetra* can be recognized by the fact that the elliptical sclerotized sterigma has a large, rounded, and smoothly sclerotized median area, which extends laterally as some sclerotized ridges. The ductus bursae is sclerotized, short, and almost square in outline; the dorsal folds do not unite anteriorly. The corpus bursae has an elongate striated neck that gradually widens into the anterior portion. The signum is dorsal, with the anterior margin thickened and shortly stellate, and the flat central area has several irregular, narrow ridges. The posterior apophyses are 1.7 mm. in length, and the anterior apophyses are almost 1.0 mm long.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** The holotype, male, and allotype, female, are in the collection of the American Museum of Natural History. The genitalia of the former are mounted on slide F.H.R. No. 8371; of the latter, on slide F.H.R. No. 8916.

**TYPE LOCALITY:** Pinery Canyon, Chiricahua Mountains, Cochise County, Arizona.

**DISTRIBUTION:** This species is known only from southeastern Arizona (see fig. 1).

**TIME OF FLIGHT:** The moths have been caught in the months of March, June, July, and September.

**REMARKS:** Forty-seven specimens (42 males and five females) and eight genitalic dissections (five males and three females) have been studied.

#### *Stenoporpia dionaria* (Barnes and McDunnough)

Plate 3, figure 5, plate 7, figure 4, plate 13, figure 4

*Cleora (Selidosema) dionaria* BARNES AND MCDUNNOUGH, 1918, p. 153, pl. 20, fig. 6 (lecto-type male).



*Stenoporpia dionaria*: McDUNNOUGH, 1920, p. 25, pl. 4, fig. 2 (male genitalia); 1938, p. 164. RINDGE, 1959, p. 15.

The adults of *dionaria* closely resemble those of *asymmetra*, and both species occur in southern Arizona. The present species is larger than *asymmetra*, the forewings are more elongate, and the color of the upper surface of the wings is slightly paler.

**MALE:** Head with vertex white or whitish gray, with scattered blackish brown scales; front white or whitish gray, with median portion variable, from having broad black band to scattered gray and grayish black scales; antennae of approximately 55 segments, with terminal one-fifth simple; palpi black or grayish black, with some pale scaling on first segment. Thorax whitish gray above, with variable number of grayish brown and grayish black scales, dark scales tending to be more numerous at end of collar; below white or whitish gray; forelegs and middle legs grayish black on outer surfaces; hind legs with small hair pencil, and with variable amount of dark scaling; all legs with narrow paler margins on ends of tarsal segments. Abdomen whitish gray above, more or less heavily overlain with grayish brown or grayish black scales; paler below.

**UPPER SURFACE OF WINGS:** Forewings whitish gray, variably and evenly overlain with dark gray, grayish brown, and grayish black scales; veins faintly ochraceous; cross lines weakly represented, grayish black in color; basal, t. a., and median lines represented by costal spots, a few dark scales on veins, and by partial lines above inner margin; discal spot large, round, with variable number of pale scales in center; t. p. line more prominent than others, represented by costal and venular spots, latter often connected by slender, concave line; t. p. line tending to be shaded outwardly by more or less complete, broad, grayish black band, strongest in cells  $M_1$  and  $M_2$ , and above anal margin; subterminal area tending to be slightly darker than remainder of wing; s. t. line white, narrow, inwardly projecting on veins; terminal line variably represented, dark gray or grayish brown, broadly interrupted by veins, and with prominent, black intravenular spots; fringe concolorous with wing, broadly interrupted by grayish white at vein endings. Hind

wings concolorous with forewings; maculation as on forewings, with weakly defined intradiscal line and complete extradiscal line; discal spot prominent, larger than on forewing, hollow; subterminal area broad, with s. t. line, terminal line, and fringe similar to those of forewings.

**UNDER SURFACE OF WINGS:** Light gray, with considerable grayish brown scaling on forewings; latter with incomplete t. p. line and broad, dark, subterminal band in most specimens; hind wings with incomplete extradiscal line and with or without narrower subterminal band; discal dots and terminal lines present on all wings; fringe light gray.

**LENGTH OF FOREWING:** 19 to 23 mm.

**FEMALE:** Similar to male, but upper surface tending to be slightly paler and maculation slightly more clearly defined.

**LENGTH OF FOREWING:** 20 to 25 mm.

**MALE GENITALIA:** Uncus broad, triangular, apical portion slightly attenuate and curved ventrally, broader on inner surfaces than along posterodorsal ridge, and tip of apex truncate, terminal points absent or weakly represented; gnathos with large, smoothly sclerotized, capitate median enlargement; valves bluntly pointed apically; costa heavily sclerotized, enlarged median valvular area extending across most of inner face of valve; costal arm almost reaching end of valve, approximately 0.5 mm. in length, extending parallel with costal margin after narrowing from shoulder, apex rounded and having from four to six heavy, closely set, dorsally curving spines on posterodistal margin; cristae slender, long, and numerous, situated in large, conspicuous patch on each side of slender anellus; aedeagus 1.8 to 2.0 mm. in length, longer than combined lengths of uncus, tegumen, and saccus, with posterior end sclerotized and pointed; vesica armed with small, irregularly sclerotized area, 0.25 to 0.30 mm. in length.

**FEMALE GENITALIA:** Sterigma with many small, sclerotized, transverse ridges; anterolateral areas sclerotized, large, broadly V-shaped, extending anteriorly to middle of sclerotized portion of ductus bursae; latter with posterior portion sclerotized, with dorso-lateral folds extending to anterior margin of sclerotized area and uniting, deeply V-shaped, and with anterior portion membranous,

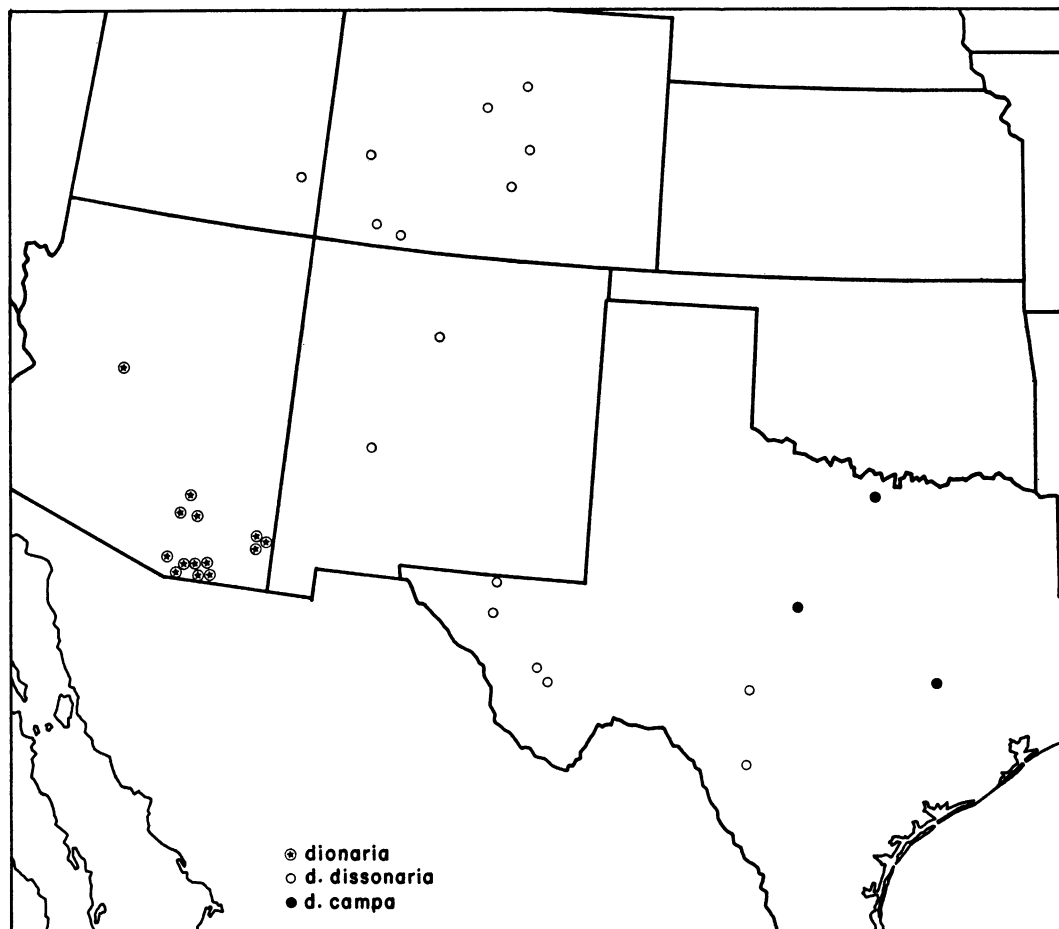


FIG. 2. Distribution of *Stenoporpia dionaria* (Barnes and McDunnough) and *S. dissonaria* (Hulst).

weakly constricted medially and joining corpus bursae dorsally, ductus seminalis arising ventroposteriorly on corpus bursae near posterior end; corpus bursae elongate, posterior portion narrow, weakly laterally compressed, with longitudinal striations, and shorter anterior portion swollen; signum dorsal, ovate, with stellate lateral and anterior margins, and variable number of small points in median area; apophyses posteriores 1.8 to 2.1 mm. in length; apophyses anteriores 1.1 to 1.3 mm. in length.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: This species was described from four male and one female specimens; all are now in the collection of the United States National Museum. The lectotype is hereby

designated as the male labeled and figured by the authors as the "type ♂." Its genitalia are mounted on slide E.L.T. No. 921.

TYPE LOCALITY: Palmerlee, Cochise County, Arizona.

DISTRIBUTION: Southeastern Arizona (see fig. 2). In the material studied there is one specimen labeled "So. Cala. Poling," and another "Beaver Canyon, Utah"; these are considered as dubious locality records.

TIME OF FLIGHT: Apparently this species is at least double-brooded, as the adults have been taken from late April into October.

REMARKS: A total of 147 specimens (77 males and 70 females) and 14 genitalic dissections (10 males and four females) have been studied, including all the original type series.

The adults are rather variable in coloration, particularly on the under surface of the wings. Specimens vary from being almost immaculate below to having a broad, heavy, grayish black subterminal band on all wings.

The male genitalia of *dionaria* are of approximately the same size as those of *asym-*

*metra*; the structures of the present species can be recognized by the symmetrical costal arms.

The female genitalia of this taxon, on the other hand, are larger than those of *asym-metra*. The transverse ridges of the sterigma can be utilized to identify the present species.

## GROUP II

The species of this group can be recognized by the narrower, more elongate wings, moderate size, the fact that the upper surface of the wings is pale gray (rarely heavily suffused with black), with black maculation, and by the presence of small, solid, discal dots on all wings. Three of the four species have the tibial hair pencil in the male.

The male genitalia are distinguished by a narrow, curved uncus; the vesica may or may not have a small sclerotized piece.

The female genitalia have an unmodified intersegmental membrane anterior of the sterigma. The latter is not surrounded by concentric ridges.

Four species are placed in this group: *polygrammaria*, *mediatra*, *dissonaria*, and *anastomosaria*.

### *Stenoporpia polygrammaria* (Packard)

Plate 3, figure 6, plate 8, figure 1, plate 13, figure 5

*Cymatophora polygrammaria* PACKARD, 1876, p. 439, pl. 11, fig. 19 (male). GROTE, 1882, p. 49. BEUTENMÜLLER, 1890, p. 222.

*Boarmia polygrammaria*: ANON, 1882, p. 24. SMITH, 1891, p. 72.

*Cleora polygrammaria*: GUMPPENBERG, 1892, p. 315. DYAR, "1902" [1903], p. 326 (synonym of *indicataria* Walker). SMITH, 1903, p. 77. BARNES AND McDUNNOUGH, 1917a, p. 117.

*Selidosema polygrammaria*: PEARSALL, 1906, p. 179.

*Stenoporpia polygrammaria*: McDUNNOUGH, 1920, p. 25, pl. 4, fig. 9 (male genitalia); 1938, p. 164. FORBES, 1928, p. 602.

*Glena (Stenoporpia) polygrammaria*: FORBES, 1948, p. 55.

*Cleora pampinaria* BARNES AND McDUNNOUGH (nec Guenée), 1912, p. 19, pl. 8, fig. 6 (male).

This species can be recognized by its distribution, as it is the only species in the genus

that occurs in eastern North America, and by the fact that the rather narrow t. p. line is enlarged on the veins, and that these enlargements project outwardly from the line itself.

MALE: Head with vertex having mixture of whitish gray and grayish brown scales, latter tending to be concentrated between antennal bases; front black or grayish black, with narrow pale gray band across bottom; palpi black or grayish black, with paler scaling on first segment. Thorax whitish gray above, with scattered grayish brown scales, latter tending to be concentrated at end of collar and near end of thorax; below whitish gray; forelegs and middle legs dark brownish gray on outer surfaces, pale gray beneath; hind legs covered with mixture of brown and pale gray scales, with small tibial hair pencil; all tarsi brown, with narrow pale gray margins at ends of segments. Abdomen pale gray above, with numerous dark gray and dark brownish gray scales, the last tending to be concentrated on posterior margins of segments to produce transverse bands; paler below.

UPPER SURFACE OF WINGS: Forewings whitish gray, with scattered dark gray, brownish gray, and grayish black scales, these tending to be concentrated in outer portion of wing; cross lines more or less completely represented, black or brownish black in color; basal line represented by small costal spot; t. a. and median lines running obliquely outward to radial vein, then sharply angled posteriorly and becoming fainter except for spots on veins; median line passing through, or outside, small discal dot, and lying close to t. p. line in lower part of wing; t. p. line more prominent than other lines, broadly outcurved from costa, then paralleling outer margin, enlarged on veins as dashes, and tending to be more or less concave in cells; t. p. line shaded outwardly by broad

grayish brown band; s. t. line white, scalloped; terminal area darker than subterminal area in most specimens; terminal line black or brownish black, narrow, more or less narrowly interrupted by veins, and with small intravenular spots; fringe light gray with some brown scaling. Hind wings concolorous with forewings; maculation as on forewings, with more or less complete intradiscal line and stronger, more complete, almost straight extradiscal line; discal spot present; outer portion of wing similar to that of forewing.

**UNDER SURFACE OF WING:** Pale gray, with considerable brownish gray scaling on forewings; latter with or without faint traces of outer cross lines, and with rather nebulous, darker, subterminal band except at apex; hind wings with less maculation; discal dots and dark terminal lines present on all wings; fringes white.

**LENGTH OF FOREWING:** 16 to 19 mm.

**FEMALE:** Similar to male, tending to be more contrastingly colored and to have cross lines more strongly indicated; under surface with more brown scaling.

**LENGTH OF FOREWING:** 18 to 19 mm.

**MALE GENITALIA:** Uncus elongate, apical portion attenuate and curved ventrally, tip of apex with small terminal points; gnathos attenuate, with elongate, bluntly pointed, median enlargement; valves rounded apically; costa heavily sclerotized, massive; costal arm broad, reaching as far as, or slightly beyond, apex of valve, approximately 0.45 mm. in length, and extending parallel with costal margin after narrowing from shoulder; apex rounded and having many short fine spines on apex and fewer, thicker spines extending down median margin of arm; cristae represented by a few inconspicuous setae at base of each valve; anellus elongate, very slender; aedeagus 2.0 to 2.1 mm. in length, approximately equal to combined lengths of tegumen and saccus, with posterior end pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma a membranous, elongate, longitudinal ellipse, lateral and posterior areas extended and weakly crenulate; ductus bursae having elongate, membranous posterior area, a smaller, sclerotized, median section with dorsolateral folds, and membranous anterior section joining corpus bursae posterodorsally; duc-

tus seminalis arising from posteroventral section of corpus bursae; latter with posterior end scarcely striate, enlarging into swollen anterior section; signum dorsal, transverse, roughly elliptical, V-shaped in cross section, with posterior portion smoothly sclerotized, slightly longer than anterior part, and with rounded margin; apophyses posteriores 2.0 mm. in length; apophyses anteriores 1.3 mm. long.

**EARLY STAGES:** Undescribed.

**FOOD PLANT:** A specimen from Spy Hill, Saskatchewan has been reared from bur oak (*Quercus macrocarpa* Michaux).

**TYPES:** Packard apparently described this species from two males, although he cited four localities in the original description. Three of the latter are in Massachusetts (Amherst, Boston, and Cambridge) and the last is given as New Jersey. The two males are M.C.Z. No. 14622. The specimen that has the handwritten type label is herein designated the lectotype.

**TYPE LOCALITY:** Amherst, Hampshire County, Massachusetts.

**DISTRIBUTION:** This species is widely distributed over the northeastern portion of North America (see fig. 3). It ranges from the mountains of North Carolina north to Maine (Forbes, 1948, p. 55), west to Saskatchewan and Minnesota, and south to Missouri.

**TIME OF FLIGHT:** The adults have been captured from late May to early July.

**REMARKS:** Forty-six specimens (43 males and three females) and 10 genitalic dissections (nine males and one female) have been studied, including both of Packard's types.

This species is usually poorly represented in collections, notwithstanding its wide distribution, possibly partly because of the early time of flight of the adults.

The adults are rather variable in maculation, particularly with respect to the strength of the cross lines of the forewings. These vary from being almost completely absent to strongly represented.

The male genitalia of *polygrammaria* can be recognized by the broad costal arm with the spines extending from the apex down the median margin.

The female genitalia can be recognized by the configuration of the sterigma.

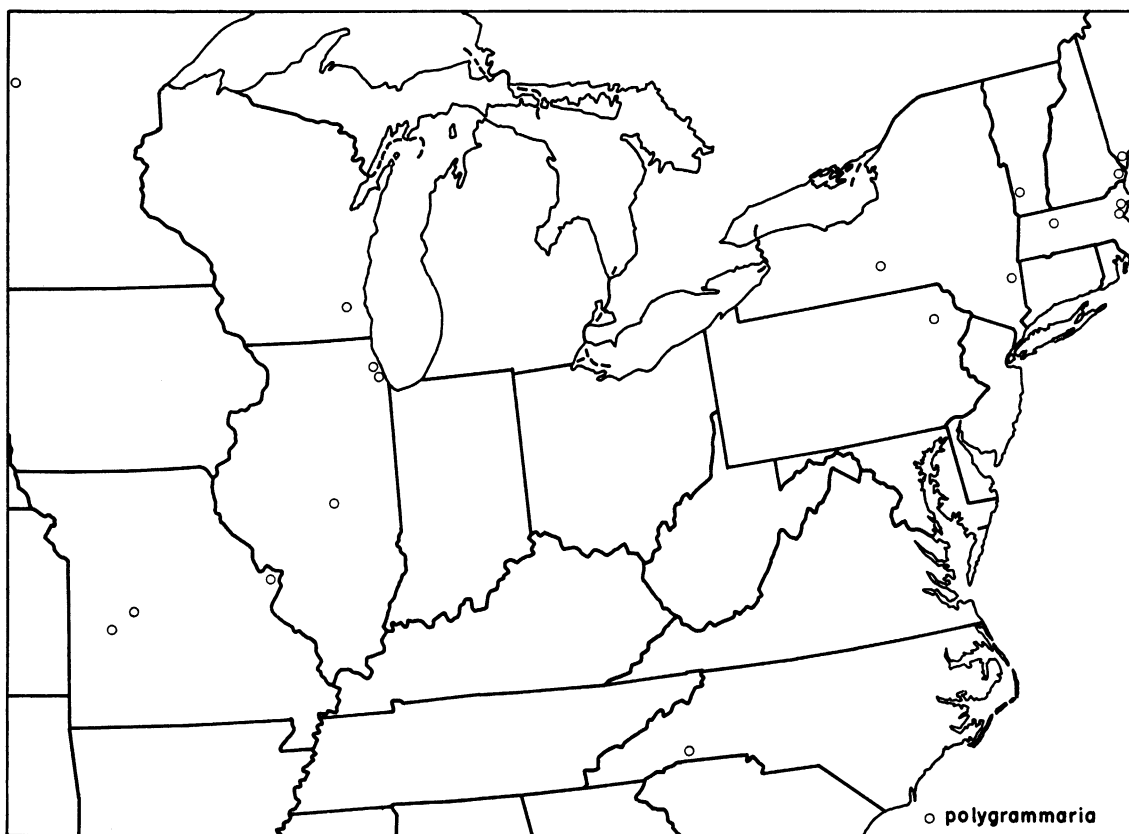


FIG. 3. Distribution of *Stenoporpia polygrammaria* (Packard) in the United States.

***Stenoporpia mediatra* Rindge**

Plate 3, figure 7, plate 8, figure 2, plate 13,  
figure 6

*Stenoporpia mediatra* RINDGE, 1958, p. 19, figs. 7 (paratype male), 18–20 (male and female genitalia).

This distinctive species can be recognized by the black suffusion of the median area of the upper surface of the forewings. The male hind tibia does not have a hair pencil. The length of the forewing of the male varies from 16 to 19 mm.; of the female, from 18 to 19 mm.

As virtually no additional material has come to hand since the original description was published, the species is not redescribed.

The male genitalia of this species have a sharply curved uncus, a rather elongate gnathos with a bluntly rounded median enlargement, and well-sclerotized costal arms. The apical section of the latter are about 0.4

mm. in length, and the rounded area of the tip is covered with eight or more short spines that are directed obliquely outward. The aedeagus is 2.0 mm. in length, which makes it equal to the combined lengths of the tegumen and saccus. The vesica is armed with a very small, irregularly sclerotized piece about 0.1 mm. in length.

The female genitalia have an elongate and slender sterigma that posteriorly is weakly sclerotized, and anteriorly has some longitudinal striations that extend into the opening of the ductus bursae. The latter has a short sclerotized area, the dorsal folds of which do not unite dorsally. The corpus bursae has a stocky neck and a broadly enlarged anterior portion. The signum is ovate, with the anterior margin thickened and shortly stellate; the central area is flat. The posterior apophyses are 2.1 mm. in length; the anterior apophyses, 1.4 mm.

EARLY STAGES: Unknown.



FOOD PLANT: Unknown.

TYPES: The holotype, male, and allotype, female, are in the collection of the Los Angeles County Museum of Natural History. The genitalia of the former are mounted on slide F.H.R. No. 7279; of the latter, on slide F.H.R. No. 7308.

TYPE LOCALITY: Upper camp, Pinery Canyon, Chiricahua Mountains, Cochise County, Arizona.

DISTRIBUTION: This species is known only from southeastern Arizona (see fig. 6).

TIME OF FLIGHT: The adults have been taken in late June and early July.

REMARKS: Twenty specimens (18 males and two females) and five genitalic dissections (three males and two females) have been studied.

***Stenoporpia dissonaria* (Hulst)**

*Alcis dissonaria* HULST, 1896, p. 345.

This gray or grayish black species is divided into two subspecies. The paler, nominate population extends from Colorado into western Texas, whereas the darker population occurs in north central Texas.

***Stenoporpia dissonaria dissonaria* (Hulst)**

Plate 3, figure 8, plate 8, figure 3, plate 13, figure 7

*Alcis dissonaria* HULST, 1896, p. 345. DYAR, "1902" [1903], p. 321. SMITH, 1903, p. 76. RINDGE, 1955, p. 141.

*Cleora dissonaria*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia dissonaria*: McDUNNOUGH, 1920, p. 25, pl. 4, fig. 4 (male genitalia), pl. 8, fig. 8 (male); 1938, p. 164.

*Stenoporpia elena* CASSINO, 1927, p. 77. McDUNNOUGH, 1938, p. 164. New Synonymy.

*Parapheromia cassinoi* McDUNNOUGH, 1927, p. 277 (*partim*).

The nominate population is pale gray on the upper surface of the wings and has a strong, smoothly curved t. p. line. It occurs from Colorado into western Texas.

MALE: Head with vertex white, a row of black or brownish black scales between antennal bases; front white, with black or brownish black band of variable thickness across middle; palpi brownish black, slightly paler on first segment. Thorax white above, with variable number of dark grayish brown

and black scales, dark scales tending to be concentrated at end of collar and as narrow band across posterior portion of patagia and thorax; below grayish black anteriorly, becoming whitish posteriorly; legs with mixture of brownish gray and pale gray scales, forelegs and middle legs darker than hind leg; tarsi dark, with pale gray bands at ends of segments; hind tibia with hair pencil. Abdomen whitish gray above with numerous dark grayish brown and black scales, last tending to be concentrated on posterior margin of each segment to form narrow band; paler below.

UPPER SURFACE OF WINGS: Forewings grayish white, with numerous dark gray, brownish gray, and brownish black scales; cross lines black, t. p. line most prominent; t. a. line broadly curved into cell from costa, then subparalleling costa to inner margin, and shaded on inner side by grayish black band; median line obsolescent in upper part of wing, curving around small discal spot, approaching t. p. line in lower portion of wing; t. p. line obsolescent anteriorly, in many specimens originating on vein  $M_1$ , extending in evenly rounded and slightly sinuous course to middle of inner margin; t. p. line shaded distally by more or less prominent grayish black band, this becoming wider and somewhat diffuse anteriorly opposite cell, and extending to outer margin; subterminal area narrowly darkened, particularly in lower portion of wing; s. t. line whitish, scalloped, represented in lower part of wing; terminal area dark gray from vein  $R_5$  to outer angle; terminal line narrow, black, and with black intravenular spots; fringe concolorous with wing, narrowly paler opposite veins. Hind wings concolorous with forewings but anterior portion slightly paler; maculation as on forewings, with incomplete intradiscal line and with geminate extradiscal line not attaining costal margin; discal spot small; outer portion of wing similar to that of forewing except for straight s. t. line.

UNDER SURFACE OF WINGS: Grayish white, forewings heavily suffused with brownish gray scales; cross lines absent or, rarely, weakly indicated; discal spots small, present on all wings; nebulous subterminal band present on apical portion of forewings in a few specimens; terminal line brownish black,

complete; fringe white or grayish white basally, with brownish gray scales distally.

LENGTH OF FOREWING: 15 to 18 mm.

FEMALE: Similar to male; under surface tending to have heavier suffusion of dark scales on hind wings.

LENGTH OF FOREWING: 15 to 18 mm.

MALE GENITALIA: Uncus triangular, apical region somewhat attenuate and gently curved ventrally, tip of apex with two points; gnathos attenuate, with elongate, bluntly pointed median enlargement; valves rounded apically; costal arm not attaining apex of valve, approximately 0.3 mm. in length, extending parallel with costa after leaving well-defined shoulder; apex outwardly curved and having from three to five closely set, outwardly directed spines; cristae obsolescent; anellus elongate, very slender; aedeagus about 2.0 mm. in length, longer than combined lengths of tegumen and saccus, posterior end pointed; vesica unarmed.

FEMALE GENITALIA: Sterigma a weakly sclerotized, elongate, longitudinal ellipse; ductus bursae with triangular, membranous posterior area, a smaller, sclerotized median section with dorsolateral folds, and with membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising on right side of posteroventral section of corpus bursae; latter relatively short, with narrower, slightly curved, longitudinally striate posterior portion, and swollen anterior section; signum dorsal, transverse, roughly elliptical, V-shaped in cross section, posterior portion smoothly sclerotized, longer and with rounded margin; apophyses posteriores 1.6 to 1.8 mm. in length; apophyses anteriores 1.0 to 1.1 mm. long.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Hulst did not specify either the number of specimens or their sex when he described *dissonaria*; he had more than one specimen because he indicated a wing expanse of from 35 to 38 mm. Three specimens, all males, that bear Hulst's type label for this species have been examined. Two are in the collection of the United States National Museum, and one is in the American Museum of Natural History (Rindge, 1955, p. 141). The last specimen is hereby designated as the

lectotype; its genitalia are mounted on slide F.H.R. No. 14251.

Of *elena*, the holotype, male, and allotype, female, are M.C.Z. No. 16946. In the original description it is stated that the holotype was caught "Sept. 1-7"; the specimen bearing the holotype label has a rather illegible date, but it might be June 1-15. The genitalia of the type may have been dissected, but there is no slide number. It was also stated that there were 14 paratypes from Alpine, Texas. There are 23 males labeled paratype in the collection of the Museum of Comparative Zoology, as well as others in the American Museum of Natural History and the United States National Museum.

The male paratype of *Parapheromia casinói* McDunnough from Alpine, Texas, in the Museum of Comparative Zoology, also belongs to *dissonaria*.

TYPE LOCALITIES: Colorado (*dissonaria*); Alpine, Brewster County, Texas (*elena*).

DISTRIBUTION: Colorado, southeastern Utah, New Mexico, and western and central Texas (the Trans-Pecos area and the Edwards Plateau). (See fig. 2.)

TIME OF FLIGHT: The adults have been captured in late May, June, and July in the Rocky Mountain states, and in March and May into early September in Texas.

REMARKS: A total of 125 specimens (117 males and eight females) and 37 genitalic dissections (33 males and four females) have been studied, including the type series of both names.

There is some individual variability in the strength and the course of the t. p. line. It ranges from being slender to fairly thick, and in some specimens the line is enlarged on some of the veins. In course it varies from being almost straight to noticeably concave in the lower portion of the wing.

The male genitalia of *dissonaria* can be separated from those of *mediatra* by the fact that the vesica is unarmed, the uncus is less sharply curved, and the costal arms are shorter and have fewer spines at the apex.

The female genitalia are similar to those of *margueritae*. The structures of the present taxon can be recognized by the more elongate ellipse of the sterigma, and by the fact that the signum is more V-shaped in cross section.

Specimens from Brewster and Jeff Davis counties of western Texas have been placed under the name *elena* Cassino. Old specimens appear slightly browner than typical examples, but the few freshly caught moths that have been studied do not. The latter agree closely with a series of moths recently captured in central New Mexico by the author, as do Texas specimens from the more level country to the east of the Davis Mountains, as examples from Kimball and Uvalde counties fit in with typical *dissonaria*. For this reason the name *elena* is placed in synonymy.

***Stenoporpia dissonaria campae*, new subspecies**

Plate 3, figure 9

In the Blackland Prairies of central and northeastern Texas a much darker-colored population of *dissonaria* occurs; it tends to have an inward bend in the t. p. line above the inner margin of the forewings.

**MALE:** Similar to nominate *dissonaria* but differing mainly as follows: upper surface of wings and body heavily suffused with brownish black and black scales; median and intradiscal lines tending to be more strongly represented; t. p. line tending to have inward bend above inner margin, and shaded outwardly by prominent black, or blackish gray band; s. t. line appearing more prominent owing to darker wing; under surface with more dark scaling.

**LENGTH OF FOREWING:** 14 to 17 (holotype) mm.

**FEMALE:** Similar to male.

**LENGTH OF FOREWING:** 17 mm. (allotype) to 18 mm.

**MALE GENITALIA:** Similar to those of nominate *dissonaria*.

**FEMALE GENITALIA:** Similar to those of nominate *dissonaria*.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, and allotype, female, Lake Brownwood State Park, Brown County, Texas, April 20-21, 1966 (A. and M. E. Blanchard). The genitalia of the holotype are on slide F.H.R. No. 13879, and of the allotype on slide F.H.R. No. 14254. Paratypes: Same data as types, seven males; Forestburg, Montague County, Texas, Au-

gust 16, 18, 1941 (L. H. Bridwell), one male, one female; College Station, Brazos County, Texas, August-September, 1953 (P. Glick), one male.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution, of A. Blanchard, and of C. W. Kirkwood.

**DISTRIBUTION:** The Blackland Prairies of central and northeastern Texas.

**TIME OF FLIGHT:** The adults have been captured in April and August.

**REMARKS:** Eleven specimens (nine males and two females) and five genitalic dissections (four males and one female) have been studied.

Based on maculation, the members of this population are somewhat intermediate between nominate *dissonaria*, with its evenly curved t. p. line, and *anastomosaria*, with a definite basal bend above the inner margin of the t. p. line. Specimens of *campae* can be recognized by the prominent shade band distad of the t. p. line, by their distribution, and by their genitalia.

One is tempted to speculate whether or not this population originally arose as a hybrid between *dissonaria* and *anastomosaria*. Both these species occur together today in western Texas, but *campae* is now isolated geographically from both.

***Stenoporpia anastomosaria* (Grossbeck)**

Plate 3, figure 10, plate 8, figure 4, plate 13, figure 8

*Selidosema anastomosaria* GROSSBECK, 1908, p. 29.

*Cleora anastomosaria*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia anastomosaria*: McDUNNOUGH, 1920, p. 25, pl. 4, fig. 5 (male genitalia), pl. 7, fig. 14 (male); 1938, p. 164.

*Stenoporpia elena* CASSINO, 1927, p. 77 (*partim*).

This species is closely allied to *dissonaria* but can be separated from the latter by the more irregular course of the t. p. line. This moth occurs from southern California into western Texas and Chihuahua.

**MALE:** Head, thorax, and abdomen similar to those of *dissonaria*; hind tibia with hair pencil.

UPPER SURFACE OF WINGS: Forewings grayish white, with variable number of dark gray, brownish gray, and brownish black scales, wings varying in color from pale gray to grayish black; cross lines black, dentate, tending to be thicker on veins, and with t. p. line most prominent; t. a. line going at angle to costa into cell, then angled posteriorly across wing and curving basally above inner margin, and shaded on inner side by grayish black band in some specimens; median line varying from being complete to obsolescent in upper portion, either curving around discal dot or passing through it, uniting with t. p. line near anal vein, then swinging basally to inner margin; t. p. line complete, evenly curved in anterior part of wing, slightly sinuous across middle of wing, concave between veins, with deep basal bend above anal vein; t. p. line with or without narrow, dark, distal shade band; subterminal area tending to have diffuse pale area in center in lower portion of wing; s. t. line whitish, scalloped, complete in most specimens; terminal area concolorous with subterminal area; terminal line black, narrow, interrupted by veins, and with black intravenular spots; fringe white basally and opposite veins, darker distally. Hind wings concolorous with forewings but anterior portion slightly paler; maculation as on forewings, with incomplete intradiscal line and weakly dentate extradiscal line; discal spot small; outer portion of wing similar to that of forewing except for straighter s. t. line.

UNDER SURFACE OF WINGS: Whitish gray, more or less heavily and evenly suffused with dark gray scales; cross lines and discal dots weakly indicated; small, nebulous, subterminal band on apical portion of forewings in some specimens, outlining paler apex; terminal line brownish black, complete; fringe white or grayish white, slightly darkened apically in some specimens.

LENGTH OF FOREWING: 16 to 21 mm.

FEMALE: Similar to male, but tending to be more heavily suffused with dark scales, some specimens appearing brownish black.

LENGTH OF FOREWING: 16 to 20 mm.

MALE GENITALIA: Similar to those of *dissonaria* but differing mainly as follows: uncus tending to be slightly more curved; arm of valve slightly longer after leaving less well-developed shoulder, about 0.4 mm. long, with from five to 10 closely set, outwardly

directed spines; aedeagus 1.9 to 2.1 mm. in length; vesica usually with short sclerotized piece, 0.1 to 0.2 mm. in length.

FEMALE GENITALIA: Sterigma weakly sclerotized, long and slender; ductus bursae with membranous posterior section, a short, weakly sclerotized median area with broadly sclerotized dorsolateral folds, and membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising on right side of corpus bursae posteriorly; corpus bursae relatively short and broad, with narrow, weakly longitudinally striate or smooth posterior portion, and swollen anterior section; signum large, dorsal, transverse, elliptical, anterior margin projecting into corpus bursae at approximate right angle, posterior portion smoothly sclerotized; apophyses posteriores 1.8 to 2.4 mm. in length; apophyses anteriores, 1.0 to 1.3 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Grossbeck deposited his type male in the collection of the Brooklyn Institute Museum. It is now U.S.N.M. No. 34260, and its genitalia are mounted on slide E.L.T. No. 2365.

In Cassino's type series of *elena* there was one male paratype from Hereford, Arizona; this specimen is referable to *anastomosaria*.

TYPE LOCALITY: Palmerlee, Cochise County, Arizona.

DISTRIBUTION: This species occurs in the southwestern United States and northern Mexico (see fig. 4). It ranges from California (the mountains of Riverside and San Bernardino counties and up the coast to Monterey County) across the southern portion of both Arizona and New Mexico and into the Davis Mountain area of western Texas. In Mexico it has been taken in the state of Chihuahua. With regard to altitude, the species occurs from near sea level up to 8500 feet.

TIME OF FLIGHT: The adults have been taken from mid February into September, which probably indicates at least two generations a year, one in the spring and the second during summer months.

REMARKS: A total of 623 specimens (451 males and 172 females) and 44 genitalic dissections (33 males and 11 females) have been studied, including all of Grossbeck's type material.

The adults of *anastomosaria* are quite sim-

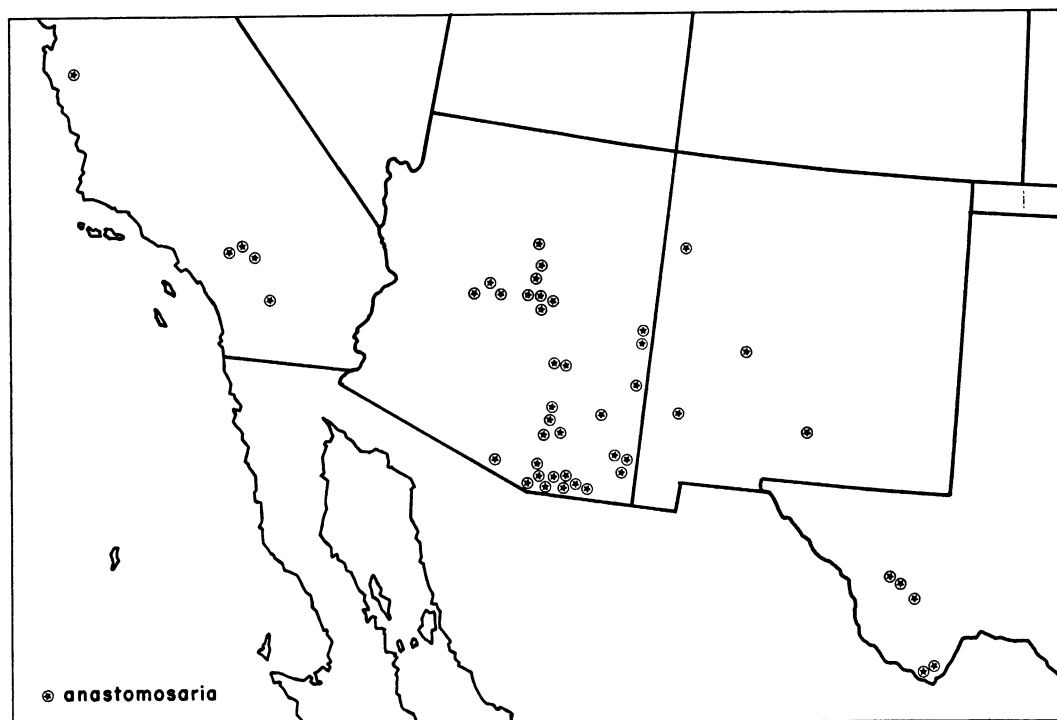


FIG. 4. Distribution of *Stenoporpia anastomosaria* (Grossbeck) in the United States.

ilar to those of *dissonaria*. The moths of the present species can be recognized by the fact that the more sinuous t. p. line is concave between the veins, by the less prominent shade lines to the t. a. and t. p. lines, and by the fact that the median line tends to merge with the t. p. line in the lower portion of the wing.

The male genitalia of *anastomosaria* can usually be separated from those of *dissonaria* by the sclerotized piece in the vesica. In addition, the costal arm of the present taxon is slightly longer, it has a less well-developed shoulder, which is usually sloping instead of angulate, and the tip of the apex tends to have more spines.

The female genitalia of *anastomosaria* can be separated from those of *dissonaria* by the more elongate sterigma, with a shorter ellip-

tical median area, and by the larger signum.

There is considerable variation in the color of the upper surface of the wings in *anastomosaria*. Most male examples are pale gray, but some are more or less heavily suffused with grayish brown and grayish black scales. These latter examples are much darker in color, and they occur both in southern Arizona and in western Texas. The same holds true for the females, although they are usually basically darker than the males.

There is also some variation in the strength of the cross lines, particularly on the forewings. The median line varies from being more or less obsolescent, particularly in the upper portion of the wing, to a complete band 1 mm. wide. The other cross lines do not show so great a degree of variability, but they are variable.

### GROUP III

The moths of this group are moderate to large in size, with the upper surface of the wings light to dark gray in color and with well-defined cross lines. The discal dots vary from being obsolescent to small and solid to

a large ringlet. Only one species has the tibial hair pencil in the male.

The male genitalia have a slightly wider and more noticeably attenuate uncus than do the members of group II. All the species of



this group have unarmed vesicas, as do all members of the following groups.

The female genitalia of all species in this unit, and of the following groups, have the intersegmental membrane anterolateral of the sterigma lightly sclerotized and variously swollen or enlarged. The sterigma has many concentric rings.

Four species are placed in this group: *pulmonaria*, *purpuraria*, *noctiluca*, and *serica*.

***Stenoporpia pulmonaria* (Grote)**

*Cymatophora pulmonaria* GROTE, 1881, p. 153 (*nomen nudum*); 1882, p. 49.

This large species occurs in seven subspecific populations in western North America. It can be most easily recognized by a study of the male genitalia.

***Stenoporpia pulmonaria dejecta* (Hulst),  
new combination**

Plate 3, figure 11, plate 8, figure 5, plate 14,  
figure 1

*Alcis dejecta* HULST, 1896, p. 345 (*partim*). DYAR, "1902" [1903], p. 321 (*partim*). SMITH, 1903, p. 76. RINDGE, 1955, p. 141.

*Cleora dejecta*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia dejecta*: McDUNNOUGH, 1920, p. 27, pl. 4, fig. 8 (male genitalia), pl. 8, fig. 12 (male); 1938, p. 164.

This subspecies is large, and the upper surface of the wings has large and prominent discal dots, and both the t. a. and t. p. lines are broadly shaded with reddish brown or dark brown bands. The population occurs from southern California into Oregon and Washington.

**MALE:** Head with vertex grayish white, area between bases of antennae broadly dark brown; front brownish black, with narrow bands of grayish white across top and bottom; palpi grayish brown, with a few scattered dark brown scales. Thorax pale grayish brown above, with end of collar grayish black and narrow grayish black band across patagia and thorax; beneath pale grayish brown anteriorly, becoming grayish white posteriorly; legs pale grayish brown, forelegs and all tarsi tending to be somewhat darker; hind tibia with small hair pencil. Abdomen pale grayish brown above, with numerous dark brownish gray scales except

on first segment, and with black posterior bands on anterior segments; paler below.

**UPPER SURFACE OF WINGS:** Forewings grayish white, with variable number of reddish brown, brownish gray, and blackish brown scales, particularly in basal and outer portions of wing, leaving central area paler and contrasting in color; cross lines black or blackish brown, with t. p. line most prominent; t. a. line making broad loop from costa to swelling on cubital vein, then slightly sinuous to inner margin, and broadly shaded on inner side by reddish brown or dark brown band about 1 mm. in width; median line weakly represented except at costa, curving outwardly around dark, elongate, discal dot, then subparalleling t. p. line to inner margin; t. p. line extending at right angle to costa, then broadly curved and subparalleling outer margin, somewhat sinuous in course, to inner margin, tending to be slightly swollen on anterior veins; t. p. line with broad, somewhat diffuse, distal shade band about 1 mm. in width, tending to be dark brown or grayish brown anteriorly and to become reddish brown above inner margin; subterminal area with rather diffuse grayish white band, and with blackish brown spots in cells  $M_1$  and  $M_2$ ; s. t. line grayish white, tending to be convex between veins; terminal area suffused with dark scales; terminal line narrow, tending to be incomplete, black, interrupted by veins, and with small intravenular spots; fringe with basal portion light gray, becoming grayish brown distally. Hind wings concolorous with forewings, but anterior portion paler; maculation as on forewings, with incomplete, broad, diffuse intradiscal line and darker, sharply defined extradiscal line; discal dot large, elongate, either of solid color or having narrow row of pale scales down middle; outer portion of wing similar to that of forewing.

**UNDER SURFACE OF WINGS:** Unicolorous whitish gray, with faint traces of discal dots, t. p. and extradiscal lines showing in some specimens, and trace of subterminal band near apex of forewing; terminal line narrow, grayish brown; fringe concolorous with wing.

**LENGTH OF FOREWING:** 20 to 23 mm.

**FEMALE:** Similar to male, but with heavier brownish black scaling on upper surface of wings, which, extends in many specimens, across median area at or below discal dot.

LENGTH OF FOREWING: 20 to 23 mm.

MALE GENITALIA: Uncus broad, somewhat constricted posteriorly, apical region attenuate and weakly curved ventrally, tip of apex with two thick points; gnathos elongate, slender, elongate or weakly capitate median enlargement having punctate surface; valves with apex bluntly pointed; costal arm shorter than valve, approximately 0.4 mm. in length, extending either parallel with or converging toward costal margin after leaving well-defined, angular shoulder; apex of arm with distal margin rounded, and armed with from three to six strong spines separated by more than own width, and increasing in size toward apex; cristae in form of large, prominent patch on each side of very slender anellus; aedeagus 2.4 to 2.6 mm. in length, equal to combined lengths of uncus, tegumen, and sacculus, with posterior end lightly sclerotized and pointed; vesica unarmed.

FEMALE GENITALIA: Sterigma with small median area bounded laterally and anteriorly by numerous small ridges, concentric but incomplete posteriorly, becoming attenuate anteriorly and extending into ductus bursae; large anterolateral areas gently swollen, extending anteriorly as far as posterior margin of sclerotized area of ductus bursae; latter with ridges of sterigma almost reaching median sclerotized area, with dorsolateral folds, and with short membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising ventrally from corpus bursae, opposite junction of ductus bursae; corpus bursae elongate, slender, with narrow, gently curved, longitudinally striate posterior portion, and small, swollen anterior section; signum invaginated, small, roughly circular in outline, with weakly stellate anterior margin, and recessed central area that has several irregular ridges; apophyses posteriores 2.0 to 2.5 mm. in length; apophyses anteriores, 1.0 to 1.1 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Hulst had at least two specimens before him when he described *dejecta*, as the type localities in the original description are Los Angeles, California, and Colorado. The whereabouts of the specimen from the latter locality is unknown, although there is a female in the collection of the United States

National Museum with a Hulst type label but without locality data. The specimen from the Hulst collection (Rindge, 1955, p. 141) is a male, and it is hereby designated as the lectotype. It is in the collection of the American Museum of Natural History, and its genitalia are mounted on slide F.H.R. No. 8527.

TYPE LOCALITY: Los Angeles County, California. This is not exactly the same as the locality given in the original description, but Hulst was inclined to be a bit careless with his data. The specimen is labeled as coming from C. V. Riley, and it assuredly was taken in the mountainous regions of the county.

DISTRIBUTION: From the mountains of southern California, north up the Sierra Nevada and Cascade ranges into central and eastern Oregon and Washington (see fig. 5).

TIME OF FLIGHT: The adults have been taken in June, July, August, September, and October.

REMARKS: A total of 158 specimens (118 males and 40 females) and 22 genitalic dissections (12 males and 10 females) have been studied, including the lectotype.

The male genitalia of *pulmonaria* are unique in the genus in possessing the comb-like row of from three to six spines on the posterodistal margin of the costal arm.

The female genitalia of *pulmonaria* can be separated from those of all the preceding species by the invaginated signum. This species is but the second treated that has the prominent anterolateral areas of the sterigma; those of *dionaria* (in group I) are larger than those of this taxon.

The moths of this population are rather uniform in size, color, and maculation. There is some variation in the color of the bands outside the t. a. and t. p. lines within the members of both sexes; these bands in the female are darker and more prominent than in the male.

Specimens from Oregon, Washington, and toward the north tend to get progressively paler and less contrasting in the color of the upper surface of the wings. A clinal variation is indicated, but we do not have enough northern material to prove it. The moths are large, and they retain the reddish brown coloration of the broad bands that are next to the t. a. and t. p. lines; for these reasons they are placed as *dejecta*.

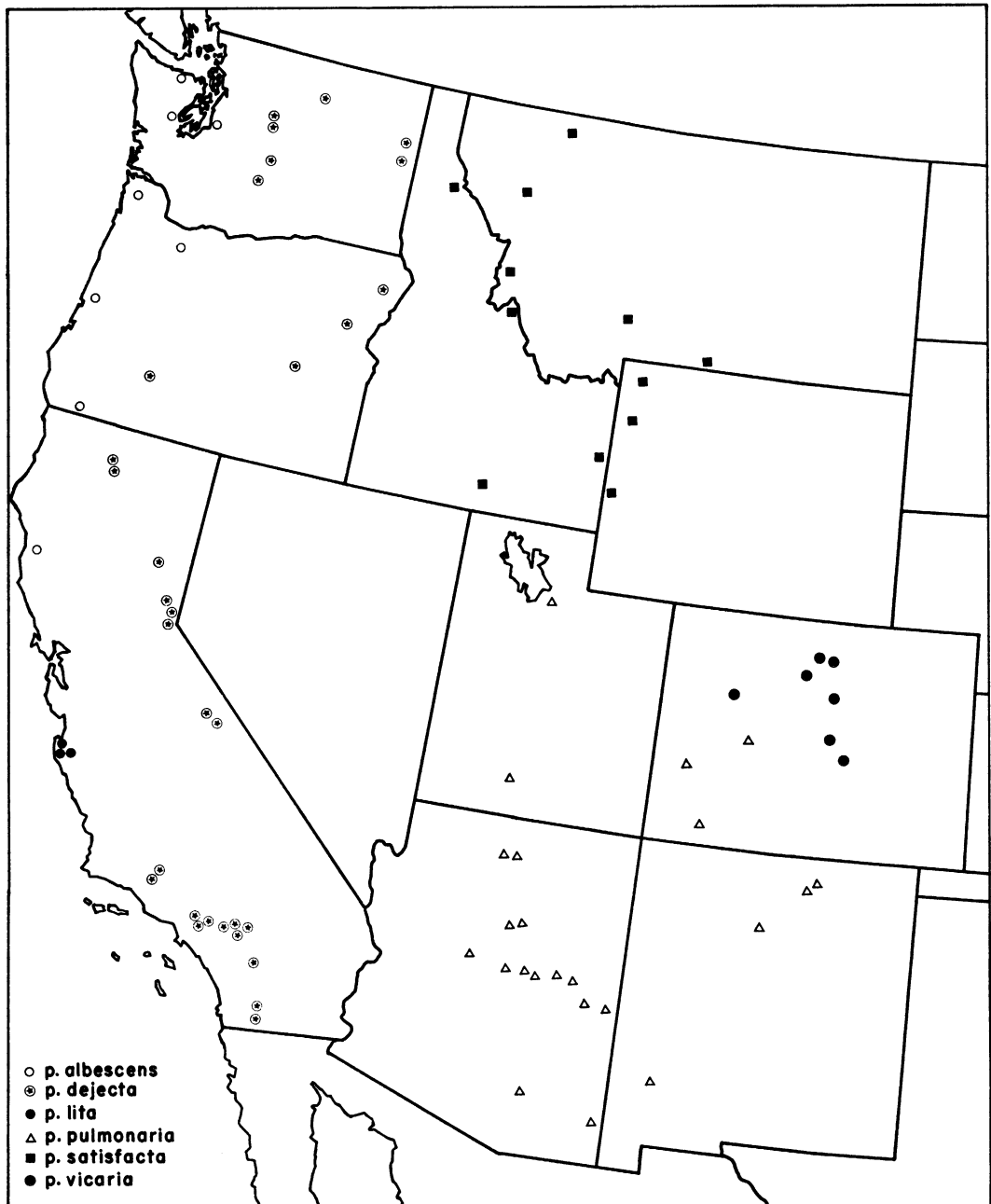


FIG. 5. Distribution of *Stenoporpi pulmonaria* (Grote) in the United States.

***Stenoporpi pulmonaria lita*, new subspecies**

Plate 3, figure 12

The moths of this population are smaller than those of the preceding one, and the upper surface of the wings is a darker, more uniform gray. It occurs in Monterey County, California.

**MALE:** Head with vertex and front, plus upper sides of thorax and abdomen, dull gray; abdomen with very few dark scales above.

**UPPER SURFACE OF WINGS:** Forewings dull gray, only lightly overlain with darker scales, and with median area scarcely differentiated from basal and outer areas; cross lines like those of *dejecta*, with t. a. and t. p. lines more

irregular in course and weakly shaded by grayish brown or reddish brown bands; s. t. line indicated by darker, outer shading of terminal area. Hind wings similar to forewings, with anterior portion concolorous with remainder of wing; maculation similar to that of *dejecta*.

**UNDER SURFACE OF WINGS:** Similar to that of *dejecta*, but slightly darker in color, and virtually without maculation.

**LENGTH OF FOREWING:** 18 to 20 mm.; holotype, 19 mm.

**FEMALE:** Similar to male, but slightly more contrasting in maculation above.

**LENGTH OF FOREWING:** 19 to 22 mm.; allotype, 20 mm.

**MALE GENITALIA:** Similar to those of *dejecta*, but with costal arm tending to be thinner.

**FEMALE GENITALIA:** Similar to those of *dejecta*.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, Pacific Grove, Monterey County, California, June 19, 1947 (A. L. Melander); genitalia mounted on slide F.H.R. No. 8503. Allotype, female, same data, September 29, 1946; genitalia mounted on slide F.H.R. No. 8568. Paratypes, all from California: Between Carmel and Paraiso Springs, Monterey County, November 4, 1939, one male; Carmel, Monterey County, April 4, 1960, October 22, 1963, December 30, 31, 1962 (R. Leuschner), five males, three females; Pacific Grove, Monterey County, February 13, 1947 (F. H. Rindge), one female.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution and of R. H. Leuschner.

**DISTRIBUTION:** This population is known only from Monterey County, California (see fig. 5).

**TIME OF FLIGHT:** The adults have been caught in the months of February, April, June, September, October, November, and December. They are probably on the wing during most of the year.

**REMARKS:** Twelve specimens (seven males and five females) and two genitalic dissections (one male and one female) have been studied.

***Stenoporpia pulmonaria albescens* (Hulst),  
new combination**

Plate 3, figure 13

*Selidosema albescens* HULST, 1896, p. 355. DYAR, "1902" [1903], p. 325. SMITH, 1903, p. 77.

*Cleora albescens*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia albescens*: McDUNNOUGH, 1920, p. 26, pl. 4, fig. 7 (male genitalia), pl. 8, fig. 2 (male); 1938, p. 164. JONES, 1951, p. 131. PRENTICE, 1963, p. 447, fig. 279 (distribution in Canada).

The moths of this population have pale grayish white wings with prominent t. p. and extradiscal lines. The subspecies occurs in the coastal region from northern California to southern Alaska.

**MALE:** Head with vertex and upper surface of thorax and abdomen pale grayish white; thorax with dark brownish gray or blackish gray scales at end of collar and, less numerous, in narrow band across patagia and thorax; abdomen with dark scaling above concentrated mainly on ends of segments to produce bands.

**UPPER SURFACE OF WINGS:** Forewings pale grayish white, with variable number of pale brownish gray and brownish black scales; median area scarcely differentiated from basal and outer areas; maculation similar to that of *dejecta*; t. a. line with weak, nebulous basal shade band; t. p. line prominent, with weak, incomplete, distal, shade band. Hind wings similar to forewings, with anterior portion concolorous with remainder of wing; maculation similar to that of *dejecta*.

**UNDER SURFACE OF WINGS:** Similar to that of *dejecta*, but slightly darker in color, and virtually without maculation.

**LENGTH OF FOREWING:** 18 to 23 mm.

**FEMALE:** Similar to male, but with maculation tending to be slightly more prominent.

**LENGTH OF FOREWING:** 19 to 21 mm.

**MALE GENITALIA:** Similar to those of *dejecta*.

**FEMALE GENITALIA:** Similar to those of *dejecta*.

**EARLY STAGES:** Undescribed.

**FOOD PLANTS:** Various coniferous trees in British Columbia (Prentice, 1963, p. 447). The two that are most commonly preferred are *Tsuga heterophylla* (Rafinesque) Sargent (western hemlock) and *Pseudotsuga menziesii* (Mirbel) Franco (Douglas fir). In addition,

the larvae have been reported on various species of *Abies*, *Picea*, *Pinus*, *Tsuga*, and *Thuja*.

TYPE: Hulst, when describing *albescens*, did not indicate either the number of specimens or their sex. As but a single figure for wing expanse was given, it might be assumed that he had a single specimen. Such is apparently the case, as only one specimen labeled type has been found. The type is a male, and it is in the Illinois Natural History Survey collection, Urbana, Illinois.

TYPE LOCALITY: Seattle, King County, Washington.

DISTRIBUTION: The coastal areas from northern California (Mendocino County) into British Columbia (see fig. 5). One specimen has been examined that is labeled merely "Alaska."

TIME OF FLIGHT: The adults have been taken in July, August, and September.

REMARKS: Thirty-seven specimens (27 males and 10 females) and seven genitalic dissections (six males and one female) have been studied.

***Stenoporpia pulmonaria satisfacta***

(Barnes and McDunnough),  
new combination

Plate 4, figure 1

*Cleora (Selidosema) satisfacta* BARNES AND MCDUNNOUGH, 1917b, p. 244, pl. 25, figs. 1 (lectotype male), 2 (female).

*Stenoporpia satisfacta*: MCDUNNOUGH, 1920, p. 27, pl. 4, fig. 6 (male genitalia); 1938, p. 164. JONES, 1951, p. 131. BOWMAN, 1951, p. 150. PRENTICE, 1963, p. 449, fig. 281 (Canadian distribution).

The members of this population are similar to those of *albescens* but are darker in color and are slightly smaller. This subspecies occurs in the northern Rocky Mountain states and in British Columbia and Alberta.

MALE: Head with vertex, upper surface of thorax, and abdomen grayish white; thorax with brownish gray scales at end of collar and as narrow band across patagia and thorax; abdomen with dark scaling above concentrated mainly on ends of segments to produce bands.

UPPER SURFACE OF WINGS: Forewings grayish white, with numerous brownish gray scales; median area scarcely differentiated from basal and outer areas; maculation simi-

lar to that of *dejecta*; t. a. line with obsolescent shade band; t. p. line prominent, with or without weak shade band; s. t. line prominent. Hind wings similar to forewings, anterior portion concolorous with remainder of wing; maculation similar to that of *dejecta*.

UNDER SURFACE OF WINGS: Similar to that of *dejecta*, with faint trace of t. p. and extradiscal lines indicated.

LENGTH OF FOREWING: 19 to 22 mm.

FEMALE: Similar to male, but tending to have more dark scaling on upper surface of wings.

LENGTH OF FOREWING: 19 to 20 mm.

MALE GENITALIA: Similar to those of *dejecta*.

FEMALE GENITALIA: Similar to those of *dejecta*, but tending to have ridges of sterigma slightly more prominent.

EARLY STAGES: Undescribed.

FOOD PLANTS: This population feeds primarily on *Pseudotsuga menziesii* (Mirbel) Franco (Douglas fir). The caterpillars have also been taken on *Pinus* and *Tsuga* (Prentice 1963).

TYPES: This moth was described and figured from one pair of specimens, both of which are now in the collection of the United States National Museum. The male is hereby designated as the lectotype; its genitalia are on slide No. 64-454.

TYPE LOCALITY: Kaslo, British Columbia.

DISTRIBUTION: This moth occurs in the northern Rocky Mountains, from the southern interior portion of British Columbia and southwestern Alberta (Bowman, 1951, p. 150; Prentice, 1963, p. 449, fig. 281) to Idaho, Wyoming, and Montana (see fig. 5).

TIME OF FLIGHT: The moths have been caught in late June, July, August, and September.

REMARKS: Fifty specimens (39 males and 11 females) and eight genitalic dissections (six males and two females) have been studied, including both of the original type specimens.

***Stenoporpia pulmonaria vicaria*,**  
new subspecies

Plate 4, figure 2

*Alcis dejecta* HULST, 1896, p. 345 (*partim*). DYAR, "1902" [1903], p. 321 (*partim*).

The moths of the population that occur in

central and northern Colorado are slightly darker than those of *satisfacta*, and they have both stronger shade bands to the cross lines and a distinct yellowish brown area across the lower portion of the forewing.

MALE: Head, thorax, and abdomen similar to those of *satisfacta* but tending to be slightly darker on upper surface.

UPPER SURFACE OF WINGS: Forewings grayish white, with numerous brownish gray and grayish black scales; median area slightly paler than basal and outer areas; maculation similar to that of *dejecta*; t. a. and t. p. lines with broad, more or less prominent, grayish black or brownish gray shade bands; s. t. line prominent; lower portion of wing with more or less prominent yellowish brown or faintly reddish brown area extending almost full width of wing. Hind wings similar to forewings, anterior portion concolorous with remainder of wings; maculation similar to that of *dejecta*.

UNDER SURFACE OF WINGS: Similar to that of *dejecta*, and slightly darker than that of *satisfacta*.

LENGTH OF FOREWING: 20 to 22 mm.; holotype, 21 mm.

FEMALE: Similar to male but with basal and outer portions of wings more heavily suffused with dark scales.

LENGTH OF FOREWING: 19 to 20 (allotype) mm.

MALE GENITALIA: Similar to those of *dejecta*.

FEMALE GENITALIA: Similar to those of *dejecta*.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, male, and allotype, female, Estes Park, Larimer County, Colorado (Wiest); both specimens are from the collection of G. H. and J. L. Sperry. The genitalia of the holotype are on slide J.L.S. No. 300; those of the allotype, on J.L.S. No. 1604. Paratypes, all from Colorado: Same data as types, one female, and September 1, 1938 (G. H. and J. L. Sperry), one male; Rocky Mountain National Park, August 15, 1927 (A. B. Klots), one male; Glenwood Springs, Garfield County, October 1-7, one male; Big Spring Ranch, Florissant, Teller County, elevation 8640 feet, various dates between August 7-15, 1960, August 8-21, 1962, and

August 16, 1964 (Thomas C. Emmel), 47 males and one female; Golden, Jefferson County, September 10, 1955 (D. Bowman), one male.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collection of that institution, of the Los Angeles County Museum of Natural History, of C. W. Kirkwood, and R. H. Leuschner.

DISTRIBUTION: Northern and central Colorado (see fig. 5).

TIME OF FLIGHT: The adults have been captured in August, September, and the first week of October.

REMARKS: Fifty-seven specimens (54 males and three females) and 10 genitalic dissections (nine males and one female) have been studied.

Hulst had a specimen from Colorado before him when he described *dejecta*; this moth has not been found. As I am assuming that it would belong to this population, the bibliographical references are cited here. There is the possibility, however, that they may be referable to the following subspecies.

***Stenoporpia pulmonaria pulmonaria* (Grote)**

Plate 4, figure 3

*Cymatophora* (*Boarmia*) *pulmonaria* GROTE, 1881, p. 167.

*Cymatophora pulmonaria*: GROTE, 1881, p. 153 (*nomen nudum*); 1882, p. 49. McDUNNOUGH, 1920, p. 9.

*Boarmia pulmonaria*: ANON, 1882, p. 24. SMITH, 1891, p. 72.

*Selidosema pulmonarium*: HULST, 1896, p. 355. DYAR, "1902" [1903], p. 324. SMITH, 1903, p. 77.

*Cleora pulmonaria*: BARNES AND McDUNNOUGH, 1917a, p. 118.

*Anacamptodes pulmonaria*: McDUNNOUGH, 1938, p. 164.

*Stenoporpia pulmonaria*: RINDGE, 1966, p. 183.

The members of this population are larger, darker, and more evenly colored than *vicaria*, and usually lack the s. t. line. They occur in Arizona, New Mexico, Utah, and southwestern Colorado.

MALE: Head, thorax, and abdomen similar to those of *vicaria*, but with upper surface tending to be slightly darker.

UPPER SURFACE OF WINGS: Forewings pale gray with numerous grayish brown and brownish black scales; median area paler than basal and outer areas; maculation similar to



that of *dejecta*; t. a. and t. p. lines with broad, prominent, brownish black shade bands; s. t. line variable, ranging from being absent or obsolescent to weakly represented; outer one-third of wing tending to be unicolorous; lower portion of wing with yellowish brown area varying from prominent to absent. Hind wings similar to forewings, with anterior portion tending to be slightly paler than remainder of wing; maculation similar to that of *dejecta*.

UNDER SURFACE OF WINGS: Similar to that of *vicaria*.

LENGTH OF FOREWING: 19 to 23 mm.

FEMALE: Similar to male, but tending to be more heavily suffused with dark scales, and with s. t. line tending to be slightly more strongly represented.

LENGTH OF FOREWING: 20 to 22 mm.

MALE GENITALIA: Similar to those of *dejecta*.

FEMALE GENITALIA: Similar to those of *dejecta*, but ridges of sterigma more prominent.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPE: Grote described *pulmonaria* from a single female; this specimen is in the collection of the United States National Museum, and its genitalia are mounted on slide E.L.T. No. 2366.

TYPE LOCALITY: Prescott, Yavapai County, Arizona.

DISTRIBUTION: This subspecies is found in the mountainous regions of Arizona, New Mexico, Utah, and southwestern Colorado (see fig. 5).

TIME OF FLIGHT: The adults have been captured in June, July, August, and September.

REMARKS: A total of 108 specimens (83 males and 25 females) and 26 genitalic dissections (19 males and seven females) have been studied, including the unique type.

The three Colorado records are tentatively placed as this subspecies, pending additional material; two of these are represented by a single, worn, male specimen.

***Stenoporpia pulmonaria blattifera*,**  
new subspecies

Plate 4, figure 4

The members of this population are larger and have a more unicolorous purplish gray

upper surface and thinner cross lines than does nominate *pulmonaria*. They occur in the mountains of Durango.

MALE: Head and thorax similar to those of nominate *pulmonaria*.

UPPER SURFACE OF WINGS: Forewings an even purplish gray, median area slightly paler than remainder of wing; maculation similar to that of *dejecta*, but t. a. and t. p. lines thinner and less prominent, and t. p. line meeting inner margin at right angle; t. a. and t. p. lines with faint, nebulous shade lines; s. t. line obsolescent; lower portion of wing with faint yellowish brown area. Hind wings similar to forewings, anterior portion slightly paler than remainder of wing; maculation similar to that of *dejecta*.

UNDER SURFACE OF WINGS: Slightly darker gray than nominate *pulmonaria*, and discal dots present.

LENGTH OF FOREWING: 23 mm. (allotype).

FEMALE: Similar to male, but more evenly colored, and with cross lines more weakly represented.

LENGTH OF FOREWING: 23 mm. (holotype).

MALE GENITALIA: Unknown (the male is without abdomen).

FEMALE GENITALIA: Similar to those of nominate *pulmonaria* but ridges of sterigma more prominent.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, female, 10 miles west of El Salto, Durango, Mexico, elevation 9000 feet, June 8, 1964 (J. E. H. Martin); allotype, male, same data, August 8, 1964 (W. C. McGuffin). The genitalia of the holotype are mounted on slide F.H.R. No. 14548.

Both type specimens are in the Canadian National Collection, Ottawa.

DISTRIBUTION: This subspecies is known only from the high mountains of Durango.

TIME OF FLIGHT: The two adults were captured in June and August.

REMARKS: Two specimens have been examined.

***Stenoporpia purpuraria* (Barnes and McDunnough)**

Plate 4, figure 5, plate 9, figure 1, plate 14,  
figure 2

*Selidosema purpuraria* BARNES AND McDUN-  
NOUGH, 1913, p. 129, pl. 7, fig. 5 (lectotype male).

*Cleora purpuraria*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia purpuraria*: McDUNNOUGH, 1920, p. 26, pl. 4, fig. 1 (male genitalia); 1938, p. 164.

This species is similar in appearance to nominate *pulmonaria* but the moths are larger, the forewings have a larger discal spot, a stronger median shade line, a more irregular t. p. line, and a more prominent s. t. line. The genitalia have good characters by which to separate *purpuraria* from *pulmonaria*. The present species is known from Arizona and New Mexico.

**MALE:** Head with vertex gray; front brownish black, paler at top and bottom; palpi grayish brown, with scattered dark brown scales. Thorax gray above, with end of collar black; beneath pale brownish gray; legs pale brownish gray, forelegs and all tarsi tending to be somewhat darker; hind tibia without hair pencil. Abdomen gray above, with numerous dark grayish black scales except on first segment, and tending to have posterior bands on segments; paler below.

**UPPER SURFACE OF WINGS:** Forewings grayish white, with numerous grayish black, black, and dark brown scales, producing a faint purplish gray cast; median area paler than surrounding areas; t. a. and t. p. lines black, prominent, like those of *pulmonaria* but tending to be slightly more irregular in course, t. p. line concave above anal vein; cross lines shaded by broad, nebulous, dark reddish brown bands; discal spot large, with pale gray scales in center; median band broad, nebulous, encompassing discal spot and subparalleling t. p. line in lower part of wing; s. t. line grayish white, angled outward in cells; lower portion of wing with broad, reddish brown, transverse band, and reddish brown stripe extending length of vein  $M_1$  to wing margin; terminal line obsolescent, with weak intravenular dots; fringe dark gray. Hind wings concolorous with forewings, but anterior portion paler; maculation as on forewings, with incomplete, broad, diffuse intradiscal line and darker, sharply defined extradiscal line; discal spot large, elongate, pale scales in center; outer portion of wing similar to that of forewing.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale grayish brown scales along costa and across apex of forewing, and

with faint traces of discal spots, t. p. and extradiscal lines; terminal line either absent or obsolescent; fringe concolorous with wing.

**LENGTH OF FOREWING:** 22 to 24 mm.

**FEMALE:** Similar to male, but with heavier dark scaling on upper surface of wings, this extending across median area below discal spot in some specimens.

**LENGTH OF FOREWING:** 20 to 23 mm.

**MALE GENITALIA:** Uncus broad, constricted posteriorly, apical region attenuate and having parallel sides, tip of apex concave between two thick points; gnathos elongate, tapering to median point; valves with apex bluntly pointed; costal arm shorter than valve, approximately 0.75 mm. in length, extending parallel with costal margin after leaving poorly defined, sloping shoulder; apex of arm sloping, entire end thickly set with more than 12 slender spines; cristae in form of large, prominent patch on each side of very slender anellus; aedeagus 3.1 to 3.5 mm. in length, longer than, or equal to, combined lengths of uncus, tegumen, and saccus, posterior end sclerotized and pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma with median area bounded anteriorly by numerous small ridges, becoming increasingly V-shaped anteriorly and extending into ductus bursae; large anterolateral areas lightly sclerotized and weakly swollen, not reaching posterior margin of sclerotized area of ductus bursae; latter with ridges of sterigma almost extending to median, heavily sclerotized area, with dorsolateral folds united anteriorly, and short membranous anterior section joining corpus bursae dorsally; ductus seminalis arising posteroventrally from corpus bursae; latter elongate, with longitudinally striate posterior portion tapered posteriorly, and large, swollen anterior section; signum invaginated, ovoid, with narrow, weakly stellate anterior margin, and with recessed central area having several irregular ridges; apophyses posteriores 2.5 to 2.9 mm. in length; apophyses anteriores, 1.3 to 1.5 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Barnes and McDunnough had two males when describing *purpuraria*; both are in the United States National Museum. The specimen labeled as type, and illustrated by

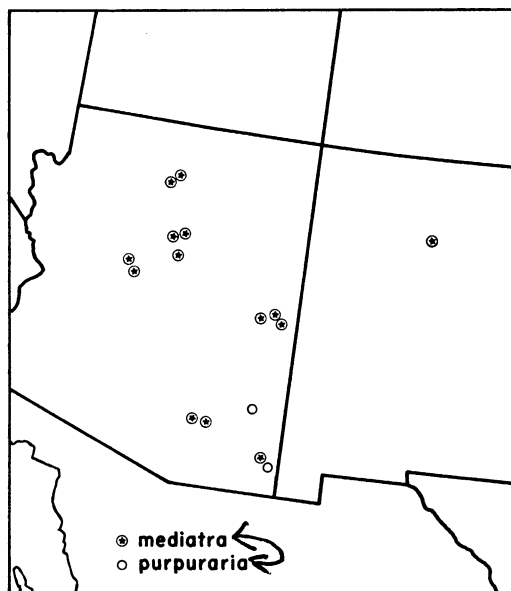


FIG. 6. Distribution of *Stenoporpia mediatra* Rindge and *S. purpuraria* (Barnes and McDunnough).

the authors, is hereby designated as the lectotype. Its genitalia are on slide H.W.C. No. 1213.

**TYPE LOCALITY:** White Mountains, Arizona (?Apache County).

**DISTRIBUTION:** The mountainous regions of Arizona and New Mexico (see fig. 6).

**TIME OF FLIGHT:** The adults have been captured in May, June, August, and September.

**REMARKS:** Sixty-seven specimens (56 males and 11 females) and 15 genitalic dissections (11 males and four females) have been studied, including both of the original type specimens.

The male genitalia of *purpuraria* can be recognized by their large size, by the elongate and slender tip of the uncus, and by the numerous short spines crowded on to the tip of the costal arm.

The female genitalia of *purpuraria* are similar to those of *pulmonaria*. The structures of the present species can be separated from those of *pulmonaria* by their larger size, their longer apophyses, and by the fact that the dorsolateral areas of the more heavily sclerotized portion of the ductus bursae are united anteriorly.

***Stenoporpia noctiluca* (Druce),  
new combination**

Plate 4, figure 6, plate 9, figure 2

*Boarmia noctiluca* DRUCE, 1892 (1891–1900), p. 73; 1893 (1881–1900), pl. 48, fig. 7 (male).

This species is similar in appearance to the preceding members of this group but it is smaller and the upper surface of the wings is a more unicolorous gray. It occurs in southern Mexico and Guatemala.

**MALE:** Head with vertex pale gray, becoming grayish brown between antennal bases; front blackish brown, with gray at top and bottom; palpi grayish brown. Thorax grayish brown above, end of collar darker; beneath pale brownish gray; legs pale brownish gray, forelegs and all tarsi tending to be somewhat darker; hind tibia without hair pencil. Abdomen pale gray above, with numerous dark brown scales posteriad of first segment, these tending to be grouped together to form diffuse bands; paler below.

**UPPER SURFACE OF WINGS:** Forewings pale grayish brown, with basal and outer areas evenly suffused with brownish gray scaling; t. a. line weakly represented except for strong marking on costa; discal dot small; median band obsolescent except for mark on costa; t. p. line black, evenly curving outward from costa, then biconcave to inner margin, becoming slightly thickened between veins  $M_2$  and  $Cu_1$ ; cross lines without shade bands; s. t. line weakly indicated, whitish gray, angled outward in cells; terminal line obsolescent, with weak intravenular dots; fringe concolorous with wing. Hind wings concolorous with forewings; maculation as on forewings, with incomplete, broad, diffuse intradiscal band, and sharply defined, S-shaped, extradiscal band; discal spot obsolescent; outer portion of wing similar to that of forewing.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale grayish brown scales along costa and across apex of forewing; without maculation.

**LENGTH OF FOREWING:** 20 to 21 mm.

**FEMALE:** Similar to male, but both upper and lower surfaces tending to be slightly darker.

**LENGTH OF FOREWING:** 18 mm.

**MALE GENITALIA:** Uncus broad, tapering

posteriorly, apical region somewhat attenuate and weakly curved ventrally, tip of apex blunt, concave ventrally between two points; gnathos with elongate, pointed, median enlargement; valves with apex either rounded or bluntly pointed; costal arm shorter than valve, approximately 0.4 mm. in length, extending parallel with costal margin after leaving poorly defined, sloping shoulder; apex of arm bluntly rounded and with from three to five apical or posterodistal spines; cristae a large, prominent patch on each side of slender anellus; aedeagus 2.2 mm. in length, approximately equal to combined lengths of uncus, tegumen, and saccus, posterior end lightly sclerotized and pointed; vesica unarmed.

**FEMALE GENITALIA:** Unknown (the only known female had an abdomen of *Glena* sp. glued on to it).

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Druce described *noctiluca* from two male specimens. The specimen bearing Druce's type label is U.S.N.M. No. 12475; this moth is hereby designated as the lectotype. Its genitalia are mounted on slide E.L.T. No. 2367.

**TYPE LOCALITY:** Las Vigas, Veracruz, Mexico. The lectotype is labeled "Vera Cruz, Mex."

**DISTRIBUTION:** Southern Mexico (the state of Veracruz) and Guatemala (the province of Baja Verapaz).

**TIME OF FLIGHT:** The single specimen bearing a date is labeled "July."

**REMARKS:** Five specimens (four males and one female) and two male genitalic dissections have been studied, including the lectotype.

The male genitalia of both *noctiluca* and *purpuraria* are similar in that they have an elongate, pointed, median process of the gnathos. The structures of the present species can be separated from those of the preceding one by their smaller size and by the different spining at the tip of the costal arm.

***Stenoporpia serica*, new species**

Plate 4, figure 7, plate 9, figure 3, plate 14,  
figure 3

This species is very similar to *noctiluca*, but the wings are more unicolorous, and the geni-

talia are different. It occurs in the mountains of Durango.

**MALE:** Head, thorax, and abdomen similar to those of *noctiluca*, but with upper surfaces darker gray.

**UPPER SURFACE OF WINGS:** Forewings unicolorous grayish purple, with scattered grayish black scales; maculation similar to that of *noctiluca* but with t. a. and t. p. lines tending to be less angled toward base of wing; terminal area faintly darker than subterminal area. Hind wings concolorous with forewings and like those of *noctiluca*.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale grayish brown scales along costa and across apex of forewing; cross lines very faintly indicated.

**LENGTH OF FOREWING:** 19 mm. (holotype).

**FEMALE:** Similar to male, but with faint traces of bands next to t. a. and t. p. lines in some specimens.

**LENGTH OF FOREWING:** 18 to 21 mm.; allotype, 20 mm.

**MALE GENITALIA:** Similar to those of *noctiluca* but differing mainly as follows: uncus with apical region slightly thinner; gnathos with prolonged, weakly capitate, median enlargement; costal arm longer, almost 0.6 mm. in length, arising from more sharply defined shoulder, and having from two to four closely set spines at apex; aedeagus 2.4 mm. in length.

**FEMALE GENITALIA:** Sterigma with circular median area bounded anteriorly by numerous small, concentric, semicircular ridges, these scarcely deflected into opening of ductus bursae; large anterolateral areas lightly sclerotized and slightly enlarged, extending to posterior portion of sclerotized area of ductus bursae; latter with median sclerotized area having large dorsolateral folds almost uniting medially, and with short membranous anterior section joining corpus bursae dorsally; ductus seminalis arising from corpus bursae posteroventrally on right side; corpus bursae with narrow posterior portion weakly striate, slightly flattened laterally, gradually enlarging into more swollen anterior section; signum dorsal or dorsolateral, invaginated, ovoid, with narrow, weakly stellate anterior margin, recessed central area having several irregular ridges; apophyses posteriores 2.1 to 2.3 mm. in length; apophyses anteriores, 1.0 to 1.1 mm.

EARLY STAGES: Not described.

FOOD PLANT: Not published.

TYPES: Holotype, male, 23 miles west of Durango, Durango, Mexico, emerged July 27, 1964 (W. C. McGuffin); allotype, female, 10 miles west of El Salto, Durango, Mexico, elevation 9000 feet, July 5, 1964 (W. C. McGuffin). The genitalia of the holotype are mounted on slide McG. No. 142; those of the allotype, on F.H.R. No. 14462. Paratypes: Ten miles west of El Salto, Durango, Mexico, elevation 9000 feet, various dates between June 10 and July 17, 1964 (W. C. McGuffin and J. E. H. Martin), eight females.

The holotype and allotype are in the Canadian National Collection, Ottawa; paratypes are in the collections of that institution and of the American Museum of Natural History.

DISTRIBUTION: The higher mountains of Durango.

TIME OF FLIGHT: June and July.

REMARKS: Ten specimens (two males and eight females) and four genitalic dissections (one male and three females) have been studied.

The male genitalia of this species are quite similar to those of *noctiluca* but a number of differences are present, as outlined above.

The female genitalia are similar to those found in *purpuraria*, but can be recognized by their smaller size, and by the different configuration of both the sterigma and of the sclerotized area of the ductus bursae.

The apparent difference in color between *serica* and *noctiluca* may be due to the freshly caught specimens of the former as compared with the much older examples of *noctiluca*.

#### GROUP IV

The moths of this group are small (summer generation) to medium (spring generation) in size and vary in color from pale gray, with considerable dark scaling, to dark purplish brown. Both species have small discal dots and the tibial hair pencil in the males.

The male genitalia have a triangular uncus, and the long and slender costal arms have reduced spinning at the apices.

The anterolateral areas of the sterigma are the most elongate in the genus. The sterigma is membranous, and it may or may not have lateral ridges.

Only two species are placed in this group: *vernata* and *vernalella*.

##### *Stenoporpia vernata*

(Barnes and McDunnough)

The upper surface of the wings are paler than those of *vernalella*. *Stenoporpia vernata* is divided into two subspecies, a more unicolorous one in the southern Rocky Mountain states, Nevada, and southeastern California, and a brighter, more contrastingly colored one from the Sierra Nevadas of California.

*Stenoporpia vernata vernata* (Barnes and McDunnough), new status

Plate 4, figure 8, plate 9, figure 4, plate 14, figure 4

*Cleora vernata* BARNES AND MCDUNNOUGH,

1917b, p. 243, pl. 25, fig. 5 (lectotype male), pl. 31, fig. 2 (male genitalia).

*Stenoporpia vernata*: MCDUNNOUGH, 1920, p. 26; 1938, p. 164.

*Stenoporpia jemesata* CASSINO, 1927, p. 75.

*Stenoporpia jemezata* (emend.): MCDUNNOUGH, 1938, p. 164. New synonymy.

*Parapheromia cassinoi* MCDUNNOUGH, 1927, p. 277 (*partim*).

This population has duller and less contrastingly colored wings than does the following subspecies.

MALE: Head with vertex pale gray, with brownish black scaling between antennal bases; front brownish black, with narrow pale gray band across top; palpi pale brownish gray, becoming darker terminally. Thorax pale gray above, with scattered dark scales, and with dark brown band at end of collar and across patagia in some specimens; pale brownish white below; legs pale brownish white, forelegs and tarsi of all legs tending to be slightly darker; hind tibia with small hair pencil. Abdomen pale gray above, with numerous brownish gray and brownish black scales posteriad of first segment, and with dark posterior bands on segments; paler below.

UPPER SURFACE OF WINGS: Forewings grayish white, heavily overlain with dark brown and brownish black scales except in

contrastingly colored median area; cross lines black; t. a. line tending to be somewhat weakly represented, extending sharply outward after leaving costa, angled into cell, then angled basad and going inwardly to inner margin, with outward bow above anal vein; median line rather diffuse, variable in intensity, curving outward into cell, then weakly sinuous to inner margin; discal dot small, included in median line in many specimens; t. p. line prominent, outwardly bilobate below costa, turning basad, paralleling costa and becoming slightly thickened to about vein  $M_3$ , then strongly biconcave to middle of inner margin; both t. a. and t. p. lines shaded by broad brownish gray or dark brown bands, tending to be slightly reddish brown above inner margin, and with narrow, grayish white stripe separating t. p. line and its prominent band; s. t. line white, complete in most specimens, broadened in cell  $M_3$ ; terminal area concolorous with subterminal area but tending to be paler at wing apex and in cells  $M_1$ ,  $M_2$ , and  $M_3$ ; terminal line black, narrow or obsolescent, and with small intravenular spots; fringe concolorous with wing, or with slightly paler basal portion. Hind wings concolorous with forewings, but with anterior portion paler; maculation as on forewings, with incomplete, diffuse intradiscal line and darker, sharply defined extradiscal line, weakly concave across posterior portion of wing, and angulate anteriorly; discal dot small, elongate; s. t. line white, prominent, widened in lower part of wing.

**UNDER SURFACE OF WINGS:** Unicolorous whitish gray, with pale brownish gray scaling along costa of forewings; without maculation except for weakly represented discal dot on forewing, and for very faint traces of cross lines in some examples; fringe with basal portion whitish gray and with outer part gray.

**LENGTH OF FOREWING:** 17 to 19 mm. (spring generation), 14 to 15 mm. (summer generation).

**FEMALE:** Similar to male, but tending to be more heavily suffused with dark scaling above.

**LENGTH OF FOREWING:** 18 to 20 mm. (spring generation), 14 to 16 mm. (summer generation).

**MALE GENITALIA:** Uncus broadly triangular, with posterior end curved ventrally and

terminating in two small but elongate points; gnathos with spiculate, bluntly pointed, median projection; valve with apex rounded; costal arm slender, tapering, shorter than valve, approximately 0.3 mm. in length, extending away from inner face of valve after leaving rounded shoulder; apex of arm thin, with single, heavy spine; cristae in form of large, prominent patch on each side of slender anellus; aedeagus 1.8 to 2.0 mm. in length, shorter than combined lengths of uncus, tegumen, and saccus, with posterior end lightly sclerotized and pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma membranous, undifferentiated except for small, lateral, convergent ridges at opening of ductus bursae; large anterolateral areas deeply V-shaped, approximately 0.3 mm. in length, extending cephalad to anterior portion of ductus bursae; latter with elongate sclerotized area extending posteriorly to sterigma, becoming narrower anteriorly, and with short membranous area joining corpus bursae dorsally; ductus seminalis arising postero-ventrally from corpus bursae on right side; corpus bursae with posterior portion weakly striate, slightly flattened laterally, gradually enlarging into more swollen anterior end; signum dorsal, weakly invaginated, somewhat variable in shape, often ovoid, with narrow, weakly stellate anterior margin, and with central area having several irregular ridges; apophyses posteriores 1.9 to 2.1 mm. in length; apophyses anteriores, 0.9 to 1.1 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Barnes and McDunnough described *vernata* from three male specimens, all of which are now in the collection of the United States National Museum. One of these was labeled as the type, and it was illustrated by the authors; this moth is hereby designated as the lectotype. The genitalia of this specimen presumably were the ones illustrated with the original description.

The holotype, male, and allotype, female, of *jemezata* are thought to be in the Museum of Comparative Zoology, Harvard University, but they have not been found. Two male paratypes have been studied, a topotype in the Canadian National Collection, and the one from Grant, Park County, Colorado, in

the American Museum of Natural History. Both of these are *vernata*.

**TYPE LOCALITIES:** Glenwood Springs, Garfield County, Colorado, May (*vernata*); Jemez Springs, Sandoval County, New Mexico, August (*jemezata*).

**DISTRIBUTION:** Colorado, Utah, New Mexico, northern Arizona, Nevada, and southeastern California (see fig. 7).

**TIME OF FLIGHT:** The moths have been taken from mid April into September. There are two generations per year; the moths caught in April, May, and June are larger than those taken later in the year.

**REMARKS:** A total of 101 specimens (51 males and 50 females) and 23 genitalic dissections (17 males and six females) have been studied, including the original type series of *vernata*.

The two male and three female paratypes of *Parapheromia cassinoi* McDunnough in the Museum of Comparative Zoology are the summer generation of *vernata*. One of the males was dissected, and this slide (No. 3987) is labeled as *Stenoporpia jemesata* Cassino, paratype. As these five moths are topotypical for the Cassino name, one wonders if they might not have been part of the type lot of *jemesata*.

The male genitalia of *vernata* can be recognized by the fact that the broadly triangular uncus does not have an attenuate apex and the slender, tapering, costal arm of the costa terminates in a single spine.

The female genitalia of *vernata* can be distinguished from all the preceding species by the longer sclerotized area in the ductus bursae, and by the much longer anterolateral areas of the sterigma.

***Stenoporpia vernata variana*,**  
new subspecies

Plate 4, figure 9

The members of this population have the upper surface of the wings brighter and more contrastingly colored than do those of the nominate subspecies.

**MALE:** Head, thorax, and abdomen similar to those of nominate subspecies but paler, and with banding on abdomen tending to be more prominent.

**UPPER SURFACE OF WINGS:** Forewings white, overlain with dark brown and reddish

brown scaling; median area sharply contrasting in color with remainder of wing; maculation as in nominate subspecies; lower portion of wing, and band distal to t. p. line, suffused with pale reddish brown. Hind wings like those of nominate subspecies, but with paler and more contrastingly colored basal and median areas, with reddish brown scaling in band outside of extradiscal line, and with paler terminal area.

**UNDER SURFACE OF WINGS:** Similar to those of nominate subspecies but paler.

**LENGTH OF FOREWING:** 17 to 20 mm.; holotype, 19 mm.

**FEMALE:** Similar to male, but with more dark scaling on upper surface of wings.

**LENGTH OF FOREWING:** 18 to 20 mm.; allotype, 18 mm.

**MALE GENITALIA:** Similar to those of nominate subspecies.

**FEMALE GENITALIA:** Similar to those of nominate subspecies but with sterigma tending to have anterior ridges more strongly represented, and with longer apophyses posteriores, 2.2 to 2.3 mm. in length.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, Smoky Valley, Tulare County, California, elevation 6300 feet, June 13, 1948 (C. Henne); allotype, female, same data, June 24, 1954 (C. Ingham and C. Henne). The genitalia of the holotype are on slide F.H.R. No. 14,275; of the allotype, on F.H.R. No. 14276. Paratypes: Same data as types, various dates between May 29 and June 29, 1944–1954 (C. Ingham and C. Henne), 42 males and 111 females; Whitney Portal, Inyo County, California, June 11, 1939 (C. W. Kirkwood), one female; Lone Pine Creek, Inyo County, elevation 8250 feet, July 7, 1961 (J. Powell), one male.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution, of the Los Angeles County Museum of Natural History, of the California Insect Survey, University of California, Berkeley, and of C. W. Kirkwood.

**DISTRIBUTION:** This population is known only from the eastern side of the Sierra Nevada Range, California.

**TIME OF FLIGHT:** The moths have been taken from late May into July. Consequently



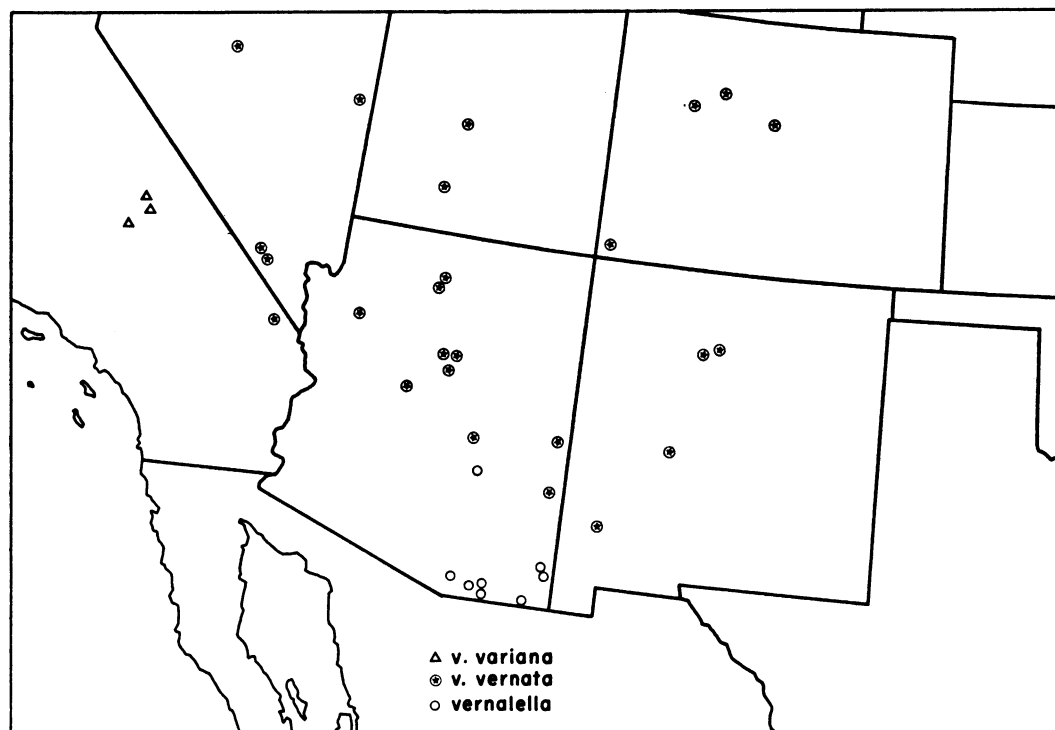


FIG. 7. Distribution of *Stenoporpia vernata* (Barnes and McDunnough) and *S. vernalella* McDunnough.

it is not known whether or not this population has a second generation each year.

REMARKS: A total of 157 specimens (44 males and 113 females) and seven genitalic dissections (four males and three females) have been studied.

***Stenoporpia vernalella* McDunnough**

Plate 5, figure 1, plate 10, figure 1, plate 14, figure 5

*Stenoporpia vernalella* McDUNNOUGH, 1940, p. 91, pl. 7, fig. 4 (male genitalia).

This species has more unicolorous wings, with a faint purplish tint, and cross lines that are straighter than those of *vernata*. The present species is found in southeastern Arizona.

MALE: Head with vertex dark purplish gray; front grayish black, slightly paler at lower margin; palpi pale brownish gray basally, becoming grayish black apically. Thorax dark purplish gray above; below whitish gray; legs whitish gray, forelegs and all tarsi darker; hind tibia with hair pencil. Abdomen dark purplish gray above, first segment paler; whitish gray below.

UPPER SURFACE OF WINGS: Forewings dark purplish gray, with median area slightly paler gray, and with dull reddish brown scaling along costa, cubital vein, lower margin of wing, on broad bands next to t. a. and t. p. lines, and in terminal area; cross lines black; t. a. line weakly curved into cell, then angled basally to inner margin, with inward angles on cubital vein and at inner margin; median line obsolescent, represented by costal bar, curving into small discal spot, then subparallel cross lines to inner margin; t. p. line prominent, outwardly bilobate below costa, turning basad and becoming thickened to about vein  $M_3$ , then paralleling outer margin with basal bend above anal vein; t. a. and t. p. lines with shade bands not prominent, tending to be suffused with reddish brown scales; s. t. line obsolescent in most specimens, when present whitish gray and indicated in upper and middle portions of wing; terminal line black, narrow, with small intravenular dots; fringe concolorous with wing. Hind wings concolorous with forewings, with basal one-half paler than outer portion; macula-

tion as on forewings, with weakly represented, incomplete, intradiscal line and prominent extradiscal line, either straight or weakly curved in course; discal spot small; s. t. line represented in lower part of wing.

UNDER SURFACE OF WINGS: Unicolorous whitish gray, with pale brownish gray scaling along costa of forewings and on some veins; without maculation, except for some dark gray scaling at apex of forewing on summer-generation specimens.

LENGTH OF FOREWING: 17 to 19 mm. (spring generation), 13 to 17 mm. (summer generation).

FEMALE: Similar to male, but tending to be more heavily suffused with dark scaling above.

LENGTH OF FOREWING: 17 to 19 mm. (spring generation), 15 to 18 mm. (summer generation).

MALE GENITALIA: Similar to those of *vernata*, but differing mainly as follows: uncus slightly more elongate and with posterior end broader and more strongly curved ventrally; gnathos with more elongate, spiculate, median process; costal arm of valve wider and longer, almost attaining apex of valve, approximately 0.6 mm. in length; apex of arm curved outward and bearing one or two outwardly directed heavy spines; aedeagus 2.0 to 2.3 mm. in length.

FEMALE GENITALIA: Sterigma membranous medially, with sclerotized lateral areas having numerous small ridges converging into opening of ductus bursae; anterolateral areas very long, sclerotized and striate, approximately 0.4 to 0.5 mm. in length, extending anteriorly past posterior end of corpus bursae, connected ventromedially with sclerotized and striate strip 0.2 mm. in width; ductus bursae with elongate, parallel-sided, sclerotized area extending posteriorly to sterigma, wide dorsolateral folds not meeting

medially, and short membranous area joining corpus bursae dorsally; ductus seminalis arising posteroventrally from corpus bursae on right side; corpus bursae elongate, narrower posterior portion weakly striate, enlarging into enlarged anterior end; signum situated laterally or ventrally, weakly invaginated, ovoid, with narrow, weakly stellate anterior margin, and with central area having several irregular ridges; apophyses posteriores 2.3 to 2.6 mm. in length; apophyses anteriores, 1.0 to 1.3 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: The holotype, male, and allotype, female, are C.N.C. No. 4958.

TYPE LOCALITY: Cave Creek, Chiricahua Mountains, Cochise County, Arizona, May.

DISTRIBUTION: Southeastern Arizona (see fig. 7).

TIME OF FLIGHT: The moths have been taken in every month from March through November. There are at least two generations a year; specimens taken from November to May are larger than those that fly from June through October.

REMARKS: A total of 148 specimens (80 males and 68 females) and 14 genitalic dissections (nine males and five females) have been studied.

The male genitalia of *vernaella* are similar to those of *vernata* but can be recognized by the fact that the costal arm is wider than and about twice as long as that of *vernata*. The spining at the end of the arm is also different. The one or two spines of *vernaella* project at approximately right angles to the axis of the genitalia.

The female genitalia are unique in the genus in that the long, pocket-like, anterolateral areas of the sterigma extend beyond the posterior end of the corpus bursae.

## GROUP V

The species included here are of medium size. The moths have light gray wings, the upper surface of which has well-defined maculation, particularly noticeable in the broad dark gray to reddish brown band just distad of the prominent t. p. line. The discal dots vary from being obsolescent to large and hol-

low. None of the males possess a tibial hair pencil.

The male genitalia have a moderate uncus, and the gnathos has a long, slender, tapering, median process.

In the female genitalia, the anterolateral areas of the sterigma vary from having the

anterior margin smoothly rounded to possessing outwardly curving projections. The sterigma has concentric ridges that may or may not extend anteriorly into the opening of the ductus bursae, whereas the median sclerotized area of the latter either is V-shaped or has parallel sides.

Four species are included in this group: *insipidaria*, *anellula*, *badia*, and *macdunnoughi*.

***Stenoporpia insipidaria* McDunnough**

Plate 5, figure 2, plate 10, figure 2, plate 14, figure 6

*Stenoporpia insipidaria* McDUNNOUGH, 1945, p. 99.

This small gray species, which occurs in New Mexico, can be recognized by the heavy and almost straight t. p. line in the middle of the forewing.

**MALE:** Head with vertex whitish gray, with brownish gray scales between antennal bases; front brownish black or brownish gray, with narrow row of whitish scales dorsally and area of grayish brown scales ventrally; palpi brownish gray. Thorax whitish gray above, with blackish brown scaling at end of collar and as narrow band across patagia and thorax; whitish below, legs whitish or pale brownish white, forelegs and tarsi darker; hind tibia without hair pencil. Abdomen whitish gray above, segments posterior of first grayish brown anteriorly and medially, and with black posterior bands; below paler.

**UPPER SURFACE OF WINGS:** Forewings grayish white, with brownish gray and grayish black scaling; median area paler than adjacent areas; cross lines black, almost straight; t. a. line extending from cell, subparalleling costa, to inner margin; median line weakly represented, swinging outward from costa to include dark discal spot, then curved and going to inner margin; t. p. line prominent, extending from vein  $R_5$  or  $M_1$  parallel with outer margin; t. a. and t. p. lines bordered with brownish gray shade bands; subterminal area with grayish white, rather nebulous band, variable in length, usually present in lower part of wing; s. t. line white or grayish white, curved outward in cells; terminal line black, narrow, and with small intravenular enlargements; fringe concolorous with wing. Hind wings concolorous with forewings, with broad basal area slightly paler than remainder of

wing; maculation as on forewings, with incomplete, diffuse, intradiscal line, and prominent extradiscal line in lower part of wing; discal dot small or obsolescent; outer portion of wing similar to that of forewing but s. t. line straighter.

**UNDER SURFACE OF WINGS:** Unicolorous grayish white, with pale brownish gray scaling along costa of forewings and on all veins; without maculation except for faint mirroring of outer cross lines.

**LENGTH OF FOREWING:** 15 to 16 mm.

**FEMALE:** Similar to male, but with more dark scaling on upper surface of wings.

**LENGTH OF FOREWING:** 16 to 18 mm.

**MALE GENITALIA:** Uncus elongate, apical section curved ventrally, broad, flat, apex truncate and with small lateral points; gnathos broad dorsally, slender laterally, and with weakly spiculate, elongate, bluntly pointed median projection; valve with apex bluntly pointed; costal arm broad, almost as long as valve, approximately 0.4 mm. in length, extending parallel with costa after leaving definite shoulder; apex of arm bluntly wedge-shaped, with one large, inwardly directed terminal spine, and one or two much smaller spines mediad of terminal spine; cristae a large prominent patch on each side of slender anellus; aedeagus 2.2 to 2.4 mm. in length, longer than combined lengths of uncus, tegumen, and saccus, with posterior end lightly sclerotized and pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma with median area bounded anteriorly by numerous small, flatly V-shaped ridges, becoming more attenuate anteriorly and extending into opening of ductus bursae; anterolateral areas well defined but not extending anteriorly of intersegmental area between them, latter crossing middle of sclerotized portion of ductus bursae; latter with small, rectangular, sclerotized area having narrow dorsolateral folds, and with short membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising from corpus bursae posteroventrally; corpus bursae short, longitudinally striate posterior portion expanding into swollen anterior section; signum dorsal, weakly invaginated, ovoid, with narrow, weakly stellate anterior margin, and a few small teeth on central area; apophyses pos-

teriores 1.6 to 1.8 mm. in length; apophyses anteriores, 0.8 to 1.0 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: The holotype, male, is C.N.C. No. 5604 and the allotype, female, is in the Museum of Comparative Zoology at Harvard University.

TYPE LOCALITY: Jemez Springs, Sandoval County, New Mexico.

DISTRIBUTION: This species is known only from New Mexico (see fig. 8).

TIME OF FLIGHT: The adults have been captured in July, August, and September.

REMARKS: Eleven specimens (three males and eight females) and four genitalic dissections (two males and two females) have been studied.

The male genitalia of *insipidaria* can be separated from all the preceding species by the broader tip of the uncus, and by the nature of the spining at the tip of the costal arm. The costal arms are similar to those found in some of the species of group VI. The genitalia of *insipidaria* can be separated from those of the latter group by the narrower uncus and by the elongate, slender, median enlargement of the gnathos.

The female genitalia of this species can be separated from those of the preceding species by the fact that the V-shaped ridges of the sterigma become increasingly steeper anteriorly and extend into the opening of the ductus bursae, and by the flat anterior margin of the anterolateral areas of the sterigma.

***Stenoporpia anellula* (Barnes and McDunnough)**

Plate 5, figure 3, plate 10, figure 3, plate 15, figure 1

*Cleora (Selidosema) anellula* BARNES AND McDUNNOUGH, 1917b, p. 242, pl. 25, fig. 4 (lectotype male), pl. 31, fig. 1 (male genitalia).

*Stenoporpia anellula*: McDUNNOUGH, 1920, p. 26 (not genitalic figure); 1938, p. 164; 1945, p. 100.

This species can be separated from *insipidaria* by its larger size, by the more sinuous t. p. line, and by the larger discal spots on the upper surface of the wings. It occurs in the southern Rocky Mountain states.

MALE: Head with vertex having mixture of brownish black and white scales, with broad dark band between antennal bases; front

blackish brown, with narrow white band across top and wider whitish gray band across bottom; palpi brownish gray, becoming darker apically. Thorax above with mixed brownish black and white scales, some specimens having narrow dark band at tip of collar and across patagia and thorax; below whitish; legs whitish, forelegs and all tarsi darker; hind tibia without hair pencil. Abdomen grayish white above, with grayish brown and brownish black scaling, and dull black or brownish black bands on posterior ends of segments; below paler.

UPPER SURFACE OF WINGS: Forewings white or whitish gray, heavily suffused with grayish brown and brownish black scales, and faint indication of yellowish brown band along inner margin in some specimens; median area paler than adjacent areas, particularly in outer portion; cross lines black; t. a. line weakly represented anteriorly, broadly curved into cell, becoming prominent and angled basad, with outward angles on veins; median line weakly represented, diffuse, curving outward to include rather diffuse discal spot, then proceeding down center of median area to inner margin; t. p. line prominent, outwardly bidentate below costa, swinging basad and becoming slightly thickened from veins  $M_2$  to  $Cu_1$ , then paralleling outer margin to inner margin, with slight basal bend on anal vein; t. a. and t. p. lines with broad, grayish black or brownish black shade bands; s. t. line narrow, white, strongly outwardly dentate in cells; subterminal and terminal areas with dark streak extending from t. p. line in cells  $M_2$  and  $M_3$  to outer margin in cells  $R_5$ ,  $M_1$ , and  $M_2$ ; terminal line black, slender, narrowed or interrupted by veins, and with intravenular enlargements; fringe concolorous with wing. Hind wings concolorous with forewings, median area slightly paler than remainder of wing; maculation as on forewings, with incomplete, diffuse intradiscal line and with prominent extradiscal line in lower part of wing; discal spot large, elongate, with whitish gray scales in center; s. t. line complete.

UNDER SURFACE OF WINGS: Unicolorous whitish gray, with pale brownish gray scaling along costa of forewings and on all veins; without maculation except for faint traces of discal spots and outer cross lines; some speci-

mens with faint, pale brownish gray subterminal band on forewings.

LENGTH OF FOREWING: 18 to 20 mm.

FEMALE: Similar to male, but with more dark scaling on upper surface of wings.

LENGTH OF FOREWING: 17 to 19 mm.

MALE GENITALIA: Uncus broadly triangular, with apical section somewhat attenuate, broad, concave ventrally, apex rounded, with small lateral points; gnathos broad dorsally, slender laterally, and with weakly spiculate, elongate, bluntly pointed, median projection; valve with apex bluntly pointed; costal arm broad, shorter than valve, approximately 0.4 mm. in length, extending away from inner face of valve after leaving slanting shoulder; apex of arm rounded, with one large, outwardly directed, median spine and one much smaller spine (rarely, two spines) on each side; cristae a large prominent patch on each side of slender anellus; aedeagus 2.6 to 2.7 mm. in length, longer than combined lengths of uncus, tegumen, and saccus, with posterior end lightly sclerotized and pointed; vesica unarmed.

FEMALE GENITALIA: Sterigma with median area bounded anteriorly by numerous small, concentric, semicircular ridges; wide membranous anterior portion with anterolateral areas moderately enlarged, extending to posterior portion of sclerotized area of ductus bursae; latter with sclerotized area tapering anteriorly, having wide dorsolateral folds almost meeting anteriorly, and short membranous anterior section joining corpus bursae posterodorsally; ductus seminalis arising from corpus bursae posteroventrally on right side; corpus bursae with narrow, longitudinally striate posterior portion, and bulbous anterior section; signum dorsal, variable in size and shape, usually ovoid, weakly invaginated, with narrow weakly stellate anterior margin, and a few small teeth on central area; apophyses posteriores 1.7 to 2.1 mm. in length; apophyses anteriores, 0.9 to 1.1 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: This species was described from four males and three females. The specimen bearing the authors' type label is figured with the original description; this male is hereby designated as the lectotype. It is in the United States National Museum, and its

genitalia are mounted on slide H.W.C. No. 1249.

TYPE LOCALITY: Jemez Springs, Sandoval County, New Mexico.

DISTRIBUTION: The mountains of Colorado, Utah, New Mexico, and Arizona (see fig. 8).

TIME OF FLIGHT: Nearly all the material examined was captured in August and September, but three moths have been examined that were captured from mid June to mid July.

REMARKS: Fifty-nine specimens (34 males and 25 females) and 20 genitalic dissections (nine males and 11 females) have been studied, including the original type series.

The male genitalia of *anellula* can be separated from those of the preceding species by the nature of the spining at the tip of the costal arm. The latter may be somewhat variable, not only from one preparation to the next, but the right arm may not agree with the left one. Variation occurs in the number of small spines and, more rarely, in the position of the larger spine.

The female genitalia of *anellula* are similar to those of the taxa of group III in that the sterigma has a large number of semicircular concentric ridges and the anteroventral areas are moderately produced. The structures of the present species can be recognized by the tapering ductus bursae and by the shorter apophyses.

The descriptions of the adults were based on material collected in August and September. The three specimens captured in June and July are much less suffused with black scales than are the later-flying examples. Presumably those few moths represent the spring generation of *anellula*.

#### *Stenoporpia badia*, new species

Plate 5, figure 4, plate 10, figure 4, plate 15,  
figure 2

This species can be distinguished from *anellula* by the more sinuous t. p. line and by the orange-brown or dark reddish brown shade bands next to the cross lines on the upper surface of the forewings. It is known only from California.

MALE: Head with vertex having mixture of white and grayish black scales, with broad dark band between antennal bases; front

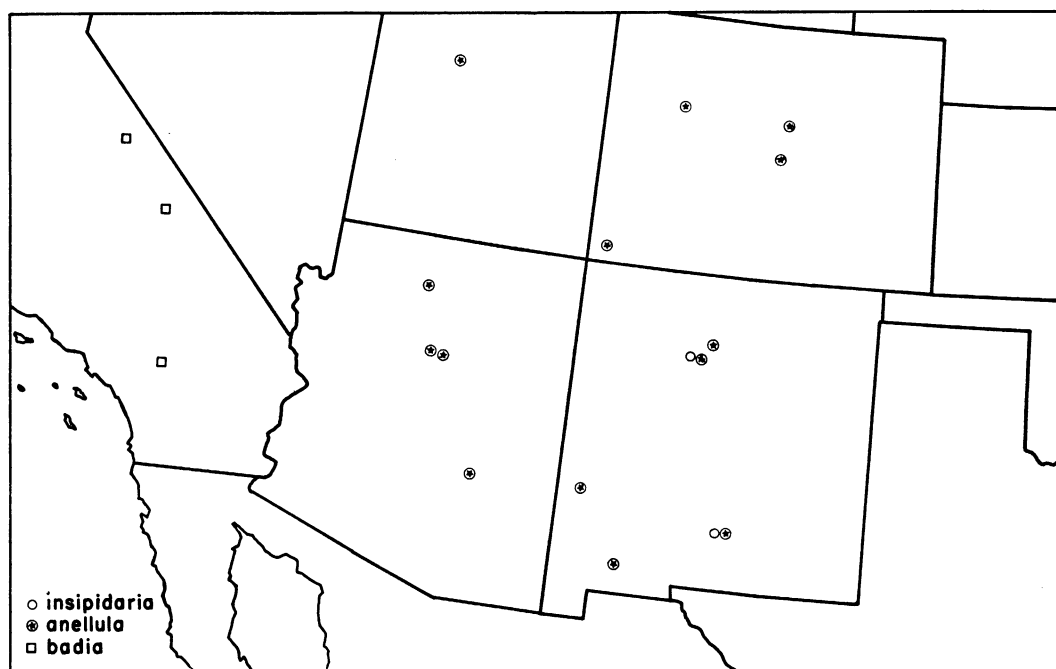


FIG. 8. Distribution of *Stenoporpia insipidaria* McDunnough, *S. anellula* (Barnes and McDunnough), and *S. badia*, new species.

blackish brown, with whitish gray area across bottom; palpi brownish gray, darkening apically. Thorax above with mixture of white, blackish gray, and brownish black scales, forming broad, dark band at end of collar and narrow band across patagia and thorax; below whitish; legs whitish, forelegs and middle legs, plus all tarsi, variably marked with brown; hind tibia without hair pencil. Abdomen similar to thorax above, with dark scaling tending to be concentrated on anterior one-half and along posterior margin of each segment, produced banded appearance; paler below.

**UPPER SURFACE OF WINGS:** Forewings white or whitish gray, more or less heavily suffused with brown, grayish black, and black scales, and a pale yellowish brown band along inner margin; median area paler than adjacent areas; veins in outer portion of wing tending to be yellowish brown; cross lines black, with prominent orange-brown or dark reddish brown shade bands; t. a. line broadly curved into cell, then proceeding basally to inner margin, concave in cells; median line weakly represented, apparently including

ovate discal spot, and proceeding down middle of median area; t. p. line crossing costa at right angle, slightly thickened outwardly on veins, curving basad but not noticeably thickened, then subparalleling outer margin to inner margin, with outward bows below vein  $Cu_2$  and anal vein; s. t. line complete but weakly represented, white, strongly angled outward in cells; subterminal and terminal areas with nebulous dark streak in upper portion extending from t. p. line to outer margin, and entire lower portion of wing tending to be pale; terminal line black, narrow, curving inward to black intravenular dots; fringe either entirely concolorous with wing or with basal portion white. Hind wings concolorous with forewings, median area slightly paler than remainder of wing; maculation as on forewings, with incomplete, diffuse, intradiscal line, and curved, prominent extradiscal line in lower part of wing; discal spot small, weakly defined; s. t. line similar to that of forewing.

**UNDER SURFACE OF WINGS:** Unicolorous whitish gray, with pale brownish gray scaling along costa of forewings and weakly in-

licated on all veins; without maculation except for faint trace of cross lines and discal spot on forewings.

LENGTH OF FOREWING: 18 to 20 mm.; holotype, 20 mm.

FEMALE: Similar to male, but with more dark scaling on upper surface of wings, and t. a. and t. p. bands a darker reddish brown. Under surface of forewing with incomplete, grayish black subterminal band at apex.

LENGTH OF FOREWING: 21 mm. (allotype).

MALE GENITALIA: Similar to those of *anellula* but differing mainly as follows: uncus with apical section slightly shorter and broader; gnathos with median projection longer; costal arm longer, about 0.5 mm. in length, with more prominent shoulder; apex of arm with elongate, heavy spine at apex and second smaller spine on sloping anterodistal surface; aedeagus 2.5 mm. in length, equal to combined lengths of uncus, tegumen, and saccus.

FEMALE GENITALIA: Similar to those of *anellula* but differing mainly as follows: sterigma with fewer semicircular concentric ridges, anterior ones extending into opening of ductus bursae; corpus bursae shorter, with wider and less striate posterior portion; apophyses posteriores 1.8 mm. in length; apophyses anteriores, 1.0 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, male, Barton Flats, San Bernardino County, California, July 9, 1946 (G. H. and J. L. Sperry); allotype, female, Upper Santa Ana River, San Bernardino County, California, July 11, 1946 (G. H. and J. L. Sperry). The genitalia of the holotype are mounted on slide F.H.R. No. 8501; of the allotype, on F.H.R. No. 13351. Paratypes, all from California: Same data as holotype, one male; some data as allotype but June 29, 1948, one male; Bailey Peak, Panamint Mountains, Inyo County, July 4, 1940 (C. Henne), two males; Tom's Place, Mono County, elevation 7200 feet, September 3, 1961 (R. Leuschner), one male; 1 mile west of Tom's Place, Mono County, August 13, 1957 (J. Powell), two males.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of

that institution, of the Los Angeles County Museum of Natural History, of the California Insect Survey, University of California, Berkeley, and of R. H. Leuschner.

DISTRIBUTION: This species is only known from the mountains in, or adjacent to, the Mojave Desert and Great Basin area of southern and eastern California (see fig. 8).

TIME OF FLIGHT: The adults have been captured from late June into early September.

REMARKS: Nine specimens (eight males and one female) and five genitalic dissections (four males and one female) have been studied.

The genitalia of this species are similar to those of *anellula*. The male structures are most easily recognized by the spining at the tip of the costal arm, whereas those of the female show differences in the configuration of the sterigma.

There is some variation in the color of the upper side of the wings of the specimens in the type series. The two males from the Panamint Mountains are paler and more yellowish brown than the ones from the San Bernardino Mountains. The three males from Mono County are more heavily suffused with black than any of the other specimens. These moths were caught in August and September, so they could represent the summer generation, whereas the other specimens, caught in June and July, belong to the spring generation. More material is needed before the problems of geographical and seasonal variation within this species can be solved.

#### *Stenoporpia macdunnoughi*<sup>1</sup> Sperry

Plate 5, figure 5, plate 10, figure 5, plate 15, figure 3

*Stenoporpia anellula* auct.: McDUNNOUGH, 1920, pl. 4, fig. 3 (male genitalia); 1945, p. 100.

*Stenoporpia mcdunnoughi* SPERRY, 1938, p. 143.

This species can be recognized by its pale wings with wide reddish brown bands next to the cross lines, and by the prominent discal spots. It occurs in the southern Rocky Mountain states and in the Black Hills.

<sup>1</sup> The spelling of the specific name has been altered to conform with appendix D, section III, paragraph 21a of the International Code of Zoological Nomenclature, London, 1964.



**MALE:** Head with vertex white or pale grayish white, with broad brownish black band between antennal bases; front blackish brown or blackish gray, with a few light gray scales across top and wide light gray area across bottom; palpi brownish gray, becoming darker apically. Thorax above grayish white, with broad grayish black band across end of collar, and narrow, dark band across patagia and thorax of some specimens; below whitish; legs whitish, forelegs and tarsi pale brown; hind tibia without hair pencil. Abdomen grayish white above, with brownish gray and brownish black scaling posteriad of first segment, and black bands on posterior margins of segments, these becoming weaker and less marked posteriorly; below paler.

**UPPER SURFACE OF WINGS:** Forewings whitish tan, with much of basal and outer portions of wings occupied by broad reddish brown or dark brownish red shade bands next to t. a. and t. p. lines, thus contrasting against paler median area of wing; cross lines black or dark reddish brown; t. a. line weak, running obliquely outward from costa, angled into cell and again at both cubital and anal veins; median line obsolescent, curving from costa to prominent, black discal dot, usually not represented in center of wing, reappearing in middle of posterior portion of pale median area; t. p. line prominent, outwardly bidendate below costa, broadly curving and subparalleling outer margin, with basal bends in middle and in lower portion of wing; s. t. line absent; terminal area slightly darker in color than median area, with grayish black scaling in cells  $R_5$ ,  $M_1$ ,  $M_2$ , and  $Cu_2$ ; terminal line absent or obsolescent, when present black, narrow, interrupted by veins, and with recessed intravenular spots in all specimens; fringe concolorous with wing. Hind wings concolorous with forewings, basal and median areas paler than outer area; maculation as on forewings, with incomplete, diffuse intradiscal line, and prominent, concave extradiscal line present in lower part of wing; discal spot large, elongate, with whitish gray scales in center; s. t. line broad, diffuse, indicated by grayish black distal shading; terminal line stronger than on forewings.

**UNDER SURFACE OF WINGS:** Unicolorous whitish tan, with pale brownish gray scaling along costa of forewings; without maculation

except for discal spots and outer cross lines showing through from upper surface.

**LENGTH OF FOREWING:** 18 to 22 mm.

**FEMALE:** Similar to male but tending to have more gray scaling on upper surface of wings, and shade bands tending to be browner in some specimens.

**LENGTH OF FOREWING:** 19 to 22 mm.

**MALE GENITALIA:** Uncus broadly triangular, with apical section somewhat attenuate and curved ventrally, broad, ventral surface concave, apex rounded or concave medially between weakly defined points; gnathos with finely spiculate, elongate, pointed median projection; valve with apex truncate; costal arm slightly shorter than valve, 0.5 to 0.6 mm. in length, extending slightly obliquely inward across inner face of valve after leaving poorly defined shoulder; apex of arm bluntly rounded, with one large spine at outer angle and from one to four smaller spines mediad thereto; cristae a large prominent patch on each side of slender anellus; aedeagus 2.8 to 3.1 mm. in length, longer than combined lengths of uncus, tegumen, and saccus, with posterior end pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma with median area bounded by numerous small, concentric, semicircular ridges, with a few anterior ones extending into opening of ductus bursae; wide membranous anterior portion with outwardly curving anterolateral areas connected medially by gently curved, transverse, sclerotized strip just posteriad of sclerotized section of ductus bursae; latter broad posteriorly, with rectangular sclerotized area with wide dorsolateral folds, and with short membranous anterior section joining corpus bursae posteriorly; ductus seminalis arising from corpus bursae on right side near posterior end; corpus bursae elongate, with narrow, longitudinally striate and finely punctate posterior section, and bulbous anterior section; signum dorsal, weakly invaginated, variable in size, shape, and ornamentation, usually ovoid, with narrow, more or less weakly stellate anterior margin, and with a few small teeth on central area; apophyses posteriores 1.9 to 2.5 mm. in length; apophyses anteriores, 1.0 to 1.4 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** The holotype, male, and allotype,

female, are in the Canadian National Collection, Ottawa.

TYPE LOCALITY: Estes Park, Larimer County, Colorado.

DISTRIBUTION: Colorado, Utah, Arizona, and New Mexico (see fig. 9). The author has also taken this species on the Wyoming side of the Black Hills; presumably *macdunnoughi* also occurs in South Dakota.

TIME OF FLIGHT: The moths have been captured from May into October.

REMARKS: A total of 240 specimens (138 males and 102 females) and 21 genitalic dissections (13 males and eight females) have been studied.

There is some variation within *macdunnoughi* as to the color of the upper surface of the wings. Most specimens have the broad reddish brown bands on the pale wings, so are easily recognized. No other species in the genus resembles this, although *Merisca gracea* Hulst may be deceptively similar at first glance. A few examples of *macdunnoughi* may be more or less heavily suffused with gray, and these might be confused with *pulmonaria pulmonaria*. The latter is normally a much grayer moth than *macdunnoughi*, and it usually has a well-defined s. t. line on both the primaries and secondaries. A genitalic dissection can be used to separate the two species, as good characters are present in both sexes.

The male genitalia of *macdunnoughi* are similar to those of the other species of this group. They can be recognized by the nature of the spining at the end of the costal arm. The aedeagus is longer in this species than in the three preceding ones.

There is some variation in the number of spines at the end of the costal arm. Specimens from the southern portion of the range tend to have fewer small spines than examples from more northern localities.

The female genitalia also show a close relationship to these structures of the preced-

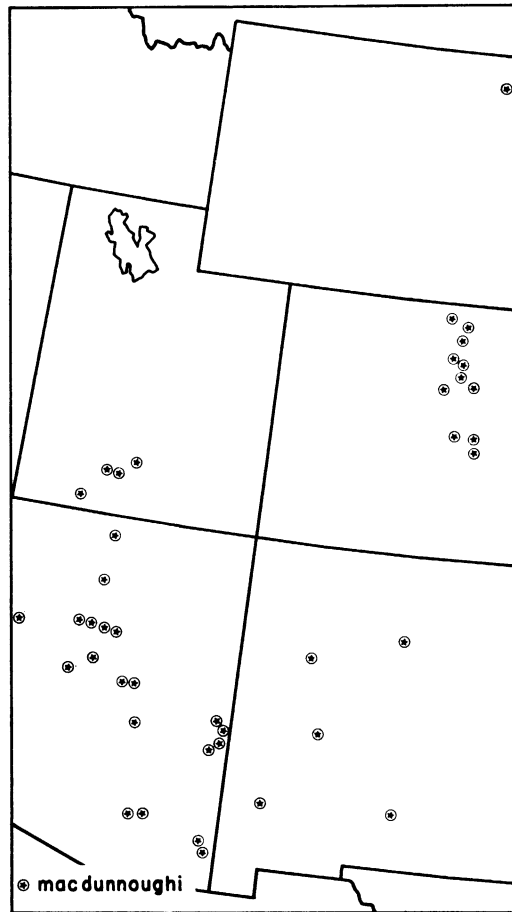


FIG. 9. Distribution of *Stenoporpia macdunnoughi* Sperry.

ing species. The structures of *macdunnoughi* can be recognized by the fact that the outwardly curved anterolateral areas are connected by a well-sclerotized strip.

The signum is quite variable in size, shape, and ornamentation. Variation may also apply to the number, as in one preparation there are three complete and separate signa arranged in a triangle, instead of the usual single structure.

## GROUP VI

The included species are medium to large in size. The upper surface of the wings is gray, dark gray, or grayish brown, and distinct cross lines are present; some of the species have a broad prominent band distad of

the t. p. line and others do not. The discal dots vary from being large to small or obsolescent, and they usually are not prominent. The males of three of the species possess a tibial hair pencil; the males of two species

are imperfectly known, and the remaining five species do not have this hair pencil.

The male genitalia have a broad uncus, the median enlargement of the gnathos varies from long and slender to very small, and the tip of the costal arm is truncate, bluntly rounded, or wedge-shaped.

In the female genitalia the anterolateral areas of the sterigma vary from being either smoothly rounded or weakly lobate to being united medially to form a single, large protuberance.

This is the largest group, as the following 10 species are included here: *blanchardi*, *glaucomarginaria*, *separataria*, *excelsaria*, *larga*, *cuneata*, *regula*, *graciella*, *lea*, and *bulbosa*.

***Stenoporpia blanchardi*,<sup>1</sup> new species**

Plate 5, figure 6, plate 11, figure 1, plate 15  
figure 4

The adults of this species are smaller and have a more grayish brown upper surface than do the moths of *macdunnoughi*. This species is known only from western Texas.

**MALE:** Head with vertex gray, becoming grayish brown between antennal bases; front blackish brown, with dark gray bands across top and bottom; palpi dark brownish gray. Thorax gray above, many scales grayish black near their ends, these tending to be concentrated at end of collar; whitish below; legs sparsely covered with whitish scales, with forelegs, tibia, and tarsi of middle legs dark grayish brown; hind tibia with hair pencil. Abdomen gray above, first segment paler, remaining segments with scattered grayish black scales and narrow black posterior margin; paler below.

**UPPER SURFACE OF WINGS:** Forewings gray, heavily and evenly overlain with dark gray, brownish gray, and black scales; faint pale brownish gray band along inner margin; cross lines black, obsolescent along costa; t. a. line slender, weakly curved from middle of cell to inner margin and preceded by broad, diffuse, dark brownish gray band; median line faint, curving around weakly represented discal spot, swinging toward t. a. line

at cubital vein, then toward t. p. line in middle of cubital cell; t. p. line extending from vein  $M_1$ , parallel with outer margin, but with two slight basal bends, to inner margin, and situated about 1.0 or 1.5 mm. from t. a. line; outer shade band dark brownish gray, not particularly prominent, separated from t. p. line by row of pale gray scales, continued outwardly to outer margin in upper part of wing; lower portion of subterminal area pale gray; s. t. line grayish white, more prominent in middle and lower portions of wing, angled outward into cells and bordered distally by black; terminal line black, obsolescent, with intravenular dots; fringe concolorous with wing. Hind wings concolorous with forewings; maculation as on forewings, with weakly represented intradiscal line, and prominent extradiscal line having basal bend in cell  $Cu_1$ ; terminal line stronger than on forewings.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale brownish gray scaling along costa of forewing and on some veins; maculation absent except for faint traces of t. p. line and dark subterminal clouding at apex of forewings, and for narrow brownish gray terminal line.

**LENGTH OF FOREWING:** 16 to 19 mm.; holotype, 19 mm.

**FEMALE:** Similar to male but tending to be more suffused with brownish and grayish black scales; t. a. and t. p. lines about 2 mm. apart.

**LENGTH OF FOREWING:** 18 to 21 mm.; allotype, 18 mm.

**MALE GENITALIA:** Uncus elongate, with weak median constriction, apical section attenuate, apex rectangular, about 0.15 mm. in width; gnathos with small median enlargement having median ridge; valve with apex pointed; costal arm narrow, shorter than valve, 0.3 to 0.4 mm. in length; apex of arm rounded, bearing one large spine apically, and from one to three much smaller spines at base of large spine; cristae a large patch on each side of very slender anellus; aedeagus 2.1 to 2.2 mm. in length, shorter than combined lengths of uncus, tegumen, and saccus, relatively thick, about 0.3 mm. in diameter, with posterior end pointed; vesica unarmed.

**FEMALE GENITALIA:** Sterigma slender, with many more or less concentric ridges, these tending to become somewhat attenu-

<sup>1</sup> It gives me pleasure to name this species in honor of Mr. Andre Blanchard, of Houston, Texas. His collecting during the past few years has done much to increase our knowledge of the Lepidoptera of Texas.

ate anteromedially and extending into opening of ductus bursae; anterolateral areas slightly raised, and with large, swollen, smoothly sclerotized, pouchlike areas extending dorsolaterally, and connected medially by membranous strip extending across posterior margin of sclerotized portion of ductus bursae; latter elongate, with broad dorsolateral folds, and short membranous area connecting anteriorly with corpus bursae; ductus seminalis arising from corpus bursae posteroventrally; corpus bursae with narrow, tapering, longitudinally striate posterior section and swollen anterior portion; signum weakly invaginated, ovoid, with narrow, angulate, weakly dentate anterior margin, and with a few weak ridges on central area; apophyses posteriores 1.8 to 1.9 mm. in length; apophyses anteriores, 1.0 to 1.1 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, male, Basin, Big Bend National Park, Texas, April 9, 1967 (A. and M. E. Blanchard); allotype, female, same data, October 4, 1967. The genitalia of the holotype are on slide F.H.R. No. 14635; of the allotype, on F.H.R. No. 14957. Paratypes, all from western Texas: Same data as types, April 7, 9, 1967, October 2, 1966, October 2, 4, 1967 (A. and M. E. Blanchard), September 27, 1950, elevation 3000–4000 feet (W. Gertsch and M. Cazier), four males and seven females; Green Gulch, Big Bend National Park, October 2, 1966, October 2, 1967 (A. and M. E. Blanchard), two males; Mt. Locke, Davis Mountains, Jeff Davis County, August 25, 1967, elevation 6700 feet (A. and M. E. Blanchard), two males.

Both primary types are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution and of A. Blanchard.

DISTRIBUTION: This species is known only from western Texas (see fig. 10).

TIME OF FLIGHT: April, August, September, and October.

REMARKS: Seventeen specimens (nine males and eight females) and seven genitalic dissections (five males and two females) have been studied.

The male genitalia are somewhat similar to *macdunnoughi* in the nature of the costal arms, but the broader apex of the uncus and



FIG. 10. Distribution of *Stenoporpia blanchardi*, new species, and *S. glaucomarginaria* McDunnough.

the different gnathos will separate these two species.

The female genitalia of *blanchardi* have a narrower sterigma and a wider, more sclerotized and striate neck of the corpus bursae than does *macdunnoughi*.

***Stenoporpia glaucomarginaria* McDunnough**

Plate 5, figure 7, plate 11, figure 2, plate 15, figure 5

*Stenoporpia purpuraria* auct.: McDUNNOUGH, 1940, p. 91.

*Stenoporpia glaucomarginaria* McDUNNOUGH, 1945, p. 100.

This variable species can usually be recognized by its dark coloration, and by the red-

dish brown scaling along the inner margin of the forewing, which is often extended up the broad shade band outside the t. p. line. Many specimens have a reddish brown streak along vein  $M_1$  extending outward from the t. p. line. This species, which occurs in Colorado, New Mexico, Arizona, and Durango, has good genitalic characters.

**MALE:** Head with vertex gray or dull purplish gray, with dark gray scales between bases of antennae; front black or blackish gray, some paler scales ventrally; palpi grayish brown or grayish black, becoming darker apically. Thorax grayish black or dull purplish gray above, some specimens with blackish gray band across end of collar and narrow dark band across patagia and thorax; below whitish; legs whitish, forelegs and tarsi pale brown; hind tibia with small hair pencil. Abdomen above grayish black, with first segment pale gray, and narrow bands anterior of black terminal marginal stripes; below paler.

**UPPER SURFACE OF WINGS:** Forewings grayish white, heavily and evenly overlain with blackish brown and dark brownish gray scales except in median area; pale reddish brown band present along inner margin, and in many specimens extending up darker shade band distad of t. p. line; reddish brown scaling on veins  $M_1$ ,  $M_3$ , Cu, and  $Cu_1$ ; cross lines black; t. a. line angled outward into cell, then curving basad and subparalleling costa to inner margin; median line absent from most specimens, when present usually situated near t. a. line; discal dot small, weakly represented; t. p. line outwardly bidentate below costa, then becoming prominent and proceeding, with two moderate basal bends, to inner margin; shade band basad of t. a. line blackish brown, not prominent, and band distad of t. p. line reddish brown, separated by narrow row of white scales from line; subterminal area largely reddish brown, especially on vein  $M_1$ , in cells  $M_2$  and  $M_3$ , and above inner margin, becoming brownish black below costa and between brown areas; s. t. line white, varying from being complete to a patch in cell  $M_2$ ; terminal area brownish black except reddish brown at apex and on some veins; terminal line black, incomplete, with intravenular dots; fringe concolorous with wing. Hind wings concolorous with fore-

wings, basal portion either slightly paler than, or concolorous with, outer portion; maculation as on forewings, with weakly represented intradiscal line and prominent extradiscal line except in anterior portion of wing, with dark reddish brown shade band distad of extradiscal line, and more or less complete, usually narrow s. t. line; terminal line stronger than on forewing.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale grayish brown scaling along costa of forewing and on some veins; maculation absent; weak gray subterminal band present at apex of forewing in some specimens.

**LENGTH OF FOREWING:** 18 to 23 mm.

**FEMALE:** Similar to male but with less reddish brown scaling above and tending to have heavier black scaling on upper surface of wings.

**LENGTH OF FOREWING:** 18 to 21 mm.

**MALE GENITALIA:** Uncus broadly triangular, with apical section attenuate, apex square or shortly rectangular, wide, 0.2 mm. in width, tip of apex concave between lateral points; gnathos with small, inverted V-shaped, median enlargement having more or less prominent median ridge; valve with apex pointed; costal arm narrow, shorter than valve, 0.4 mm. in length; apex of arm rounded and curving outward, bearing on outer angle three equal-sized, closely set spines at sharp angle to axis of arm; cristae a large prominent patch on each side of very slender anellus; aedeagus 2.2 to 2.6 mm. in length, shorter than combined lengths of uncus, tegumen, and saccus, relatively thick, about 0.3 mm. in diameter, gently curved posterior end painted; vesica unarmed.

**FEMALE GENITALIA:** Sterigma with median area bounded anterolaterally by small U- or V-shaped ridges, these tending to become somewhat attenuate medially and extending into opening of ductus bursae; anterolateral areas slightly raised and striate on each side of elongate ductus bursae, and with large, swollen, smoothly sclerotized, pouch-like areas connected medially by weakly sclerotized strip extending anterior to posterior margin of sclerotized portion of ductus bursae; latter with broad dorsolateral folds, and with short membranous area connecting posteriorly with corpus bursae; ductus semin-

alis arising from corpus bursae posteroventrally; corpus bursae with narrow, tapering, longitudinally striate posterior section, and with swollen anterior portion; signum dorsal, somewhat variable in size and shape, weakly invaginated, ovoid, with narrow, weakly dentate anterior margin, and with a few weak teeth on central area; apophyses posteriores 1.9 to 2.1 mm. in length; apophyses anteriores 1.0 to 1.1 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, male, C.N.C. No. 5568.

TYPE LOCALITY: "Possibly White Mountains," Arizona.

DISTRIBUTION: This species is known from Arizona, New Mexico, and Colorado (see fig. 10). A single male has been examined from the mountains (elevation 9000 feet) of Durango that is referable to this species.

TIME OF FLIGHT: The moths have been taken in June, July, and August.

REMARKS: A total of 376 specimens (320 males and 56 females) and 26 genitalic dissections (20 males and six females) have been studied.

The male genitalia of *glaucomarginaria* can be separated from those of all the preceding species by the broad uncus and the wider aedeagus; in addition, the tip of the costal arm can be used to distinguish *blanchardi* and *glaucomarginaria*.

The female genitalia are like those of the species of group V, with concentric ridges on the sterigma. The structures of the present species can be recognized by the relatively smaller ridged area and by the longer, weakly raised anterior portion leading into the ductus bursae.

There is considerable variation from population to population in this species. Some of the more noticeable variations are: adults from Gila County, Arizona, and Grant County, New Mexico, tend to be quite dark, without much reddish brown scaling; those from Coconino and Apache counties, Arizona, are large, bright, and contrastingly marked; those from Colorado are small, with a paler and contrastingly colored median area on the forewings. When series of individuals are obtained from other localities, it is possible that their variations will be recognizable. It now appears that specimens from southern local-

ities at lower elevations tend to be darker and more unicolorous than northern moths from higher elevations.

#### *Stenoporpia separataria* (Grote)

Plate 5, figure 8, plate 11, figure 3, plate 15, figure 6

*Cymatophora* (*Boarmia*) *separataria* GROTE, 1883, p. 124.

*Cymatophora separataria*: McDUNNOUGH, 1920, p. 9.

*Boarmia separataria*: SMITH, 1891, p. 72.

*Selidosema separataria*: DYAR, "1902" [1903], p. 324. SMITH, 1903, p. 77.

*Cleora separataria*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia separataria*: McDUNNOUGH, 1927, p. 227; 1938, p. 164. BOWMAN, 1951, p. 150. PRENTICE, 1963, p. 448, fig. 280 (distribution in Canada).

*Stenoporpia umbraria* McDUNNOUGH, 1925, p. 11, pl. 2, fig. 5 (male genitalia); 1927, p. 277 (synonym of *separataria*).

Although the genitalia of *separataria* are similar to those of *glaucomarginaria*, the moths are entirely different in appearance. The present species can be recognized by its uniformly gray upper surface, with large discal spots on the forewings, and curving, often dentate, t. p. and extradiscal lines. It occurs in the Rocky Mountains from southern Alberta and British Columbia to Arizona and New Mexico.

MALE: Head with vertex pale gray or grayish white, with a few dark grayish brown scales, the latter tending to be concentrated between antennal bases; front blackish brown with narrow pale area across top and large rounded whitish area below; palpi brownish gray, becoming darker apically. Thorax pale gray or grayish white above, with variable number of dark grayish brown scales, latter tending to be concentrated at end of collar and as narrow band across patagia and thorax; below whitish; legs whitish or pale brownish white, with dark grayish brown scaling on forelegs and most tarsi; hind tibia with small hair pencil in groove. Abdomen grayish white above, posteriad of first segment with numerous dark brownish gray and black scales, and posterior margins of segments narrowly marked with black; below paler.

UPPER SURFACE OF WINGS: Forewings

pale gray, with scattered but evenly distributed white, dark gray, dark brownish gray, and black scales; cross lines black, weakly shaded by brownish gray bands; t. a. line directed outward to cell, then angled basally and proceeding to inner margin with outward bends on cubital and anal veins; median line weak or obsolescent, curving around prominent discal spot, and approximating t. p. line in lower portion of wing; t. p. line outwardly bidentate below costa, then becoming prominent, subparalleling outer margin, with broad basal bends in middle and lower parts of wing, and having outwardly directed teeth on veins; s. t. line variable in strength, when present narrow, grayish white, angled outward in cells, and shaded distally by brownish black scales; terminal line black, narrow, interrupted by veins, and with intravenular spots, those in cells  $R_5$ ,  $M_1$  and  $M_2$  often connected to outer shading of s. t. line; fringe concolorous with wing. Hind wings concolorous with forewings; maculation as on forewings, with incomplete, diffuse intradiscal line, and prominent, slightly curved extradiscal line, outwardly dentate on veins in most specimens; discal spot rounded, smaller than on forewings; outer portion of wings similar to that of forewing, but with stronger terminal line.

**UNDER SURFACE OF WINGS:** Unicolorous pale creamy gray, with pale brownish gray scaling along costa of forewings and on veins; most specimens without maculation, some with faint discal dots and narrow terminal line.

**LENGTH OF FOREWING:** 15 to 21 mm.

**FEMALE:** Similar to male.

**LENGTH OF FOREWING:** 15 to 21 mm.

**MALE GENITALIA:** Similar to those of *glaucomarginaria*, but differing mainly as follows: uncus tending to be slightly more elongate and thinner; costal arm with apex bearing from two to seven spines at end, directed somewhat obliquely outward; aedeagus shorter and narrower, being 2.0 to 2.2 mm. in length and 0.25 mm. in diameter.

**FEMALE GENITALIA:** Similar to those of *excelsaria*, but differing mainly as follows: sterigma larger, triangular, with more V-shaped ridges extending into opening of ductus bursae, area near posterior portion of ductus bursae reduced in size; anterolateral

areas large but not pouchlike; apophyses posteriores 1.5 to 1.8 mm. in length; apophyses anteriores, 0.8 to 0.9 mm.

**EARLY STAGES:** Undescribed.

**FOOD PLANTS:** *Pseudotsuga menziesii* (Mirbel) Franco (Douglas fir), and *P. menziesii* var. *glauca* (Mayr) Sudworth (blue Douglas fir) (Prentice, 1963, p. 449).

**TYPES:** Grote apparently described *separataria* from a single male specimen; it is U.S.N.M. No. 34274. All that remains of it are the wings, head, and part of the thorax, glued on a card.

The holotype, male, of *umbraria* McDunnough, is C.N.C. No. 956.

**TYPE LOCALITIES:** Arizona (*separataria*); Cameron Creek, Waterton Lakes, Alberta (*umbraria*).

**DISTRIBUTION:** From Arizona and New Mexico, north in the Rocky Mountains to eastern Oregon, southern interior British Columbia and southwestern Alberta (see fig. 11; Prentice, 1963, fig. 280, for Canadian distribution).

**TIME OF FLIGHT:** The adults are normally taken from late May into September; two moths have been examined that were dated March.

**REMARKS:** A total of 1033 specimens (642 males and 391 females) and 29 genitalic dissections (21 males and eight females) have been studied, including the type of *separataria*.

The male genitalia of *separataria* are very much like those of *glaucomarginaria*, although the moths do not resemble each other. The structures of the present species can be recognized by the different spining at the apex of the costal arm and by the smaller aedeagus.

The female genitalia are also quite similar to those of the preceding species. These structures in *separataria* can be recognized by the much larger triangular sterigma and by the shorter apophyses.

#### **Stenoporpi excelsaria** (Strecker)

*Boarmia excelsaria* STRECKER, 1899, p. 10.

This species can be separated from all the preceding ones by its large size, and by its gray upper surface with black maculation. The genitalia also have good characters by which to recognize it.



The species is divided into two populations. Nominate *excelsaria* lacks the heavy, black shade bands to the cross lines; it occurs in coastal Oregon, Washington, and British Columbia. The second subspecies possesses prominent shade bands; it occurs from interior British Columbia to New Mexico and Arizona.

***Stenoporpia excelsaria excelsaria* (Strecker)**

Plate 6, figure 1

*Boarmia excelsaria* STRECKER, 1899, p. 10.

*Selidosema excelsaria*: DYAR, "1902" (1903), p. 325; 1905, p. 93. SMITH, 1903, p. 77.

*Cleora excelsaria*: BARNES AND McDUNNOUGH, 1917a, p. 117.

*Stenoporpia excelsaria*: McDUNNOUGH, 1920, p. 26 (*partim*); 1925, p. 11, pl. 2, fig. 6 (male genitalia); 1938, p. 164. JONES, 1951, p. 131.

This subspecies has paler-colored wings, as it lacks the heavy black shade bands next to the cross lines that are to be found in the next subspecies. This population occurs in coastal Oregon, Washington, and British Columbia.

MALE: Head with vertex white, and with gray scales between bases of antennae; front brownish gray or brownish black, paler ventrally; palpi brownish gray, darkening apically. Thorax above whitish gray, with pale brownish white scales, and grayish black band across end of collar and narrow dark band across patagia and thorax; below whitish; legs whitish, forelegs and tarsi pale brown; hind tibia without hair pencil. Abdomen above whitish gray, with brownish gray and brownish black scaling posteriad of first segment, and black bands on posterior margins of segments; below paler.

UPPER SURFACE OF WINGS: Forewings pale grayish white, with numerous brownish gray and grayish black scales; median area concolorous with remainder of wing; cross lines black, without noticeable shade bands; t. a. line relatively weak, curving evenly outward and then basally, slightly irregular in course; median line obsolescent, curving outward to include rather poorly defined discal spot, then angled posteriorly and proceeding more or less straight to inner margin, becoming slightly thickened on veins; t. p. line outwardly bidentate below costa, then becoming prominent and proceeding almost straight to inner margin, with outward teeth on veins;

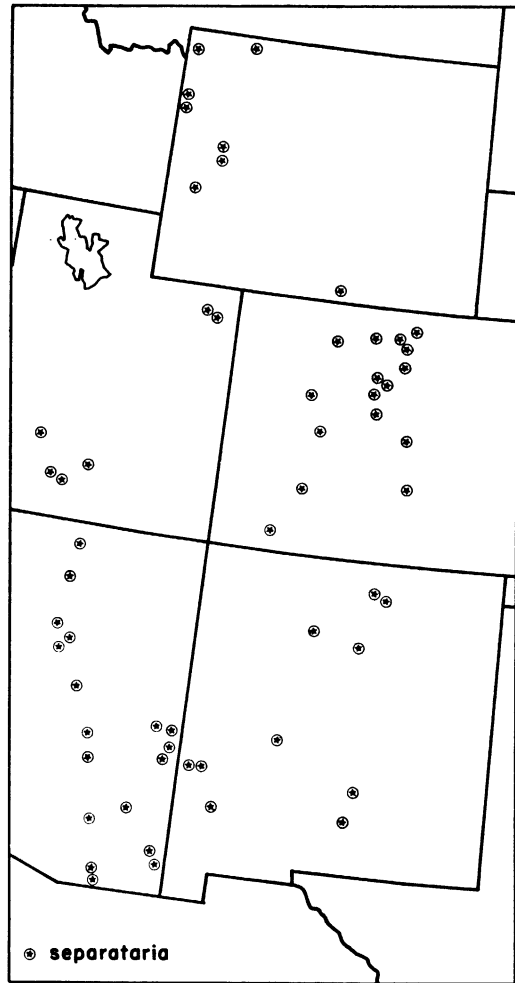


FIG. 11. Distribution of *Stenoporpia separataria* (Grote) in the United States.

subterminal area darkened between veins  $M_2$  and  $Cu_1$ , then paler to inner margin; s. t. line white, complete, slightly irregular in course; terminal line weak, interrupted by veins, and with poorly defined intravenular spots; fringe concolorous with wing, with basal portion white. Hind wings unicolorous, concolorous with forewings; maculation as on forewings, with incomplete, diffuse, intradiscal line and with prominent extradiscal line except in anterior portion of wing; discal spot absent; outer portion of wing similar to that of forewing, but with stronger terminal line.

UNDER SURFACE OF WINGS: Unicolorous whitish gray, with pale brownish gray scaling along costa of forewings and on veins; with-

out maculation except for outer cross lines showing through from upper surface.

LENGTH OF FOREWING: 20 to 22 mm.

FEMALE: Similar to male but tending to be more heavily suffused with grayish black and black scales on upper surface.

LENGTH OF FOREWING: 20 to 22 mm.

MALE GENITALIA: Similar to those of *glaucomarginaria*, but differing mainly as follows: valves with apex bluntly pointed; costal arm broad, 0.3 mm. in length; apex of arm broadly truncate, and bearing from three to six spines of equal size, or posterodistal one largest; aedeagus 2.2 to 2.5 mm. in length and 0.25 mm. in diameter.

FEMALE GENITALIA: Similar to those of *glaucomarginaria*, but differing mainly as follows: sterigma with numerous ridges and anterolaterally with moderate pouchlike areas; apophyses posteriores 1.8 to 2.0 mm. in length; apophyses anteriores, 0.95 to 1.05 mm.

EARLY STAGES: Undescribed.

FOOD PLANT: *Pinus contorta latifolia* Engelman (lodgepole pine; Jones, 1951, p. 131).

TYPE: Strecker described *excelsaria* from a single female; this specimen is in the collection of the Field Museum of Natural History, Chicago.

TYPE LOCALITY: Seattle, King County, Washington.

DISTRIBUTION: The coastal regions of Oregon, Washington, and Vancouver Island, British Columbia (see fig. 12).

TIME OF FLIGHT: The moths have been caught in June and July.

REMARKS: Sixteen specimens (nine males and seven females) and four genitalic dissections (two males and two females) have been studied, including the type.

The male genitalia of *excelsaria* are recognizable by the wider and shorter costal arm, with the apex truncate, and with three to six spines of equal size.

The female genitalia are quite similar to those of *glaucomarginaria*, but the differences in the sterigma can be used to separate them.

A single female from Benton County, Oregon, July, has been examined from the Kirkwood collection. The maculation of this individual is darker and more striking than that of the other females studied. Its coastal distribution, however, indicates that it probably

belongs with nominate *excelsaria*, notwithstanding its darker coloration, rather than with the following subspecies.

***Stenoporpia excelsaria pullata*,  
new subspecies**

Plate 6, figure 2, plate 11, figure 4, plate 16,  
figure 1

*Stenoporpia excelsaria*: McDUNNOUGH, 1920, p. 26 (*partim*), pl. 8, fig. 4 (male genitalia); 1938, p. 164 (*partim*).

This subspecies has darker wings above than does nominate *excelsaria*, primarily owing to the broad black shade bands next to the cross lines. It occurs from southern interior British Columbia to Arizona, New Mexico, and Durango.

MALE: Head, thorax, and abdomen similar to those of nominate *excelsaria* but with more dark scaling.

UPPER SURFACE OF WINGS. Similar to that of nominate *excelsaria* but with more grayish black and black scaling; all cross lines heavier and more prominent, with t. a. and t. p. lines from 2 to 3 mm. apart; wide black shade bands beside cross lines; median area pale gray, contrasting with remainder of wing.

UNDER SURFACE OF WINGS: Similar to that of nominate *excelsaria*.

LENGTH OF FOREWING: 18 to 21 mm.; holotype, 21 mm.

FEMALE: Similar to male but tending to be more heavily suffused with grayish black and black scales on upper surface.

LENGTH OF FOREWING: 17 to 21 mm.; allotype, 20 mm.

MALE GENITALIA: Similar to those of nominate subspecies.

FEMALE GENITALIA: Similar to those of nominate subspecies, but with raised striate areas of sterigma narrower at opening of ductus bursae; apophyses posteriores 1.7 to 2.1 mm. in length; apophyses anteriores, 0.9 to 1.2 mm.

EARLY STAGES: Undescribed.

FOOD PLANTS: Reared specimens from British Columbia had the following hosts: *Pseudotsuga menziesii* (Mirbel) Franco (Douglas fir; 15 moths), *Pinus contorta latifolia* Engelman (lodgepole pine; one moth), *Pinus ponderosa* Lawson (ponderosa pine; three moths).

TYPES: Holotype, male, Reuter Canyon

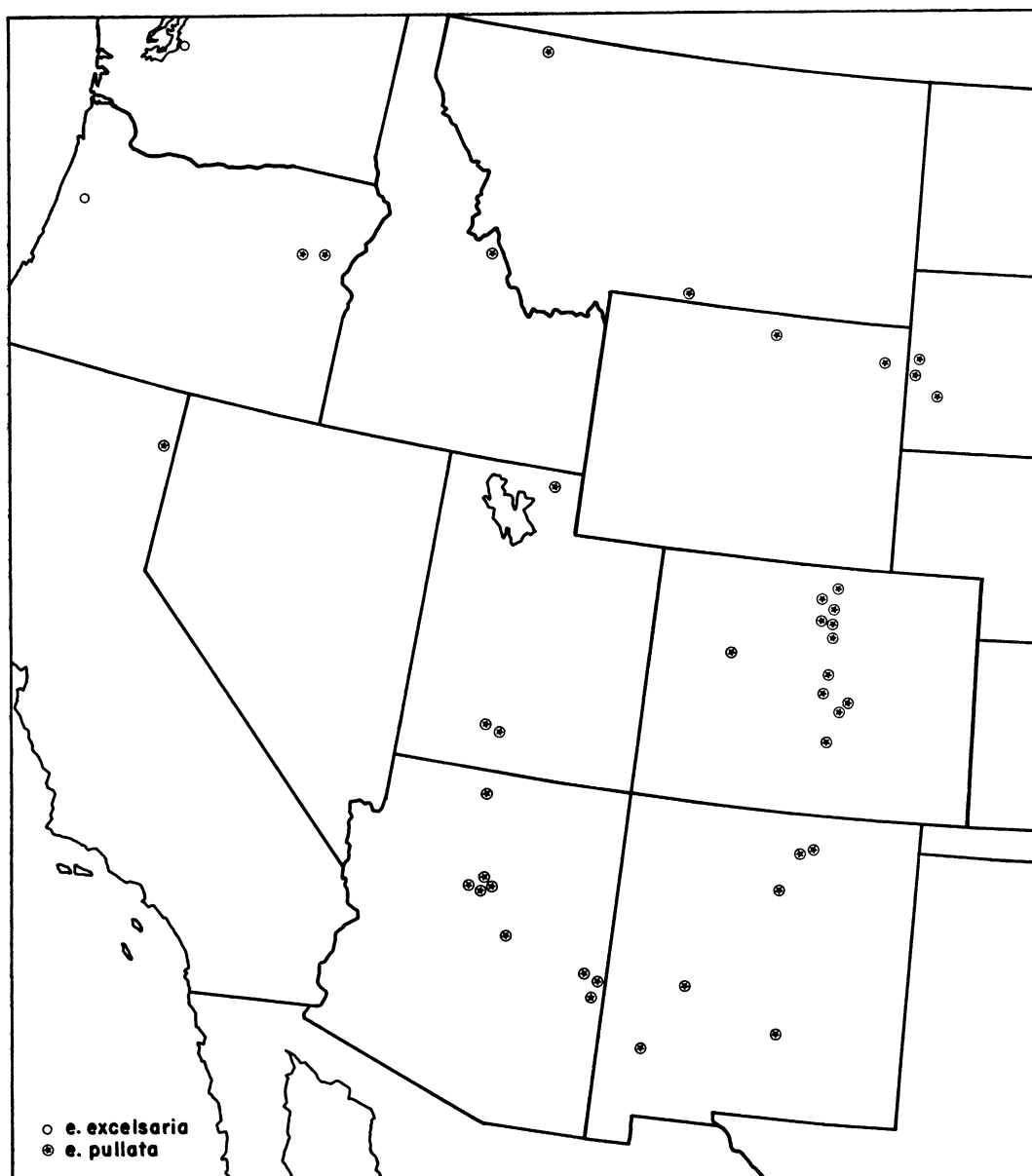


FIG. 12. Distribution of *Stenoporpia excelsaria* (Strecker) in the United States.

Camp, 5 miles north of Sundance, Crook County, Wyoming, elevation 5900 feet, July 2, 1962 (F., P., and M. Rindge); allotype, female, same data, July 9, 1962. The genitalia of the holotype are on slide F.H.R. No. 14585; of the allotype, on F.H.R. No. 14522. Paratypes: Same data as types, July 10–14, 1959 (F., P., and B. Rindge), three males and two females, July 2–11, 1962 (F., P., and M. Rindge), 54 males and 56 females.

The holotype, allotype, and paratypes are in the collection of the American Museum of Natural History.

**DISTRIBUTION:** From southern interior British Columbia, south in the Rocky Mountains to New Mexico and northern and eastern Arizona. The population occurs in the Black Hills in both Wyoming and South Dakota, and a few examples have been examined from eastern Oregon and eastern California.

(see fig. 12). Three females have been examined from the mountains (9000 feet in elevation) of Durango.

**TIME OF FLIGHT:** The moths have been captured in May, June, July, August, and September.

**REMARKS:** A total of 421 specimens (228 males and 193 females) and 39 genitalic dissections (21 males and 18 females) have been studied.

***Stenoporpia larga*, new species**

Plate 6, figure 3, plate 11, figure 5, plate 16,  
figure 2

This large species has the upper surface of the wings more evenly suffused with grayish black than does *excelsaria*, and the t. a. and t. p. lines are farther apart than are those of the preceding species. The present species occurs in southern Arizona.

**MALE:** Head with vertex dark gray, becoming grayish black between antennal bases; front black or blackish brown, with gray or pale gray scaling narrowly across top and more broadly across bottom; palpi dark brownish gray. Thorax above dark gray, with grayish black band across end of collar and narrow dark band across patagia and thorax; below whitish; legs whitish, forelegs and all tarsi pale brown; hind tibia without hair pencil. Abdomen above dark gray, first segment with numerous white scales, remaining segments with dark brownish gray and grayish black scales, without black bands on posterior margins of segments; below paler.

**UPPER SURFACE OF WINGS:** Forewings dark gray, with numerous dark brownish gray and black scales, median area slightly paler than remainder of wing, with variable number of grayish white scales; cross lines black, with t. a. and t. p. lines 3 to 4 mm. apart; t. a. line extending into cell, then angled basally and proceeding to inner margin with outward bend on anal vein; median line weakly represented, curving outward to large, round, discal spot, then proceeding down middle of median area to inner margin; t. p. line apparently arising near vein  $M_1$ , paralleling outer margin to inner margin, with two slight basal bends, and with black scales filling in base of cell  $M_3$ ; both t. a. and t. p. lines shaded by broad, blackish gray bands; subterminal area paler in lower por-

tion of wing; s. t. line grayish white, complete in most specimens but becoming faint in upper part of wing, and tending to be widest in center of wing; terminal line absent but black intravenular dots present; fringe concolorous with wing. Hind wings concolorous with forewings, basal portion slightly paler than outer part of wing; maculation as on forewings, with incomplete intradiscal line, and prominent extradiscal line extending completely across wing, having basal bend in cell  $Cu_1$  and in most specimens outwardly dentate on veins in upper portion of wing; discal spot weak or obsolescent; outer portion of wing similar to that of forewing, with stronger s. t. line and with terminal line.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale brownish gray scaling along costa of forewings and on all veins; with scattered brownish gray scales on forewings; without maculation.

**LENGTH OF FOREWING:** 21 to 23 mm.; holotype, 22 mm.

**FEMALE:** Similar to male but tending to be more heavily suffused with black scales on upper surface.

**LENGTH OF FOREWING:** 22 to 24 (allotype) mm.

**MALE GENITALIA:** Similar to those of *excelsaria*, but differing mainly as follows: larger; costal arm thinner and longer, 0.5 mm. in length; apex of arm rounded and bearing one long, outwardly angled, heavy spine at end, and from one to three smaller spines on outer curve of apex; aedeagus 2.7 to 2.8 mm. in length and 0.3 mm. in diameter.

**FEMALE GENITALIA:** Similar to those of *excelsaria*, but differing mainly as follows: larger; sterigma with relatively few ridges, more attenuate anteriorly, and anterolaterally with smaller, globular, pouchlike areas in middle of broadly V-shaped area; signum larger, 0.3 mm. in width; apophyses posteriores 2.3 mm. in length; apophyses anteriores, 1.2 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, male, Sierra Vista, Cochise County, Arizona, July 1, 1965 (R. F. Sternitzky; *ex* collection of the author); allotype, female, upper camp, Pinery Canyon, Chiricahua Mountains, Cochise County, Arizona, July 6, 1956 (*ex* collection of C. W.

Kirkwood). The genitalia of the holotype are on slide F.H.R. No. 13745; of the allotype, on F.H.R. No. 14478. Paratypes, all from southern Arizona: Upper camp, Pinery Canyon, Chiricahua Mountains, Cochise County, July 8, 9, 1956 (L. M. Martin, J. A. Comstock, and W. A. Rees), three males; same data but without "upper camp," July 9, 1956 (C. W. Kirkwood), one male; Tonto Creek state fish hatchery, Gila County, elevation 6400 feet, July 2, 1956 (L. M. Martin, J. A. Comstock, and W. A. Rees), one male; Santa Catalina Mountains, Pima County, August 20, 1938 (Bryant), one female; Madera Canyon, Santa Rita Mountains, Santa Cruz County, elevation 4880 feet, July 2, 1959 (J. G. Franclemont), one male.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of the Los Angeles County Museum of Natural History, of the Canadian National Collection, of C. W. Kirkwood, and of J. G. Franclemont.

**DISTRIBUTION:** Southern Arizona (see fig. 13).

**TIME OF FLIGHT:** The adults have been taken in the months of July and August.

**REMARKS:** Nine specimens (seven males and two females) and seven genitalic dissections (six males and one female) have been studied.

The male genitalia can be recognized not only by their large size but by the spining at the end of the costal arm.

The female genitalia are also very big, and the sterigmal area is diagnostic. The anterior, broadly V-shaped area tends, in outline, toward similar areas in the following species.

***Stenoporpia cuneata*, new species**

Plate 6, figure 4, plate 12, figure 1, plate 16, figure 3

This large species can be separated from the preceding ones by the presence of reddish brown shade bands next to the cross lines. It occurs in the mountains of Durango.

**MALE:** Head with vertex grayish white, band of brownish black scales between antennal bases; front blackish brown, triangular area of grayish black scaling ventrally; palpi dark brownish gray. Thorax above grayish white, scales tending to be darker apically,

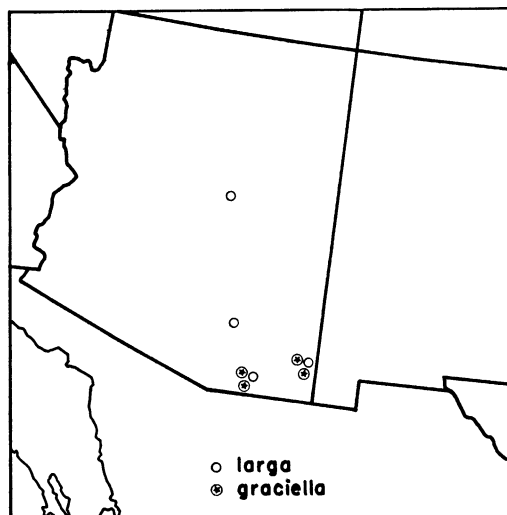


FIG. 13. Distribution of *Stenoporpia larga*, new species, and *S. graciella* McDunnough.

and with dark band at end of collar; below whitish gray; legs whitish gray, forelegs and all tarsi suffused with brownish gray.

**UPPER SURFACE OF WINGS:** Forewings pale purplish gray, with brownish black scaling; median area only faintly paler than adjacent areas; cross lines black, prominent, with broad reddish brown bands, and reddish brown scaling along inner margin and narrowly on veins in outer portion of wing; t. a. line angled outward in cell and on cubital vein, then strongly swinging basad to inner margin; median line obsolescent; discal spot elongate, slender; t. p. line weakly represented near costa, broad and prominent below vein  $M_1$ , subparalleling outer margin, with two basal bends, to inner margin; subterminal area apparently with brownish black scaling. Hind wings concolorous with forewings, broad basal area slightly paler than outer part of wing; maculation as on forewings, with incomplete intradiscal line, and prominent curved extradiscal line fading out before costal margin; discal spot present, smaller than on forewings; outer portion of wing apparently similar to that of forewing, with s. t. line weakly represented.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale brownish gray scaling along costa of forewings and on veins; without maculation except for faint traces of

outer cross lines and of discal spot on forewing.

LENGTH OF FOREWING: 21 mm. (allotype).

FEMALE: Similar to male but with upper surface more evenly suffused with grayish black scales; antennae with short terminal pectinations.

LENGTH OF FOREWING: 23.5 mm. (holotype).

MALE GENITALIA: Uncus with apical section attenuate, curving ventrally, with apex truncate and about 0.1 mm. in width, tip of apex with weakly defined points; gnathos with elongate, slender, median enlargement; valve with apex pointed; costal arm slightly shorter than valve, with large spine protruding slightly beyond valve, extending parallel with costa after leaving well-defined shoulder; apex of arm wedge-shaped, with inner surface sloping, with one large spine at pointed apex and second smaller spine at inner angle; cristae a large prominent patch on each side of very slender anellus; aedeagus 2.7 mm. in length, slightly longer than combined lengths of uncus, tegumen, and saccus, relatively thick, 0.35 mm. in diameter, with posterior end pointed; vesica unarmed.

FEMALE GENITALIA: Sterigma with small, elongate, recessed, median area, with weakly sclerotized sides curving ventrally to form elongate, tubelike opening of ductus bursae; anterolateral areas very wide, smoothly sclerotized, decreasing in width anteriorly, with small lateral rounded projections, becoming bluntly wedge-shaped medially; ductus bursae with elongate, slender, sclerotized area, and short membranous section joining corpus bursae posteriorly; ductus seminalis arising from corpus bursae posteroventrally; corpus bursae with tapering, longitudinally striate, and weakly sclerotized posterior section, and enlarged anterior portion; signum dorsal, weakly invaginated, roughly rectangular in outline, with narrow, weakly stellate lateral and anterior margins, and a few weak teeth on central area; apophyses posteriores 1.8 mm. in length; apophyses anteriores, 0.9 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPES: Holotype, female, 10 miles west of El Salto, Durango, Mexico, elevation 9000 feet, July 5, 1964 (W. C. McGuffin); allo-

type, male, same data but dated June 13, 1964. The genitalia of the holotype are on slide F.H.R. No. 14544; those of the allotype, on No. 14613.

Both type specimens are in the Canadian National Collection, Ottawa.

DISTRIBUTION: This species is known only from the mountains of Durango.

TIME OF FLIGHT: The adults have been captured in June and July.

REMARKS: Two specimens and two genitalic dissections have been studied.

The male genitalia of this species are separable from those of all the preceding species, with one exception, by the shape of the gnathos and of the apex of the costal arm. The one other species that has a similar configuration is *insipidaria*; the genitalia of the latter are smaller and less heavily sclerotized than those of the present species.

The female genitalia of *cuneata* are similar to those of *larga* in the broad anterolateral areas of the sterigma; those of the present species are narrower and more heavily sclerotized than the ones found in the Arizona species.

More complete details as to the maculation and colors of this species can be given only when additional specimens come to hand. Because both hind legs of the single male are missing, we cannot tell whether or not the tibial hair pencil is present.

***Stenoporpia regula*, new species**

Plate 6, figure 5, plate 12, figure 2

This species is similar to *cuneata*, but the wings are paler gray and the brownish bands next to the cross lines are not prominent. It occurs in the mountains of Hidalgo.

MALE: Head with vertex grayish brown, with a few brown scales between antennal bases; front dark brownish gray, with pale gray area across both top and bottom; palpi dark brownish gray. Thorax above grayish white, with scattered brown and grayish black scales, latter tending to be concentrated as narrow bands at end of collar and across patagia and thorax; below whitish gray; legs whitish gray, forelegs and all tarsi faintly brownish; hind tibia without hair pencil.

UPPER SURFACE OF WINGS: Forewings pale gray, with scattered brownish black scaling;

median area only faintly paler than adjacent areas; cross lines black, similar to those of *cuneata*, but with t. p. line more broadly curved anteriorly, and with two basal bends not so pronounced; cross lines with faint, apparently broad, dark brown bands, and faint, paler stripe along inner margin, discal spot apparently ovate, large; subterminal area broad, with nebulous pale band in lower portion of wing; s. t. line pale gray, outwardly angulate in cells; terminal line dark, broadly interrupted by veins, and with intravenular dots; fringe apparently concolorous with wing. Hind wings concolorous with forewings, with broad basal area slightly paler than outer part of wing; maculation as on forewings, with faint, incomplete intradiscal line, and curved extradiscal line fading out before costal margin; discal spot elongate, ovate; outer portion of wing similar to that of forewing but with s. t. line more strongly represented.

UNDER SURFACE OF WINGS: Unicolorous pale gray, with pale brownish gray scaling along costa of forewings and on all veins; without maculation.

LENGTH OF FOREWING: 21 mm. (holotype).

FEMALE: Unknown.

MALE GENITALIA: Similar to those of *cuneata*, but differing mainly as follows: uncus with more strongly developed points at apex; gnathos with shorter median enlargement; costal arm with wedge-shaped apex bearing one large spine at tip, and with from three to five smaller spines on inner face of wedge in two rows; aedeagus 2.4 mm. in length.

FEMALE GENITALIA: Unknown.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPE: Holotype, male, Guerrero Mill, Hidalgo, Mexico, elevation 9000 feet. The genitalia are mounted on slide F.H.R. No. 10047.

The type is in the collection of the American Museum of Natural History.

DISTRIBUTION: This species is known only from the mountains of Hidalgo.

TIME OF FLIGHT: Unknown.

REMARKS: This species is known only from the unique type, which is somewhat worn.

The male genitalia can be separated from those of *cuneata* by the more numerous spines at the apex of the costal arm. In *cuneata*

the large terminal spines are curved posteromedially and somewhat dorsally, whereas in *regula* they extend as a continuation of the outer margin of the costal arm.

#### *Stenoporpia graciella* McDunnough

Plate 6, figure 6, plate 12, figure 3, plate 16, figure 4

*Stenoporpia graciella* McDUNNOUGH, 1940, p. 91, pl. 7, fig. 5 (male genitalia).

This species and the following one can usually be recognized by the straight or gently curving cross lines and by the broad, pale median area of the grayish upper surface of the wings. The adults of *graciella* can be recognized by their antennae, by the female genitalia, and by the fact that this species is single-brooded, flying only in the spring. It occurs in southwestern Arizona.

MALE: Head with vertex covered with mixture of white and grayish black scales, latter tending to be concentrated between antennal bases; antennae with from 31 to 38 pectinate segments, and 12 or 13 simple terminal segments, segments with parallel sides; front black or blackish brown, with narrow band of white or pale gray scales across top and larger pale area ventrally; palpi dark brownish gray. Thorax above with mixture of white and grayish black scales, latter concentrated at end of collar and as narrow band across patagia and thorax; below whitish gray; legs whitish gray, forelegs and all tarsi suffused with brownish gray; hind tibia without hair pencil. Abdomen with first segment white, remaining segments brownish gray, with scattered white and black scales, and narrow, terminal black band posteriorly; below paler.

UPPER SURFACE OF WINGS: Forewings pale grayish white, with brownish gray and brownish black scaling; median area paler than adjacent areas; cross lines black, usually not represented on anterior margin of wing; t. a. line outcurved in cell, then strongly inwardly oblique to inner margin; median line obsolescent; discal spot small, elongate, faint; t. p. line 2 to 3 mm. from t. a. line, subparalleling outer margin, with faint basal bends at base of cell  $M_3$  and in cell  $Cu_2$ , and variably enlarged on many veins; moderate



grayish black shade lines next to both cross lines, separated therefrom by narrow white strip; subterminal area mostly pale grayish white, with grayish black area in middle; s. t. line indistinct, narrow, scalloped, partially bordered outwardly by black; terminal area grayish black, with narrow longitudinal black lines from border of s. t. line to faint intravenular spots in weakly developed terminal line; fringe concolorous with wing. Hind wings concolorous with forewings, broad basal area paler than outer part of wing; maculation as on forewings, with obsolescent or weakly developed, incomplete intradiscal line, and prominent straight or slightly curved extradiscal line fading out before costal margin; discal spot absent; outer portion of wing similar to that of forewing, with s. t. line tending to be more strongly represented.

**UNDER SURFACE OF WINGS:** Unicolorous pale gray, with pale brownish gray scaling along costa of forewings and on veins; without maculation, or with faint trace of outer cross lines showing through from upper surface, and hint of darker scaling near apex of forewings in some specimens.

**LENGTH OF FOREWING:** 18 to 22 mm.

**FEMALE:** Similar to male but with upper surface more evenly suffused with grayish black scales; antennae simple, consisting of from 43 to 47 segments, latter ranging in length from 0.24 to 0.30 mm.

**LENGTH OF FOREWING:** 19 to 21 mm.

**MALE GENITALIA:** Similar to those of *cuneata*, but differing mainly as follows: uncus with apical section broader, 0.18 mm. in width, tip of apex weakly concave between moderately defined points; gnathos V-shaped without noticeable median enlargement, apical region weakly spiculated; costal arm 0.44 mm. in length from shoulder to inner angle, and 0.12 mm. in width; apex of arm with one large spine at pointed apex and second smaller spine at inner angle; aedeagus 2.2 to 2.4 mm. in length, averaging 2.3 mm., shorter than combined lengths of uncus, tegumen, and saccus, relatively thick, 0.28 mm. in diameter, and gently curved.

**FEMALE GENITALIA:** Sterigma with small, recessed, median area, rounded in outline, having anterolateral sides with numerous very fine ridges; with large, somewhat rugose

heavily sclerotized areas on both sides and anterior of median area, decreasing in width cephalad, and forming part of opening of ductus bursae; anterolateral areas fused into one large, median protuberance, extended ventrally and enlarged anteriorly, extending cephalad almost to corpus bursae; ductus bursae with rectangular sclerotized area having wide dorsolateral areas, and short membranous section joining corpus bursae posteriorly; ductus seminalis arising from corpus bursae posteroventrally; corpus bursae relatively short, posterior section tapering, and with well-defined longitudinal striations and swollen anterior portion; signum dorsal, invaginated, ovoid, with narrow, more or less weakly stellate anterior margin, and a few weak teeth on central area; apophyses posteriores 1.7 to 2.1 mm. in length; apophyses anteriores, 0.9 to 1.1 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** The holotype, male, and allotype, female, are C.N.C. No. 4959.

**TYPE LOCALITY:** Huachuca Mountains, Cochise County, Arizona. A more exact locality would be Woodcutters Canyon, off the Fort Huachuca-Garces road. According to John L. Sperry's field notes (in the American Museum of Natural History), the Sperrys camped and collected here from May 26 through June 2, 1935.

**DISTRIBUTION:** This moth is known only from southeastern Arizona (see fig. 13), having been taken only in the Huachuca and Chiricahua mountains of Cochise County.

**TIME OF FLIGHT:** March, April, May, and June; this species has but a single generation per year.

**REMARKS:** Seventy-two specimens (49 males and 23 females) and 17 genitalic dissections (11 males and six females) have been studied.

The male genitalia of *graciella* are similar to those of the two preceding species. The structures of the present species can be recognized by the broader uncus, and by the much shorter median area of the gnathos.

The female genitalia can be separated from those of all the preceding species by the presence of the narrow and elongate median protuberance formed from the anterolateral areas of the sterigma.

***Stenoporpia lea*, new species**

Plate 6, figure 7, plate 12, figure 4, plate 16,  
figure 5

The adults of *lea* almost exactly resemble those of *graciella*. *Stenoporpia lea* can be recognized by its antennae, by the wider median area of the forewings, by the female genitalia, and by the fact that it is double-brooded. It occurs in Arizona.

**MALE:** Head, thorax, and abdomen similar to those of *graciella*; antennae with from 31 to 35 pectinate segments and from 11 to 16 simple terminal segments, the segments enlarged distally.

**UPPER SURFACE OF WINGS:** Similar to that of *graciella*, but differing mainly as follows: pale median area of wings broader, with t. p. line 3 to 4 mm. (spring generation) or 2 to 3 mm. (in smaller summer-generation specimens) from t. a. line; median area of forewing and broad basal area of hind wing tending to be less heavily suffused with darker scales.

**UNDER SURFACE OF WINGS:** Similar to that of *graciella*.

**LENGTH OF FOREWING:** 18 to 21 mm., allotype, 19 mm. (spring generation); 14 to 17 mm. (summer generation).

**FEMALE:** Similar to male, but with upper surface more evenly suffused with grayish black scales; antennae with short terminal pectinations, consisting of from 48 to 52 segments, the latter about 0.20 mm. in length.

**LENGTH OF FOREWING:** 17 to 20 mm., holotype, 19 mm. (spring generation); 16 to 18 mm. (summer generation).

**MALE GENITALIA:** Similar to those of *graciella*, but differing mainly as follows: slightly smaller; width of outer portion of uncus averaging 0.15 mm.; costal arm with apex 0.42 mm. in length and 0.10 mm. in width; apex of arm with one large spine at pointed apex and second smaller spine at or near inner angle, latter spine tending to be reduced in size or sometimes absent; aedeagus 2.1 to 2.5 mm. in length, averaging 2.2 mm., and 0.25 mm. wide.

**FEMALE GENITALIA:** Similar to those of *graciella*, but differing mainly as follows: sterigma tending to be more triangular in outline; with large, smoothly sclerotized areas on both sides and anteriad of median area; median protuberance of anterolateral areas not extending ventrally and tending to

be weakly trilobed or bluntly pointed; apophyses posteriores 1.6 to 2.0 mm. in length; apophyses anteriores, 0.9 to 1.2 mm.

**EARLY STAGES:** Unknown.

**FOOD PLANT:** Unknown.

**TYPES:** Holotype, female, Sierra Vista, Cochise County, Arizona, April 19, 1965 (R. F. Sternitzky); allotype, male, same data, April 13, 1965. The genitalia of the holotype are on slide F.H.R. No. 14775; of the allotype, on F.H.R. No. 14623; both specimens are from the author's collection. Paratypes, all from Arizona, and listed by counties: *Cochise County:* Sierra Vista, April 13, 1965 (R. F. Sternitzky), two males; 5 miles east of Hereford, August 19, 1966 (R. F. Sternitzky), two males; Ramsey Canyon, Huachuca Mountains, various dates in April, May, June, August, and September, 1964–1965 (R. F. Sternitzky), three males, 10 females; Carr Canyon, Huachuca Mountains, May 25, 1964, September 5, 1965 (R. F. Sternitzky), one male, one female; Ash Canyon, Huachuca Mountains, September 7, 1966 (R. F. Sternitzky), one female; Miller Canyon, Huachuca Mountains, April 30, 1948 (A. L. Melander), May 22, 1964, August 16, 1965 (R. F. Sternitzky), one male, one female; Sunnyside, west side of Huachuca Mountains, July 7–14, 1958 (L. M. Martin), 11 males and four females; Southwestern Research Station of the American Museum of Natural History, 5 miles west of Portal, elevation 5400 feet, various dates in March, April, May, June, July, August, and September, 1956–1962 (W. J. Gertsch, M. Cazier, E. Ordway, M. Statham, C. W. Kirkwood), 11 males and 17 females; Portal, June 1, 1952 (Cazier, Gertsch, Schrammel), June 20, 1955 (M. Cazier), two females; Pinery Canyon, Chiricahua Mountains, elevation 6800 feet, July 26, 1965, August 13, 1964 (R. H. Leuschner), four males and one female; Cave Creek, Chiricahua Mountains, April 29, 1966, July 2, 1966, August 26, 1966 (J. G. Franclemont), August 21, 1951 (L. M. Martin), September 14, 1966 (L. H. Leuschner), two males, three females; South Fork, Cave Creek camp, Chiricahua Mountains, May 23, 1962 (L. M. Martin), one female; Chiricahua Mountains, near Douglas, September 1, 1908, one male. *Santa Cruz County:* Canelo Valley, June 17, 1964 (R. F. Sternitzky), one male; Sonoita

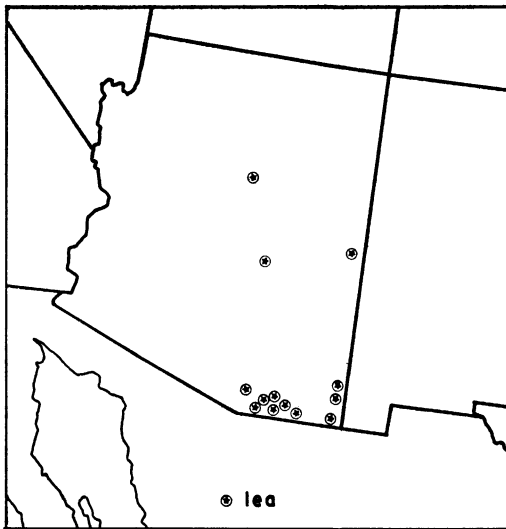


FIG. 14. Distribution of *Stenoporpia lea*, new species.

Creek, 10 miles south of Patagonia, September 29, 1964 (R. F. Sternitzky), one female; Madera Canyon, Santa Rita Mountains, various dates in May, June, July, August, and October, 1940–1962 (L. M. Martin, J. A. Comstock, W. A. Rees, E. Fisher, R. H. Leuschner, J. G. Franclemont), six males and 14 females. *Gila County*: Sierra Anche experimental forest, 40 miles north of Globe, June 3–4, 1956 (R. H. Leuschner), one female. *Coconino County*: Walnut Creek, 6½ miles east-southeast of Flagstaff, elevation 6500 feet, August 19–28, 1965 (J. G. Franclemont, R. W. Poole), two males and two females. *Apache County*: Three miles west of Eagar, elevation 7100 feet, August 11, 1962 (E. and I. Munroe), two males.

The holotype and allotype are in the collection of the American Museum of Natural History; paratypes are in the collections of that institution, of the Los Angeles County Museum of Natural History, of R. H. Leuschner, of C. W. Kirkwood, of R. W. Poole, of J. G. Franclemont, and in the Canadian National Collection.

**DISTRIBUTION:** Arizona (see fig. 14). Both *graciella* and *lea* fly together in the Huachuca and Chiricahua mountains of Cochise County; the former is more restricted to the canyons of these mountains than is the latter. In addition, *lea* is known from four other counties of the state.

**TIME OF FLIGHT:** The spring generation is on the wing from March into June, and the summer brood flies from July into October.

**REMARKS:** A total of 109 specimens (50 males and 59 females) and 29 genitalic dissections (16 males and 13 females) have been studied.

The best way to recognize *lea* is by a study of the female genitalia; the large, smoothly sclerotized areas on both sides and anteriorly of the triangular sterigma are diagnostic, as is the shape of the median protuberance.

***Stenoporpia bulbosa*, new species**

Plate 6, figure 8, plate 16, figure 6

This small purplish gray species has a very broad brownish gray outer area to both the forewings and hind wings. It occurs in Coahuila, Mexico.

**MALE:** Unknown.

**FEMALE:** Head with vertex covered by white and grayish black scales, latter concentrated between antennal bases; front black, with white scaling across top and bottom; palpi brownish gray. Thorax gray above, with grayish black band at end of collar and narrow one across patagia and thorax; below grayish white or pale brownish gray, forelegs and tarsi darker.

**UPPER SURFACE OF WINGS:** Forewings with median area faintly pale purplish gray, and basal and outer areas a darker brownish gray; cross lines black; t. a. line extending obliquely outward from costa, swinging basally in cell and proceeding to inner margin; median line faint, including elongate, grayish black discal dash, then paralleling t. p. line to inner margin; t. p. line extending to vein  $M_2$  before swinging basally and becoming thickened to vein  $Cu_1$ , then going straight to inner margin; cross lines without definite shade bands, but t. p. line having narrow white distal band; outer portion of wing broad, with prominent, grayish white s. t. line, and outwardly oblique, nebulous, brownish black area extending from middle of t. p. line to upper part of outer margin; terminal line and intravenular dots absent; fringe concolorous with wing. Hind wings concolorous with forewings, basal portion paler than broad outer area; maculation as on forewings, with weakly developed intradiscal line, and with prominent, slightly S-shaped, extra discal

line; discal dash present; outer portion of wing similar to that of forewings, with s. t. line less prominent, and with weakly developed terminal line.

UNDER SURFACE OF WINGS: Unicolorous pale gray, with pale brownish gray scaling along costa and on veins; without maculation except for grayish brown discal dashes on all wings.

LENGTH OF FOREWING: 16 mm. (holotype).

MALE GENITALIA: Unknown.

FEMALE GENITALIA: Sterigma with recessed median area bounded anteriorly by several concentric, semicircular ridges, these becoming attenuate anteriorly and extending into opening of ductus bursae, with elongate, raised, smoothly sclerotized, tapering areas extending anteriorly of median area and forming part of opening of elongate ductus bursae; anterolateral areas fused into one large median protuberance with bulbous anterior portion, latter not extending to posterior part of sclerotized area of ductus bursae; latter with elongate posterior section, weakly tapered sclerotized area having wide dorso-lateral areas, and short membranous section

joining corpus bursae posterodorsally; ductus seminalis arising from corpus bursae posteriorly on right side; corpus bursae short, roughly triangular, posterior section with longitudinal striations; signum dorsal, invaginated, ovoid, with weakly stellate anterior margin, and a very few weak teeth on central area; apophyses posteriores 1.5 mm. in length; apophyses anteriores, 0.8 mm.

EARLY STAGES: Unknown.

FOOD PLANT: Unknown.

TYPE: Holotype, female, 1 mile south of Cedritos, Coahuila, Mexico, June 22, 1957 (R. Zweifel); in the collection of the American Museum of Natural History. The genitalia of the type are on slide F.H.R. No. 12342.

DISTRIBUTION: This species is known only from the type locality.

TIME OF FLIGHT: June.

REMARKS: The unique type is the only specimen known.

The female genitalia are similar to those of *graciella* and *lea*, and can be distinguished from them by the concentric ridges of the sterigma, and by the bulbous end of the median protuberance.

## LIST OF SPECIES WITH THEIR KNOWN DISTRIBUTION

### GROUP I

- |  |  |
|--|--|
| 1. <i>pulchella</i> (Grossbeck)            |  |
| a. <i>pulchella</i> (Grossbeck)            | Southeastern California, southern Arizona, southwestern New Mexico, Sonora |
| b. <i>coolidgearia</i> Dyar                | Southern California, northern Baja California                              |
| 2. <i>margueritae</i> , new species        |  |
| a. <i>margueritae</i> , new subspecies     | Arizona, Durango   |
| b. <i>farina</i> , new subspecies          | Western Texas  |
| 3. <i>asymmetra</i> Rindge                 | Arizona  |
| 4. <i>dionaria</i> (Barnes and McDunnough) | Arizona  |

### GROUP II

- |                                     |   |
|-------------------------------------|---|
| 5. <i>polygrammaria</i> (Packard)   | Northeastern North America                      |
| 6. <i>mediatra</i> Rindge           | Arizona   |
| 7. <i>dissonaria</i> (Hulst)        |   |
| a. <i>dissonaria</i> (Hulst)        | Colorado, Utah, New Mexico, western Texas       |
| <i>elena</i> Cassino                |   |
| b. <i>campha</i> , new subspecies   | North central Texas                             |
| 8. <i>anastomosaria</i> (Grossbeck) | Southern California to western Texas, Chihuahua |

### GROUP III

- |                                 |   |
|---------------------------------|---|
| 9. <i>pulmonaria</i> (Grote)    |   |
| a. <i>dejecta</i> (Hulst)       | Mountains of southern California, north into interior Oregon and Washington |
| b. <i>lila</i> , new subspecies | Coastal central California  |
| c. <i>albescens</i> (Hulst)     | Coastal areas from northern California to southern Alaska                   |

- d. *satisfacta* (Barnes and McDunnough) Interior British Columbia, Idaho, Montana, Wyoming  
 e. *vicaria*, new subspecies Northern and central Colorado  
 f. *pulmonaria* (Grote) Southwestern Colorado, Utah, Arizona, New Mexico  
 g. *blattifera*, new subspecies Durango  
 10. *purpuraria* (Barnes and McDunnough) Arizona, New Mexico  
 11. *noctiluca* (Druce) Veracruz, Guatemala  
 12. *serica*, new species Durango
- GROUP IV
13. *vernata* (Barnes and McDunnough)  
 a. *vernata* (Barnes and McDunnough) Colorado, Utah, New Mexico, Arizona, southeastern California  
    *jemesata* Cassino  
    *jemezata* Cassino (*emend.*)  
 b. *variana*, new subspecies Sierra Nevada Range, California  
 14. *vernaella* McDunnough Arizona
- GROUP V
15. *insipidaria* McDunnough New Mexico  
 16. *anellula* (Barnes and McDunnough) New Mexico, Arizona, Utah, Colorado  
 17. *badia*, new species California  
 18. *macdunnoughi* Sperry Wyoming, Colorado, Utah, Arizona, New Mexico
- GROUP VI
19. *blanchardi*, new species Western Texas  
 20. *glaucomarginaria* McDunnough Arizona, New Mexico, Colorado, Durango  
 21. *separataria* (Grote) Arizona and New Mexico to eastern Oregon, southern British Columbia and Alberta  
    *umbraria* McDunnough  
 22. *excelsaria* (Strecker) Coastal Washington and British Columbia  
    a. *excelsaria* (Strecker) Interior British Columbia and eastern Oregon to Arizona, New Mexico, and Durango  
    b. *pullata*, new subspecies Arizona  
 23. *larga*, new species Durango  
 24. *cuneata*, new species Hidalgo  
 25. *regula*, new species Arizona  
 26. *graciella* McDunnough Arizona  
 27. *lea*, new species Arizona  
 28. *bulbosa*, new species Coahuila

## BIBLIOGRAPHY

- ANON.  
1882. Check list of the Macro-Lepidoptera of America, north of Mexico. Brooklyn, Brooklyn Entomological Society, iv+25 pp.
- BARNES, WILLIAM, AND J. H. McDUNNOUGH  
1912. Illustrations of rare and typical Lepidoptera. Contributions to the natural history of the Lepidoptera of North America. Decatur, Illinois, the Review Press, vol. 1, no. 4, pp. 1-58, 27 pls.  
1913. New N. Am. Lepidoptera with notes on described species. *Op. cit.* Decatur, Illinois, the Review Press, vol. 2, pp. 93-164, pls. 1-9.  
1917a. Check list of the Lepidoptera of boreal America. Decatur, Illinois, Herald Press, viii+392 pp.  
1917b. New species and varieties of Geometridae. Contributions to the natural history of the Lepidoptera of North America. Decatur, Illinois, the Review Press, vol. 3, pp. 224-296, 18 pls.  
1918. Notes and new species. *Op. cit.* Decatur, Illinois, the Review Press, vol. 4, pp. 61-208, pls. 11-25.
- BEUTENMÜLLER, WILLIAM  
1890. Catalogue of Lepidoptera found within fifty miles of New York City with their food plants. Ann. New York Acad. Sci., vol. 5, pp. 199-230.
- BOWMAN, K.  
1951. An annotated list of the Lepidoptera of Alberta. Canadian Jour. Zool., vol. 29, pp. 121-165.
- CASSINO, SAMUEL E.  
1927. New geometrids. The Lepidopterist, vol. 4, pp. 73-80.
- DRUCE, HERBERT  
1881-1900. Biologia Centrali-Americana. Insecta. Lepidoptera-Heterocera. London, vol. 3, pls. 1-101.  
1891-1900. *Op. cit.* London, vol. 2, pp. 1-622.
- DYAR, HARRISON G.  
"1902" [1903]. A list of North American Lepidoptera and key to the literature of this order of insects. Bull. U. S. Natl. Mus., no. 52, xix+723 pp.  
1905. A few notes on the Strecker collection. Proc. Ent. Soc. Washington, vol. 7, pp. 92-94.  
1923. New American Lepidoptera. Insect. Insc. Menstruus, vol. 11, pp. 12-30.
- FORBES, WILLIAM T. M.  
1928. Order Lepidoptera. In Leonard, Mortimer Demarest, A list of the insects of New York with a list of the spiders and certain other allied groups. Mem. Cornell Univ. Agr. Exp. Sta., no. 101, pp. 532-687.  
1948. Lepidoptera of New York and neighboring states. Part II. *Ibid.*, no. 274, 263 pp. 255 figs.
- GROSSBECK, JOHN A.  
1908. New moths of the family Geometridae. Jour. New York Ent. Soc., vol. 16, pp. 19-31.  
1909. Some new species of North American Geometridae. Canadian Ent., vol. 41, pp. 153-157.
- GROTE, AUG. R.  
1881. New moths from Arizona, with remarks on *Catocala* and *Heliothis*. Papilio, vol. 1, pp. 153-168.  
1882. New check list of North American moths. New York, 74 pp.  
1883. New species and notes on structure of moths and genera. Canadian Ent., vol. 15, pp. 86-87, 121-133.
- GUENÉE, A.  
1857. Histoire naturelle des insectes. Species général des lépidoptères. Paris, vol. 10, 584 pp.
- GUMPPENBERG, C. FREIH. V.  
1892. Systema geometrarum zonae temperationis septentrionalis. Fünfter Teil. Nova Acta Deutschen Akad. Naturf., Halle, vol. 58, no. 4, pp. 223-359.
- HULST, GEO. D.  
1896. A classification of the Geometrina of North America, with descriptions of new genera and species. Trans. Amer. Ent. Soc., vol. 23, pp. 245-386, pls. 10, 11.
- JONES, J. R. J. LLEWELLYN  
1951. An annotated check list of the Macrolepidoptera of British Columbia. Occas. Paper Ent. Soc. British Columbia, no. 1, v+iii+148 pp.
- McDUNNOUGH, J.  
1920. Studies in North American Cleorini (Geometridae). Dominion of Canada, Dept. Agr., Ent. Branch. Tech. Bull., no. 18, pp. 1-64, pls. I-XI.  
1925. New Canadian Lepidoptera with notes. Canadian Ent., vol. 57, pp. 11-23, 2 pls.  
1927. A new cleorid with notes on synonymy (Lepidoptera, Geometridae). *Ibid.*, vol. 59, pp. 277-278.  
1938. Check list of the Lepidoptera of Canada

- and the United States of America. Mem. Southern California Acad. Sci., vol. 1, pp. 1-275.
1940. New North American Geometridae with notes, III. Canadian Ent., vol. 72, pp. 80-103, pl. 7.
1945. New North American Geometridae with notes, IV. *Ibid.*, vol. 77, pp. 97-103.
- PACKARD, A. S., JR.
1876. A monograph of the geometrid moths or Phalaenidae of the United States. In Hayden, F. V., Report of the United States Geological Survey of the territories. Washington, vol. 10, 607 pp., 12 pls.
- PEARSALL, RICHARD F.
1906. *Selidosema umbrosarium* Hübner. Canadian Ent., vol. 38, pp. 178-179.
- PRENTICE, R. M. (COMPILER)
1963. Forest Lepidoptera of Canada. Publ. Canada Dept. Forestry, Forest Ent. and Pathol. Branch, no. 1013, vol. 3, pp. 283-543, figs. 164-337.
- RINDGE, FREDERICK H.
1955. The type material in the J. B. Smith and G. D. Hulst collections of Lepidoptera in the American Museum of Natural History. Bull. Amer. Mus. Nat. Hist., vol. 106, pp. 91-172.
1958. Descriptions of and notes on North American Geometridae (Lepidoptera), no. 2. Amer. Mus. Novitates, no. 1872, pp. 1-23, figs. 1-29.
1959. Descriptions of and notes on North American Geometridae (Lepidoptera), no. 4. *Ibid.*, no. 1968, pp. 1-17, figs. 1-13.
1965. A revision of the Nearctic species of the genus *Glena* (Lepidoptera, Geometridae). Bull. Amer. Mus. Nat. Hist., vol. 129, pp. 265-306, figs. 1-28.
1966. A revision of the moth genus *Anacamptodes* (Lepidoptera, Geometridae). *Ibid.*, vol. 132, pp. 175-244, figs. 1-53.
1967. A revision of the Neotropical species of the moth genus *Glena* (Lepidoptera, Geometridae). *Ibid.*, vol. 135, pp. 107-172, figs. 1-50.
- SMITH, JOHN B.
1891. List of the Lepidoptera of boreal America. Philadelphia, American Entomological Society, v+124 pp.
1903. Check list of the Lepidoptera of boreal America. Philadelphia, American Entomological Society, v+136 pp.
- SPERRY, JOHN L.
1938. New Lepidoptera from Arizona. Canadian Ent., vol. 70, pp. 142-144.
- STRECKER, HERMAN
1899. Lepidoptera, Rhopaloceres and Heteroceres, indigenous and exotic. Reading, Pennsylvania, suppl. 2, 11 pp.





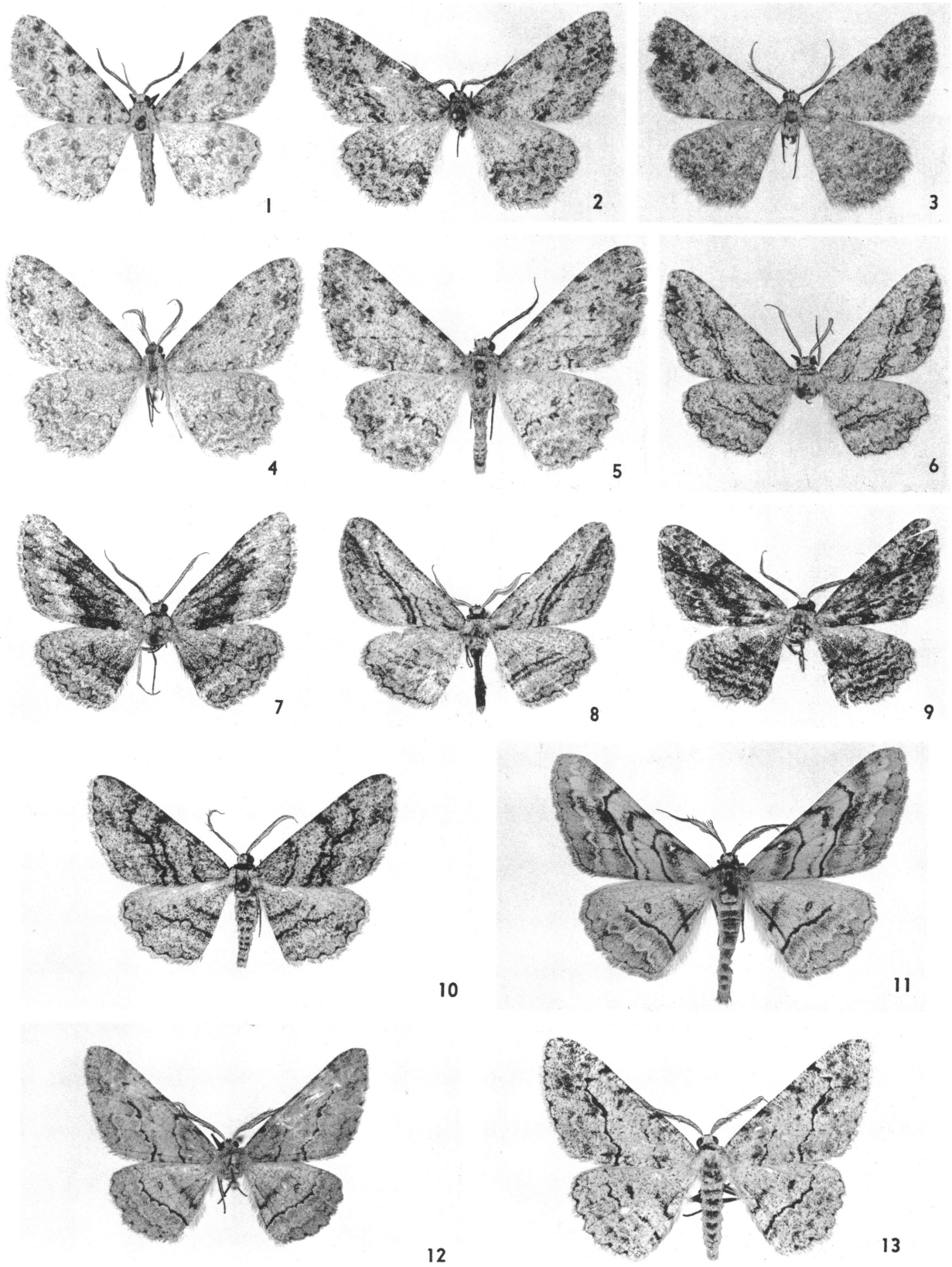


PLATES 3-16

PLATE 3

1. *Stenoporpia pulchella coolidgearia* Dyar, male, Palm Springs, Riverside County, California, November 20, 1954 (A. H. Rindge; A.M.N.H.)
2. *Stenoporpia margueritae margueritae*, new subspecies, holotype male, Pine Camp, Otero County, New Mexico, July 3, 1964 (F., P., and M. Rindge; A.M.N.H.)
3. *Stenoporpia margueritae farina*, new subspecies, holotype male, Green Gulch, Big Bend National Park, Texas, October 7, 1965 (A. and M. E. Blanchard; A.M.N.H.)
4. *Stenoporpia asymmetra* Rindge, holotype male, Pinery Canyon, Cochise County, Arizona, July 3, 1956 (C. W. Kirkwood; A.M.N.H.)
5. *Stenoporpia dionaria* (Barnes and McDunnough), male, Ramsey Canyon, Cochise County, Arizona, September 23, 1965 (R. F. Sternitzky; A.M.N.H.)
6. *Stenoporpia polygrammaria* (Packard), male, Warsaw, Benton County, Missouri, May 28, 1961 (W. H. Howe; A.M.N.H.)
7. *Stenoporpia mediatra* Rindge, paratype male, Pine Crest, Graham County, Arizona, June 28, 1955 (L. M. Martin; A.M.N.H.)
8. *Stenoporpia dissonaria dissonaria* (Hulst), male, Davenport Camp, Custer County, Colorado, July 1, 1967 (F., P., and M. Rindge; A.M.N.H.)
9. *Stenoporpia dissonaria campae*, new subspecies, holotype male, Lake Brownwood State Park, Brown County, Texas, April 20–21, 1966 (A. and M. E. Blanchard; A.M.N.H.)
10. *Stenoporpia anastomosaria* (Grossbeck), male, Southwestern Research Station of the American Museum of Natural History, Cochise County, Arizona, May 5, 1956 (M. Statham; A.M.N.H.)
11. *Stenoporpia pulmonaria dejecta* (Hulst), male, upper Santa Ana River, San Bernardino County, California, September 23, 1946 (G. H. and J. L. Sperry; A.M.N.H.)
12. *Stenoporpia pulmonaria lila*, new subspecies, holotype male, Pacific Grove, Monterey County, California, June 19, 1947 (A. L. Melander; A.M.N.H.)
13. *Stenoporpia pulmonaria albescens* (Hulst), male, 2 miles east of Elsie, Clatsop County, Oregon, August 21, 1965 (S. G. Jewett, Jr.; A.M.N.H.)

All figures  $\times 1.5$



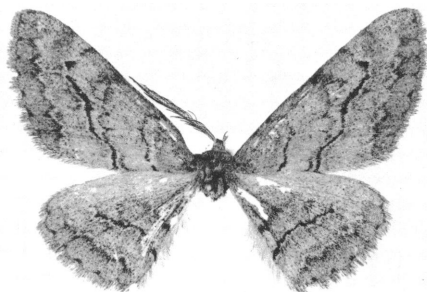
#### PLATE 4

1. *Stenoporpia pulmonaria satisfacta* (Barnes and McDunnough), male, Richel Lodge, Carbon County, Montana, August 30, 1942 (G. H. and J. L. Sperry; A.M.N.H.)
2. *Stenoporpia pulmonaria vicaria*, new subspecies, holotype male, Estes Park, Larimer County, Colorado (Wiest; A.M.N.H.)
3. *Stenoporpia pulmonaria pulmonaria* (Grote), male, Diamond Rock, Apache County, Arizona, September 3, 1947 (G. H. and J. L. Sperry; A.M.N.H.)
4. *Stenoporpia pulmonaria blattifera*, new subspecies, allotype male, 10 miles west of El Salto, Durango, Mexico, August 8, 1964 (W. C. McGuffin; C.N.C.)
5. *Stenoporpia purpuraria* (Barnes and McDunnough), male, North Rim, Grand Canyon National Park, Arizona, August, 1949 (N. Crickmer; A.M.N.H.)
6. *Stenoporpia noctiluca* (Druce), male, Veracruz, Mexico (U.S.N.M.)
7. *Stenoporpia serica*, new species, holotype male, 23 miles west of Durango, Durango, Mexico, July 27, 1964 (W. C. McGuffin; C.N.C.)
8. *Stenoporpia vernata vernata* (Barnes and McDunnough), Glenwood Springs, Garfield County, Colorado, May 1-7 (A.M.N.H.)
9. *Stenoporpia vernata variana*, new subspecies, holotype male, Smoky Valley, Tulare County, California, June 13, 1945 (C. Henne; A.M.N.H.)

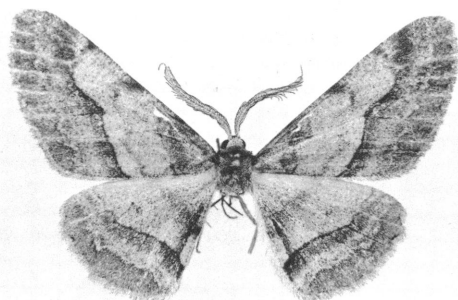
All figures  $\times 1.5$



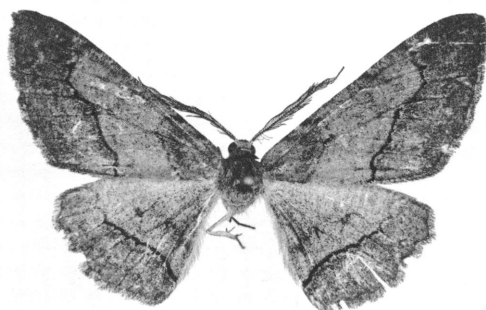
1



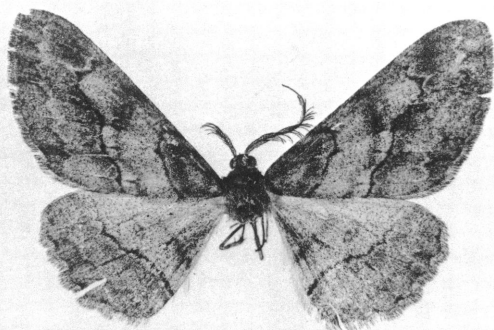
2



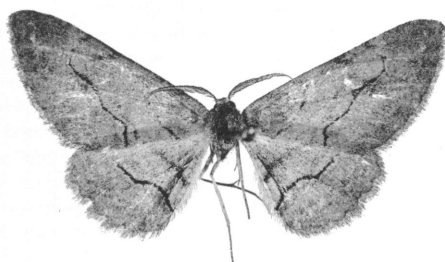
3



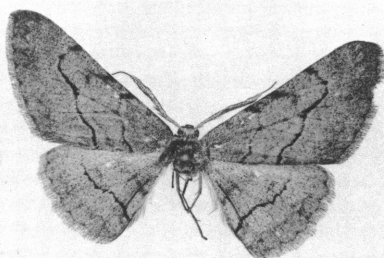
4



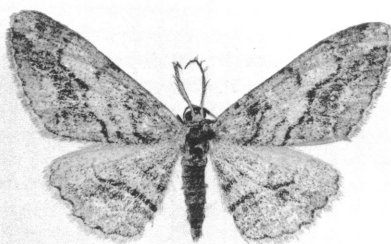
5



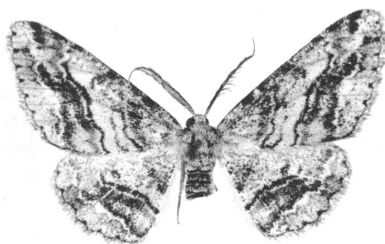
6



7



8



9

PLATE 5

1. *Stenoporpia vernallella* McDunnough, male, Ramsey Canyon, Cochise County, Arizona, May 29, 1965 (R. F. Sternitzky; A.M.N.H.)
  2. *Stenoporpia insipidaria* McDunnough, male, High Rolls, Otero County, New Mexico, July (A.M.N.H.)
  3. *Stenoporpia anellula* (Barnes and McDunnough), male, Frijoles Canyon, New Mexico, September 10, 1941 (G. H. and J. L. Sperry; A.M.N.H.)
  4. *Stenoporpia badia*, new species, holotype male, Barton Flats, San Bernardino County, California, July 9, 1946 (G. H. and J. L. Sperry; A.M.N.H.)
  5. *Stenoporpia macdunnoughi* Sperry, male, Red Canyon Camp, Garfield County, Utah, June 30, 1963 (F., P., and M. Rindge; A.M.N.H.)
  6. *Stenoporpia blanchardi*, new species, holotype male, Basin, Big Bend National Park, Texas, April 9, 1967 (A. and M. E. Blanchard; A.M.N.H.)
  7. *Stenoporpia glaucomarginaria* McDunnough, male, Hannagan Meadows, Greenlee County, Arizona, June 29, 1966 (R. F. Sternitzky; A.M.N.H.)
  8. *Stenoporpia separataria* (Grote), male, Davenport Camp, Custer County, Colorado, July 4, 1967 (F., P., and M. Rindge; A.M.N.H.)
- All figures  $\times 1.5$

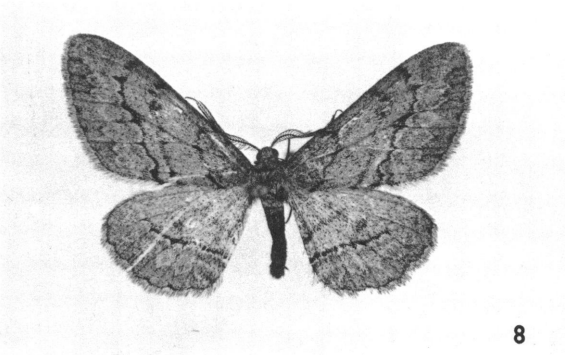
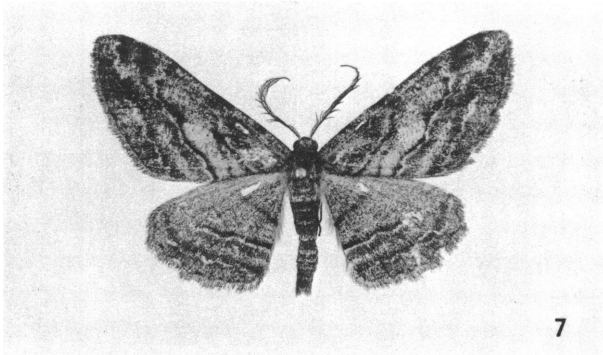
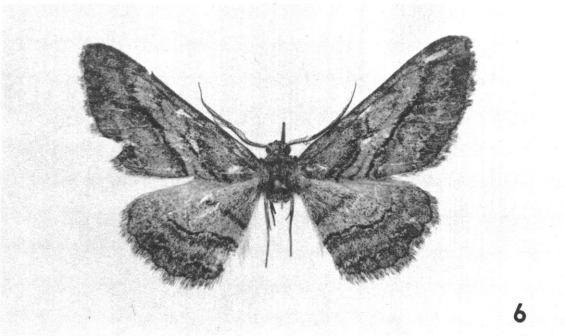
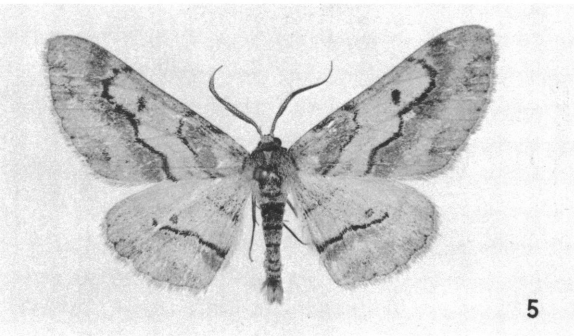
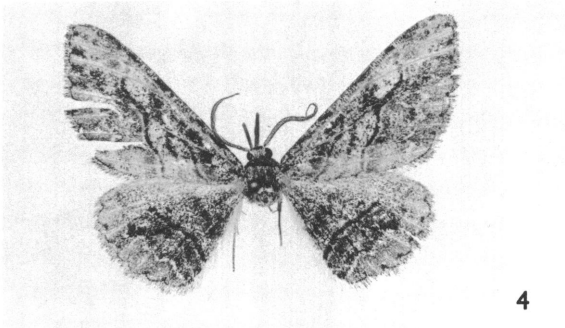
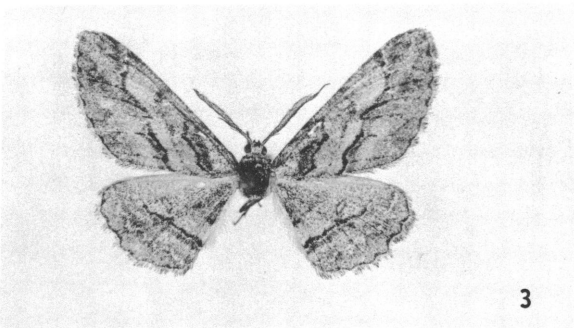
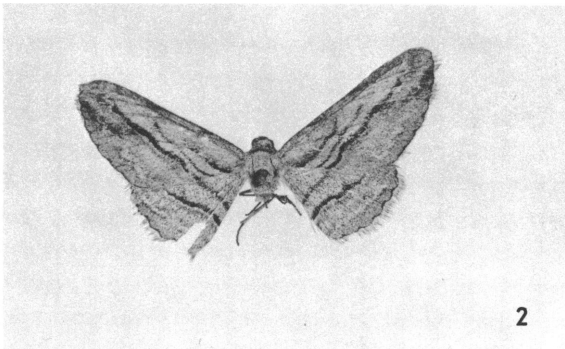
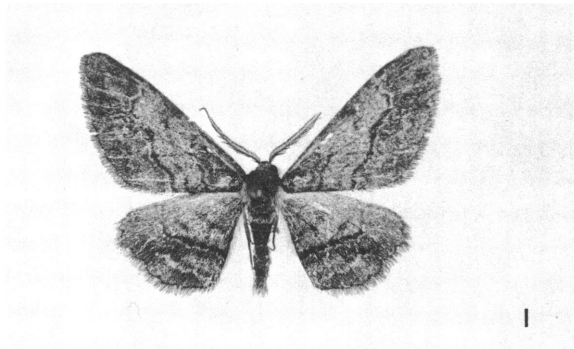
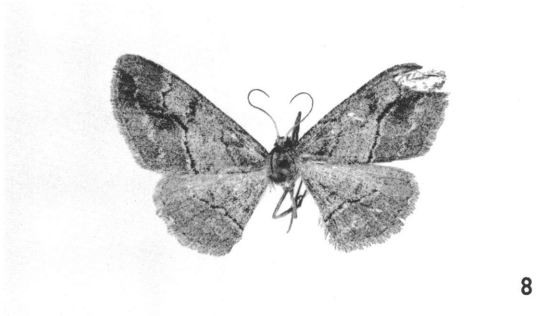
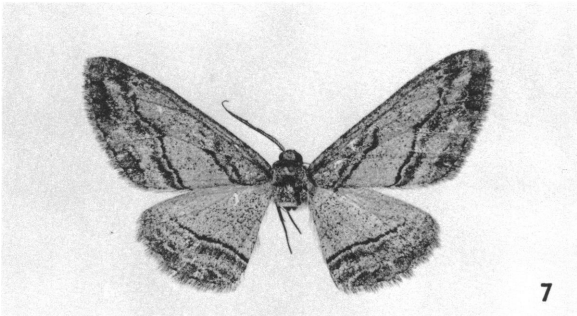
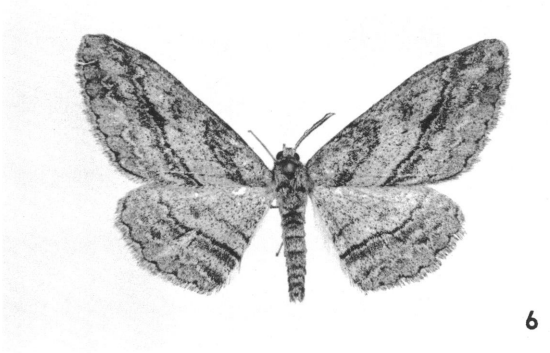
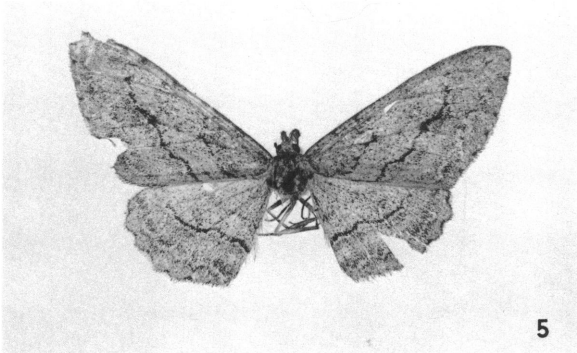
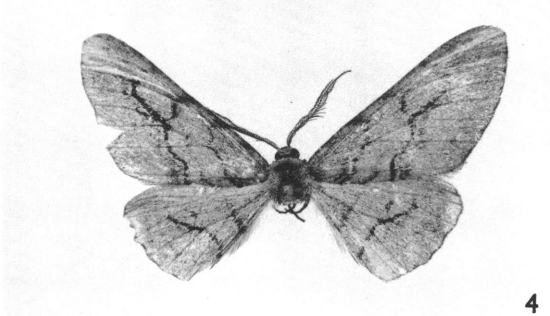
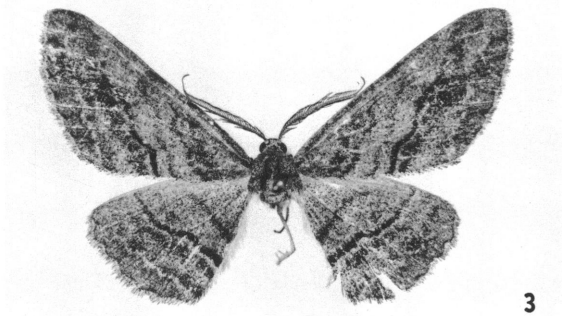
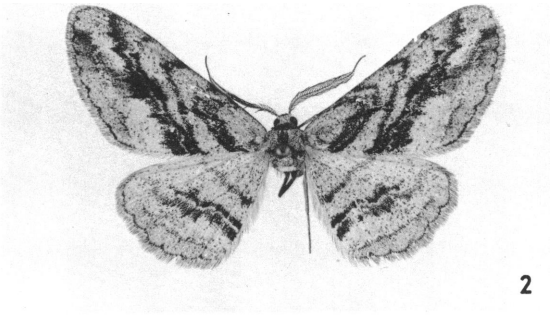
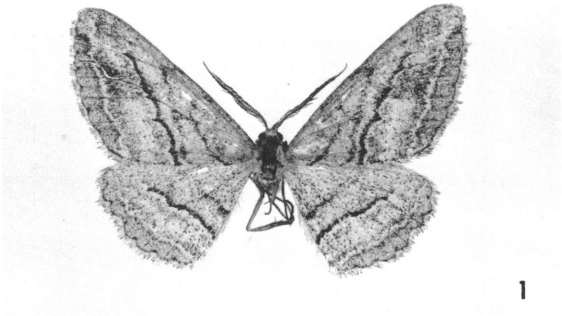




PLATE 6

1. *Stenoporpia excelsaria excelsaria* (Grote), male, Wellington, British Columbia, June 15, 1949 (R. Guppy; A.M.N.H.)
  2. *Stenoporpia excelsaria pullata*, new subspecies, holotype male, Reuter Canyon Camp, Crook County, Wyoming, July 2, 1962 (F., P., and M. Rindge; A.M.N.H.)
  3. *Stenoporpia larga*, new species, holotype male, Sierra Vista, Cochise County, Arizona, July 1, 1965 (R. F. Sternitzky; A.M.N.H.)
  4. *Stenoporpia cuneata*, new species, allotype male, 10 miles west of El Salto, Durango, Mexico, June 13, 1964 (W. C. McGuffin; C.N.C.)
  5. *Stenoporpia regula*, new species, holotype male, Guerrero Mill, Hidalgo, Mexico (A.M.N.H.)
  6. *Stenoporpia graciella* McDunnough, male, Southwestern Research Station of the American Museum of Natural History, Cochise County, Arizona, May 3, 1956 (M. Statham; A.M.N.H.)
  7. *Stenoporpia lea*, new species, paratype male, Ramsey Canyon, Cochise County, Arizona, May 7, 1965 (R. F. Sternitzky; A.M.N.H.)
  8. *Stenoporpia bulbosa*, new species, holotype male, 1 mile south of Cedritos, Coahuila, Mexico, June 22, 1957 (R. Zweifel; A.M.N.H.)
- All figures  $\times 1.5$



## PLATE 7

### MALE GENITALIA

1. *Stenoporpia pulchella pulchella* (Grossbeck), 18 miles north of Rodeo, Hidalgo County, New Mexico, July 7, 1956 (E. Ordway; A.M.N.H.)
2. *Stenoporpia margueritae margueritae*, new species, holotype, Pine Camp, Otero County, New Mexico, July 3, 1964 (F., P., and M. Rindge; A.M.N.H.)
3. *Stenoporpia asymmetra* Rindge, Sonoita Creek, Santa Cruz County, Arizona, March 13, 1964 (R. F. Sternitzky; A.M.N.H.)
4. *Stenoporpia dionaria* (Barnes and McDunnough), Madera Canyon, Santa Cruz County, Arizona, June 22, 1955 (W. A. Rees; A.M.N.H.)

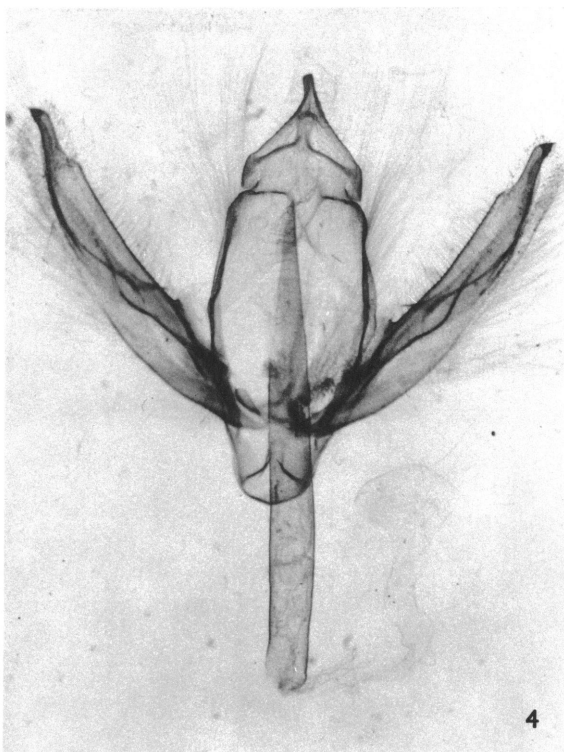
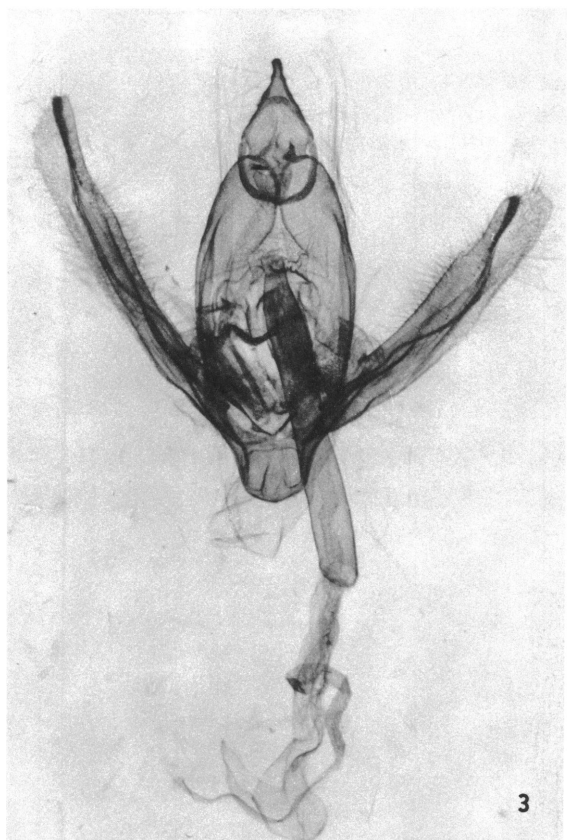
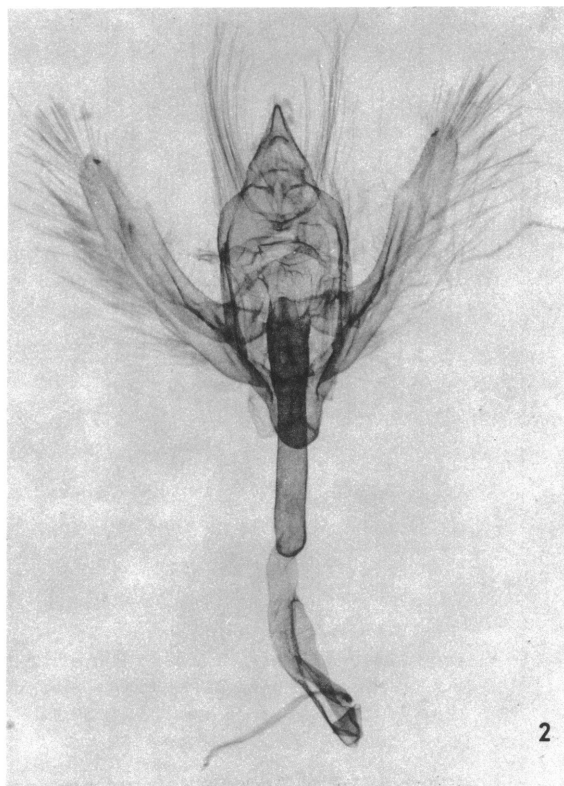
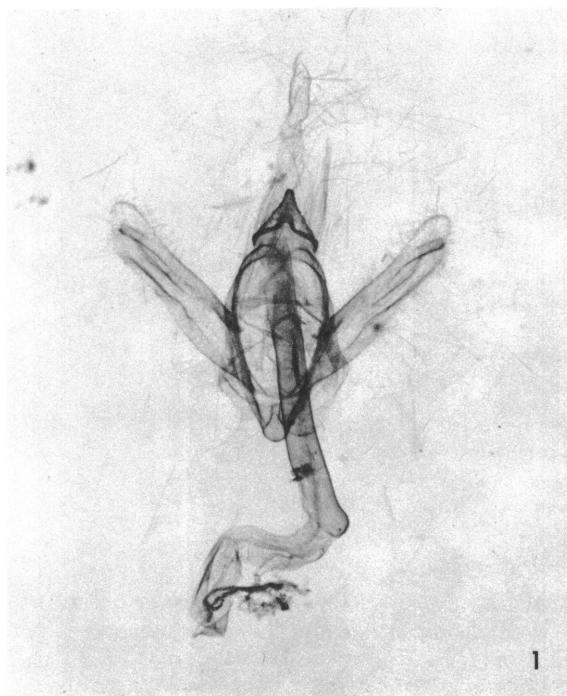
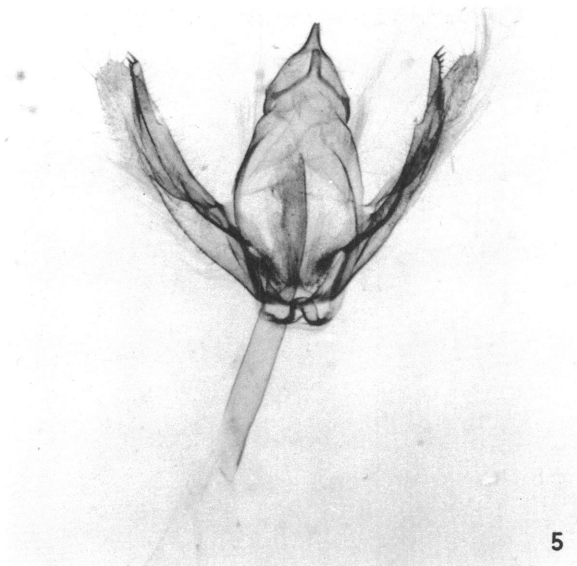
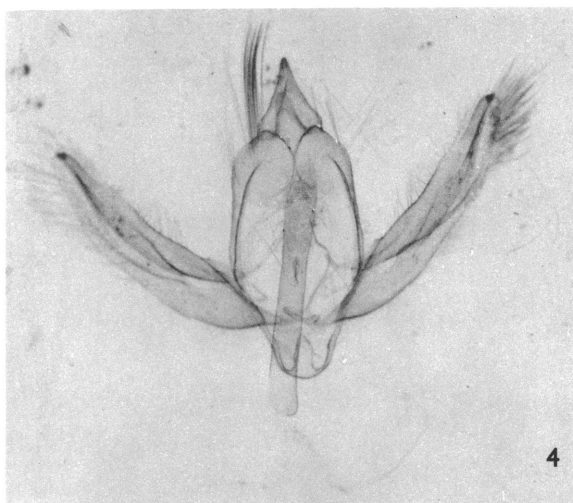
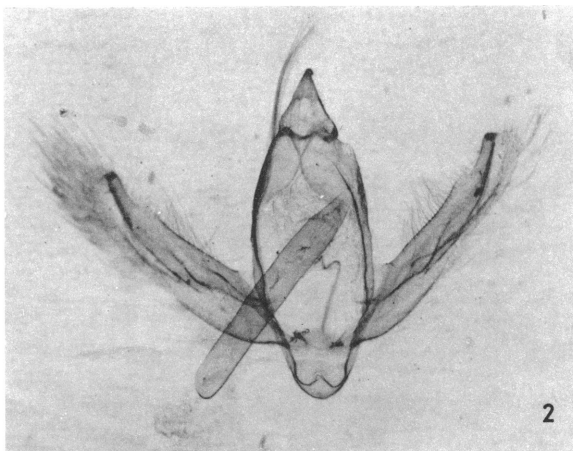
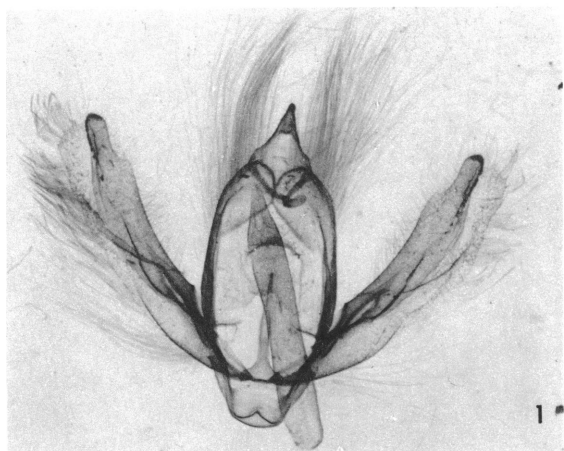


PLATE 8

MALE GENITALIA

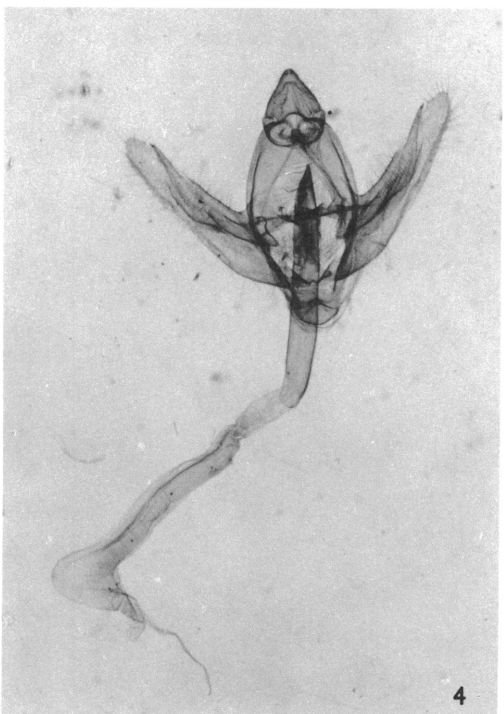
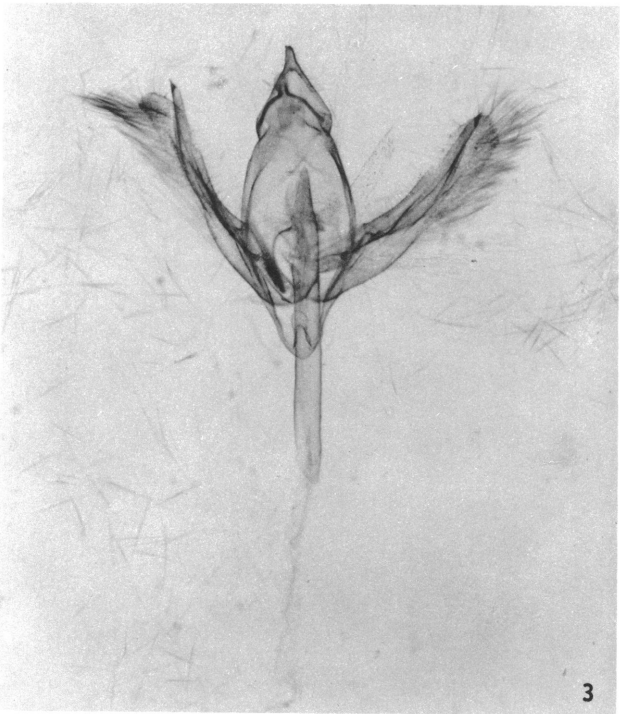
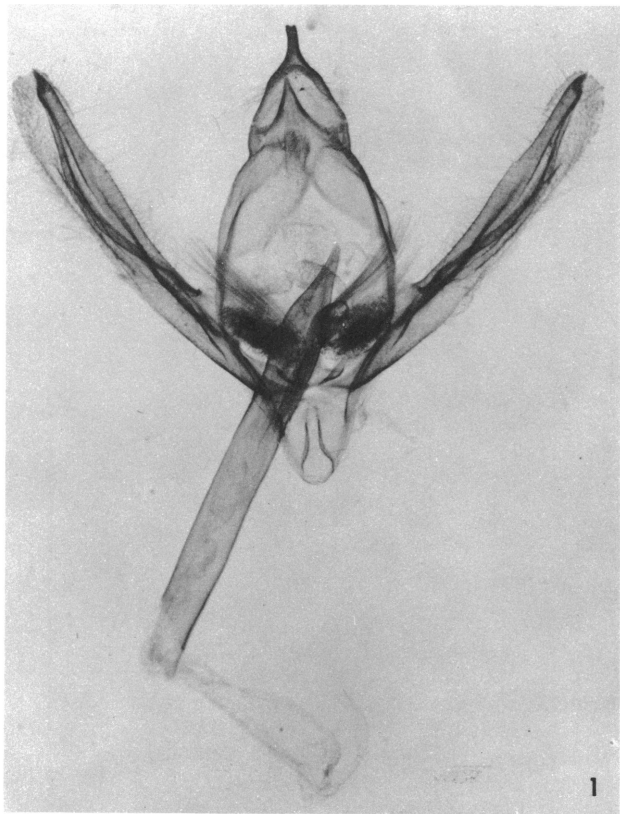
1. *Stenoporpia polygrammaria* (Packard), West Sandgate, Bennington County, Vermont, June 10, 1954 (Klots, F. and P. Rindge; A.M.N.H.)
2. *Stenoporpia mediatra* Rindge, paratype, Pinery Canyon, Cochise County, Arizona June 27, 1955 (W. A. Rees; A.M.N.H.)
3. *Stenoporpia dissonaria dissonaria* (Hulst), Colorado (A.M.N.H.)
4. *Stenoporpia anastomosaria* (Grossbeck), Southwestern Research Station of the American Museum of Natural History, Cochise County, Arizona, May 3, 1956 (M. Statham; A.M.N.H.)
5. *Stenoporpia pulmonaria dejecta* (Hulst), Sierra Nevada, California (A.M.N.H.)



## PLATE 9

### MALE GENITALIA

1. *Stenoporpia purpuraria* (Barnes and McDunnough), White Mountains, Arizona, August 14, 1939 (A.M.N.H.)
2. *Stenoporpia noctiluca* (Druce), Las Vigas, Veracruz, Mexico (U.S.N.M.)
3. *Stenoporpia serica*, new species, holotype, 23 miles west of Durango, Durango, Mexico, July 27, 1964 (W. C. McGuffin; C.N.C.)
4. *Stenoporpia vernata vernata* (Barnes and McDunnough), Silver City, Grant County, New Mexico, July 22, 1952 (J. Schmitt; A.M.N.H.)





## PLATE 10

### MALE GENITALIA

1. *Stenoporpia vernaella* McDunnough, Southwestern Research Station of the American Museum of Natural History, Cochise County, Arizona, August 9, 1956 (E. Ordway; A.M.N.H.)
2. *Stenoporpia insipidaria* McDunnough, High Rolls, Otero County, New Mexico (A.M.N.H.)
3. *Stenoporpia anellula* (Barnes and McDunnough), Frijoles Canyon, New Mexico, September 10, 1941 (G. H. and J. L. Sperry; A.M.N.H.)
4. *Stenoporpia badia*, new species, holotype, Barton Flats, San Bernardino County, California, July 9, 1946 (G. H. and J. L. Sperry; A.M.N.H.)
5. *Stenoporpia macdunnoughi* Sperry, Flagstaff, Coconino County, Arizona, June 13, 1949 (N. Crickmer; A.M.N.H.)

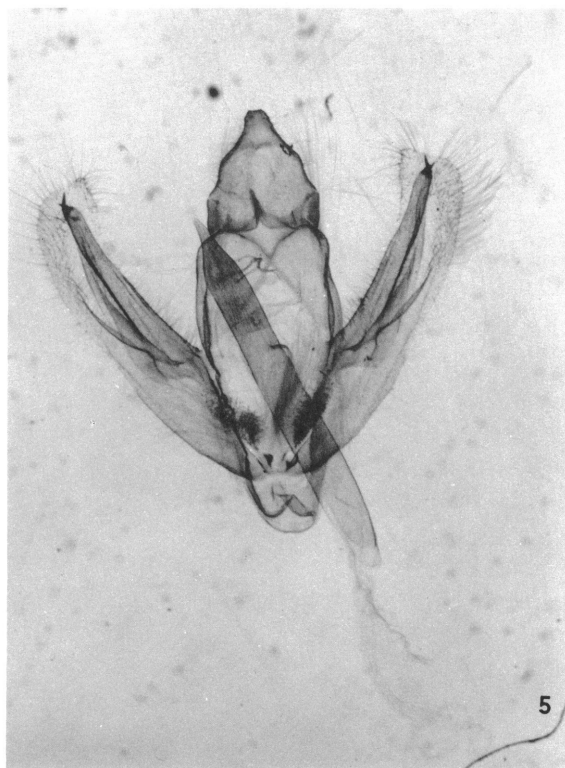
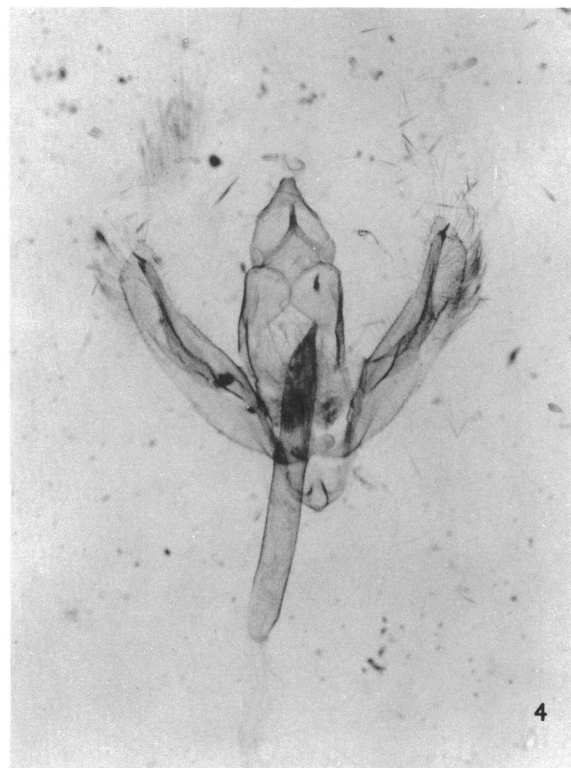
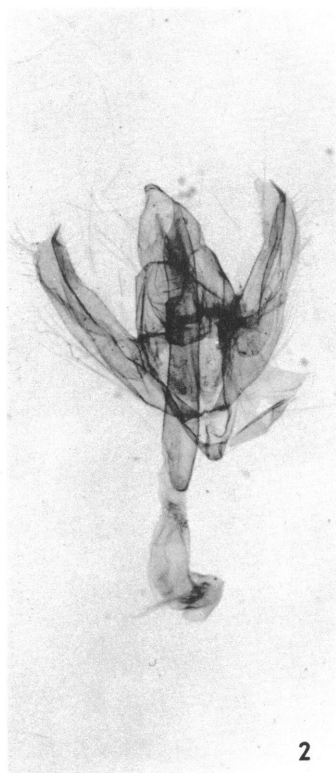
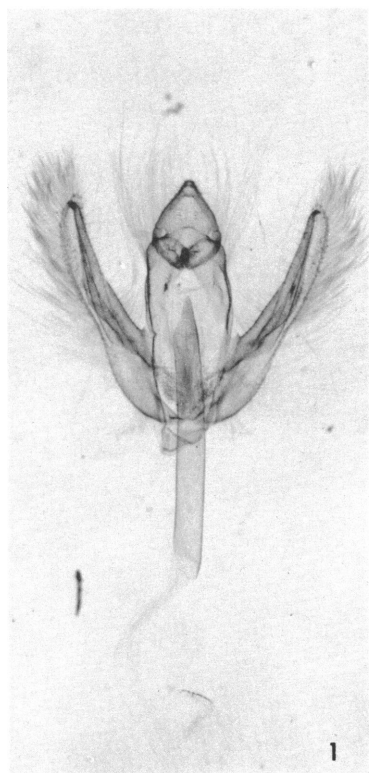


PLATE 11

MALE GENITALIA

1. *Stenoporpia blanchardi*, new species, paratype, Basin, Big Bend National Park, Texas, October 2, 1967 (A. and M. E. Blanchard; A.M.N.H.)
2. *Stenoporpia glaucomarginaria* McDunnough, Lake City, Hinsdale County, Colorado, July 3, 1957 (F. and P. Rindge; A.M.N.H.)
3. *Stenoporpia separataria* (Grote), upper camp, Pinery Canyon, Cochise County, Arizona, July 6, 1956 (Martin, Comstock, and Rees; A.M.N.H.)
4. *Stenoporpia excelsaria pullata*, new subspecies, holotype, Reuter Canyon Camp, Crook County, Wyoming, July 2, 1962 (F., P., and M. Rindge; A.M.N.H.)
5. *Stenoporpia larga*, new species, holotype, Sierra Vista, Cochise County, Arizona, July 1, 1965 (R. F. Sternitzky; A.M.N.H.)

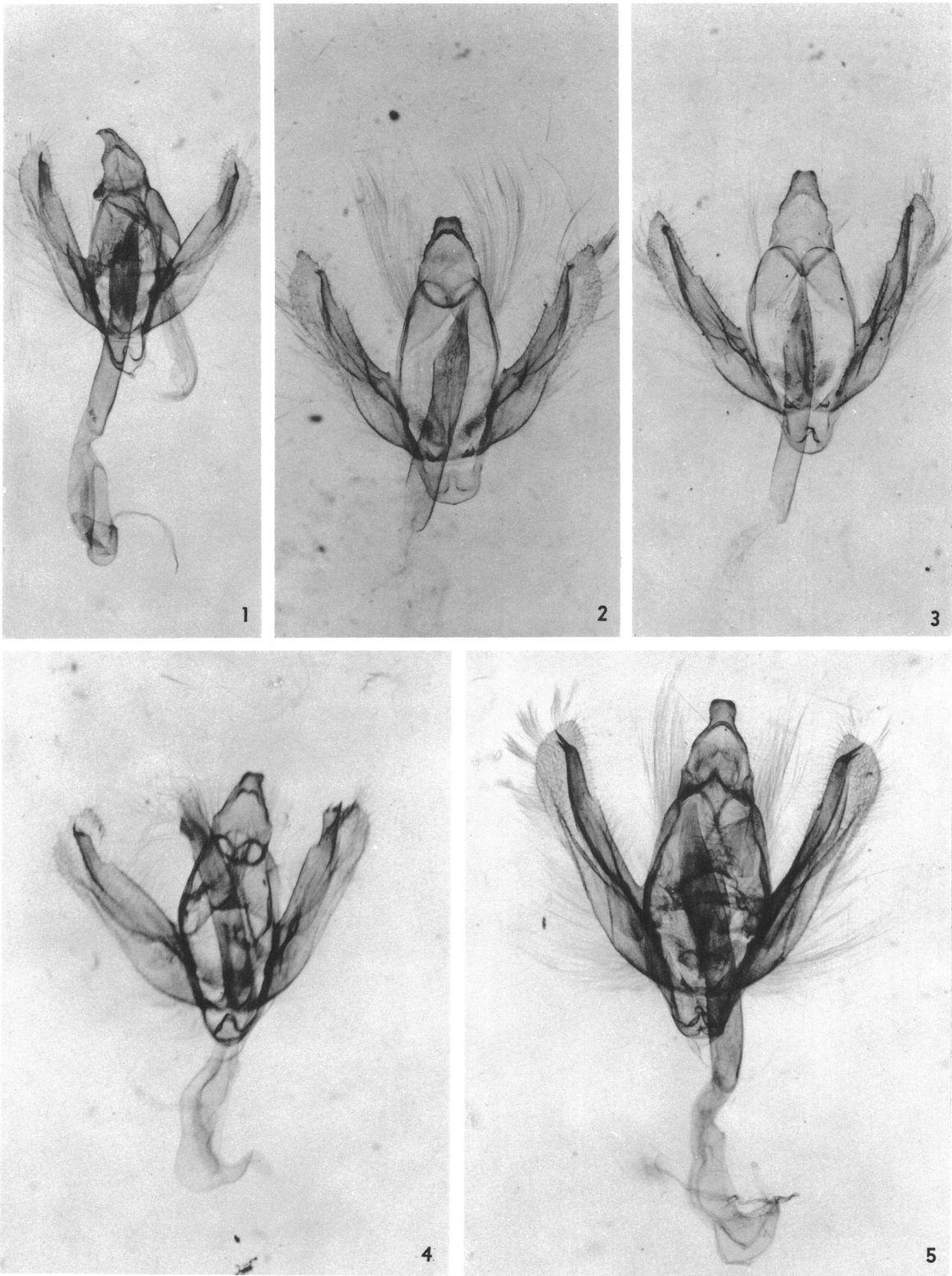


PLATE 12

MALE GENITALIA

1. *Stenoporpia cuneata*, new species, allotype, 10 miles west of El Salto, Durango, Mexico, June 13, 1964 (W. C. McGuffin; C.N.C.)
2. *Stenoporpia regula*, new species, holotype, Guerrero Mill, Hidalgo, Mexico (A.M.N.H.)
3. *Stenoporpia graciella* McDunnough, Portal, Cochise County, Arizona, June 1, 1952 (Cazier, Gertsch, and Schrammel; A.M.N.H.)
4. *Stenoporpia lea*, new species, allotype, Sierra Vista, Cochise County, Arizona, April 13, 1965 (R. F. Sternitzky; A.M.N.H.)

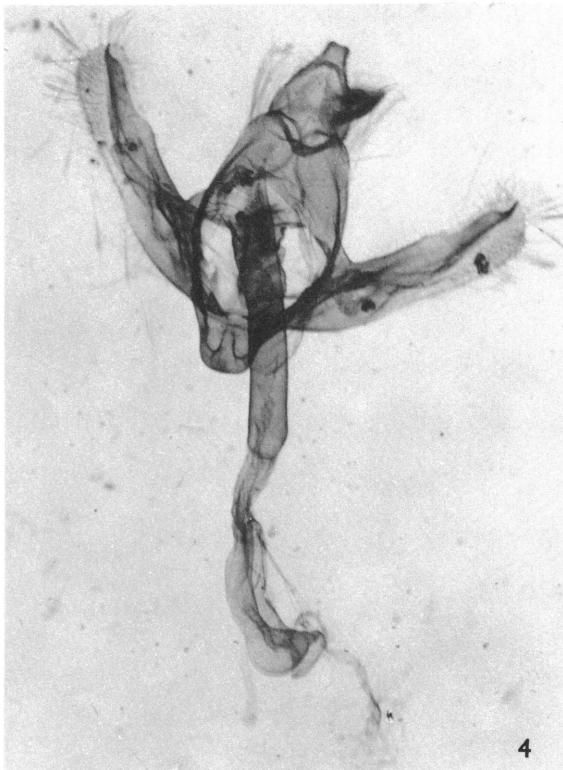
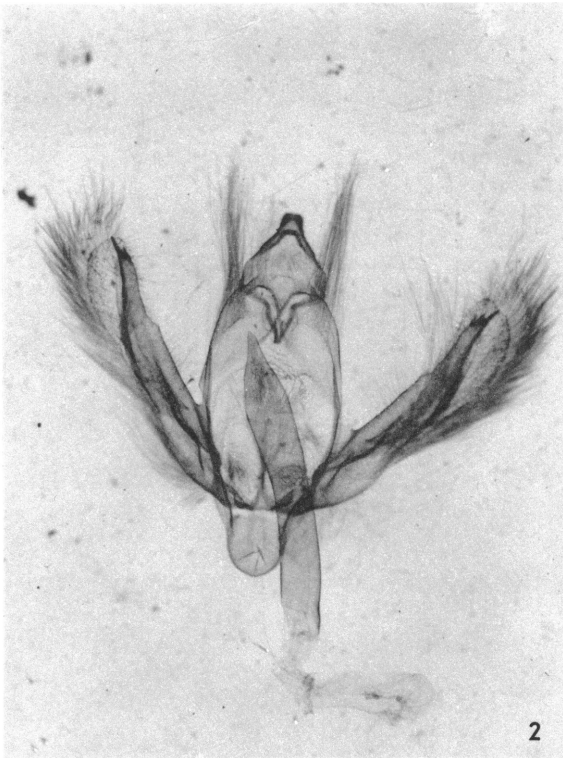
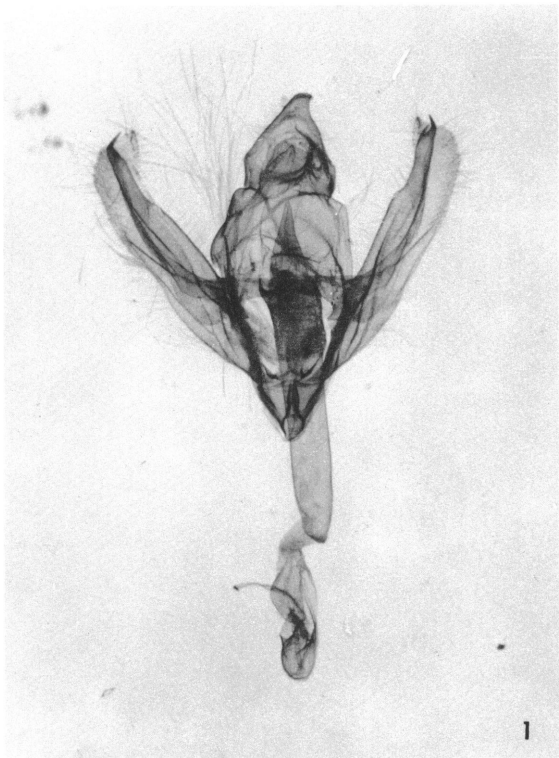
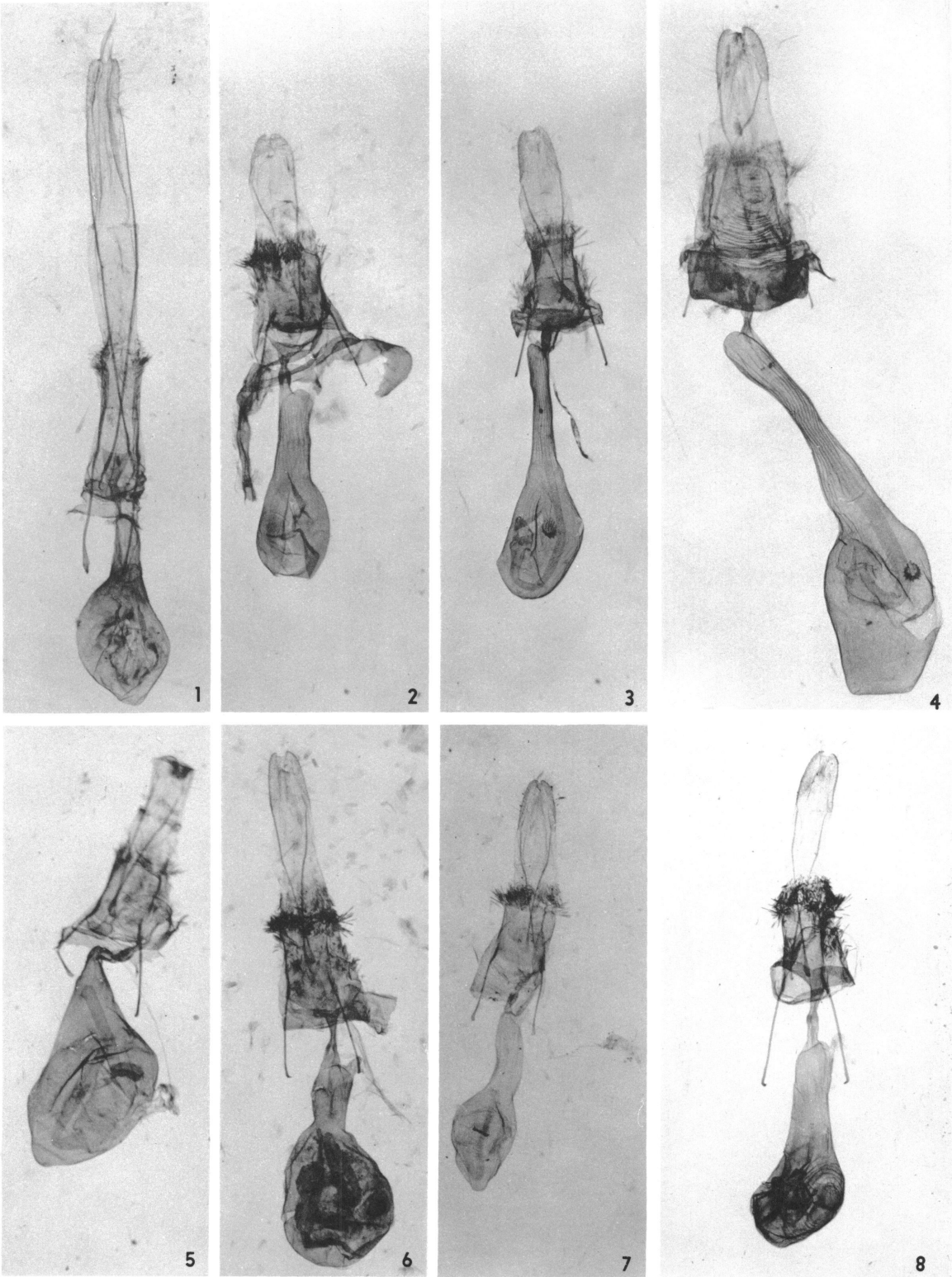


PLATE 13

FEMALE GENITALIA

1. *Stenoporpia pulchella coolidgearia* Dyar, Palm Springs, Riverside County, California, March 25, 1958 (A. H. Rindge; A.M.N.H.)
2. *Stenoporpia margueritae margueritae*, new species, allotype, Pine Camp, Otero County, New Mexico, July 3, 1964 (F., P., and M. Rindge; A.M.N.H.)
3. *Stenoporpia asymmetra* Rindge, paratype, upper camp, Pinery Canyon, Cochise County, Arizona, July 9, 1956 (Martin, Comstock, and Rees; A.M.N.H.)
4. *Stenoporpia dionaria* (Barnes and McDunnough), Carr Canyon, Cochise County, Arizona, September 25, 1965 (R. F. Sternitzky; A.M.N.H.)
5. *Stenoporpia polygrammaria* (Packard), Transcana, Manitoba, July 19, 1950 (C.N.C.)
6. *Stenoporpia mediatra* Rindge, upper camp, Pinery Canyon, Cochise County, Arizona, July 5, 1956 (Martin, Comstock, and Rees; A.M.N.H.)
7. *Stenoporpia dissonaria dissonaria* (Hulst), Hall Valley, Colorado, July (A.M.N.H.)
8. *Stenoporpia anastomosaria* (Grossbeck), upper camp, Pinery Canyon, Cochise County, Arizona, July 5, 1956 (Martin, Comstock, and Rees; A.M.N.H.)



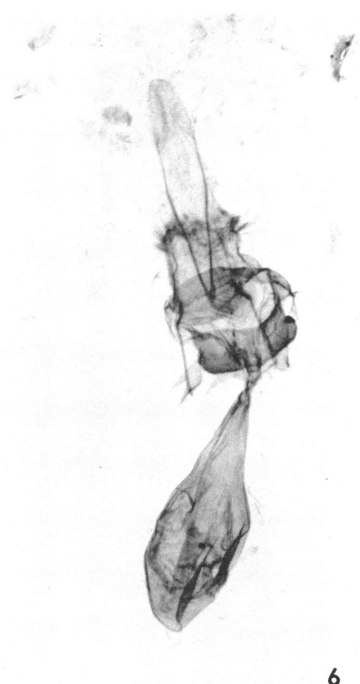
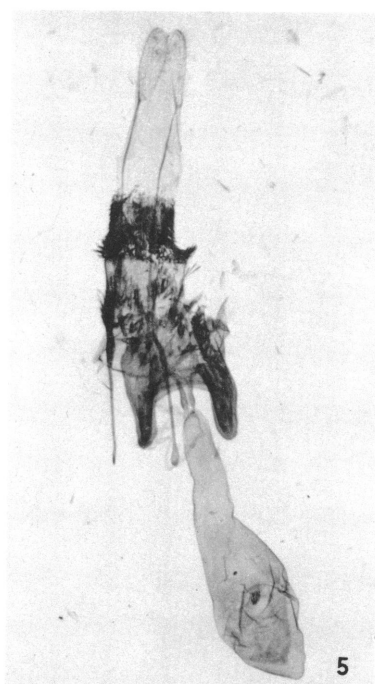
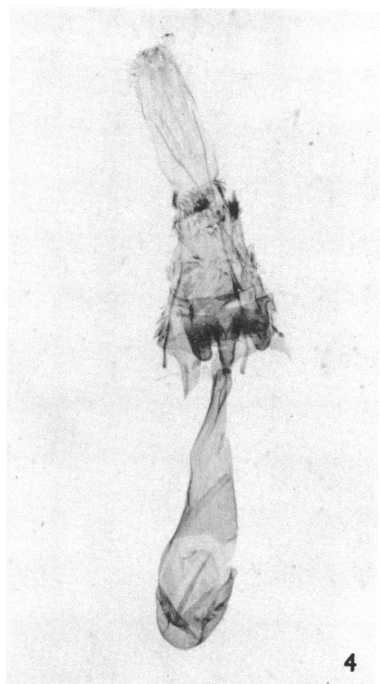
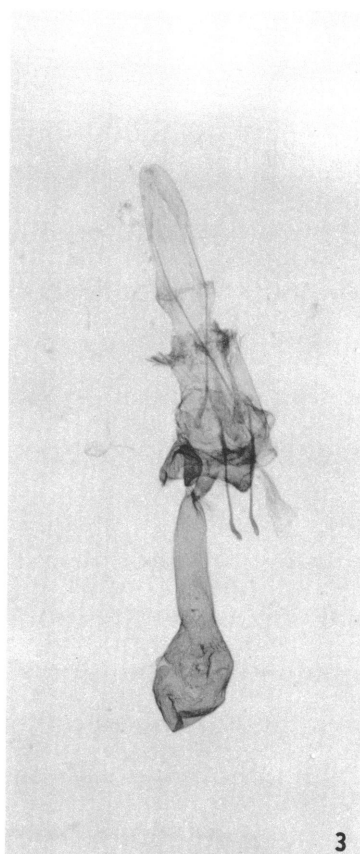
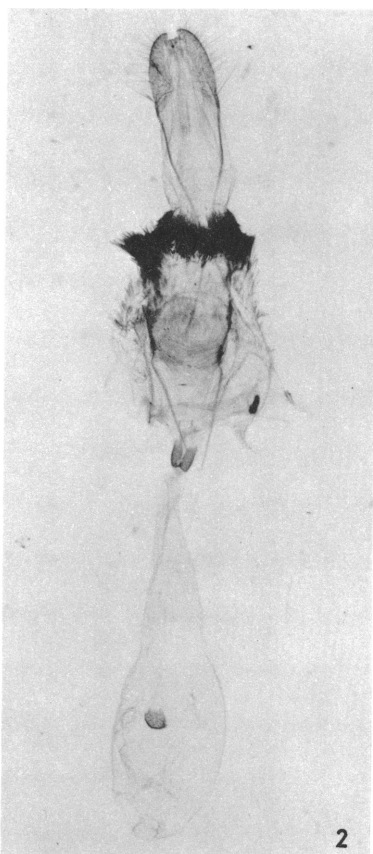
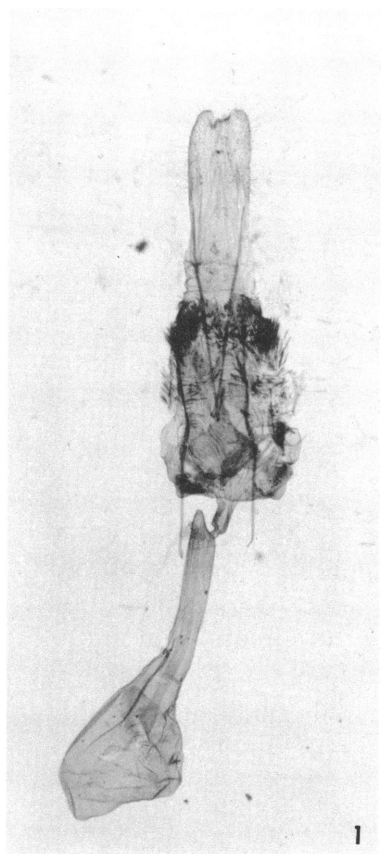




## PLATE 14

### FEMALE GENITALIA

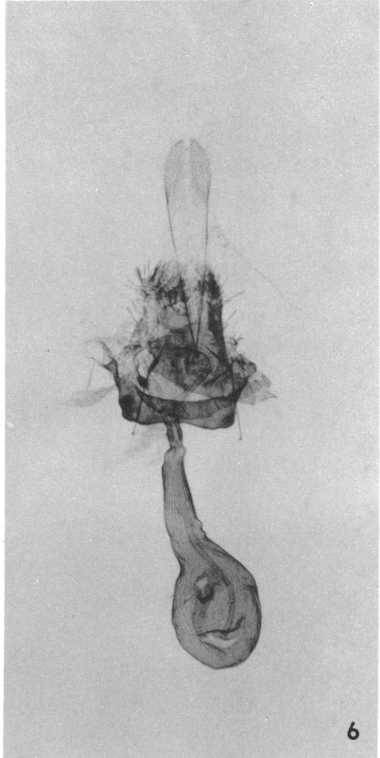
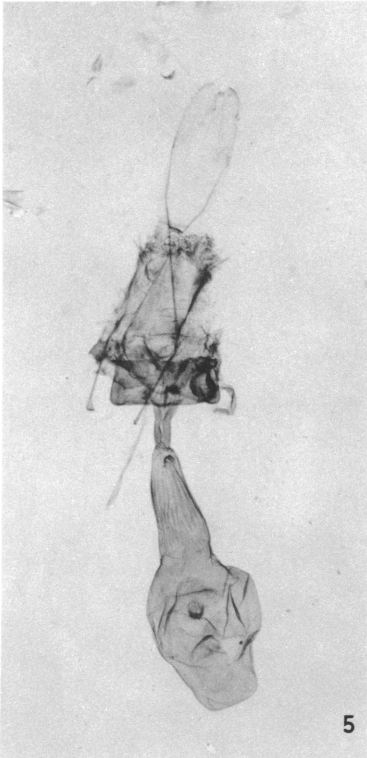
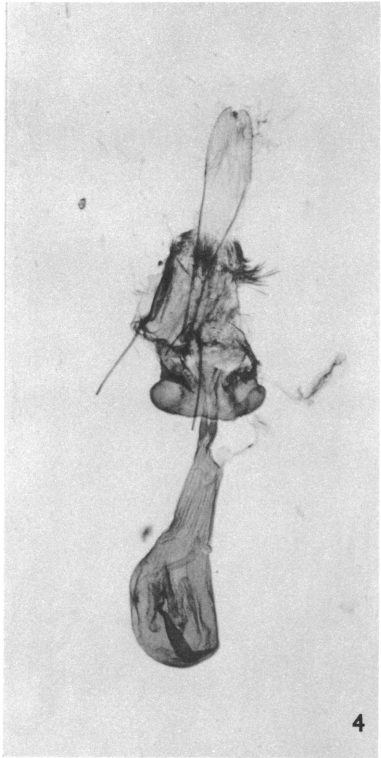
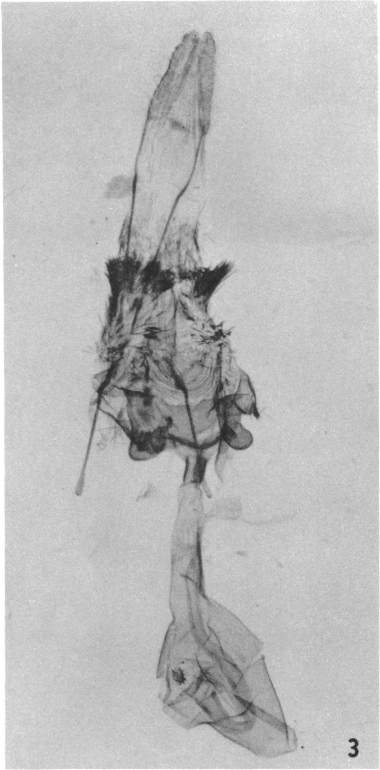
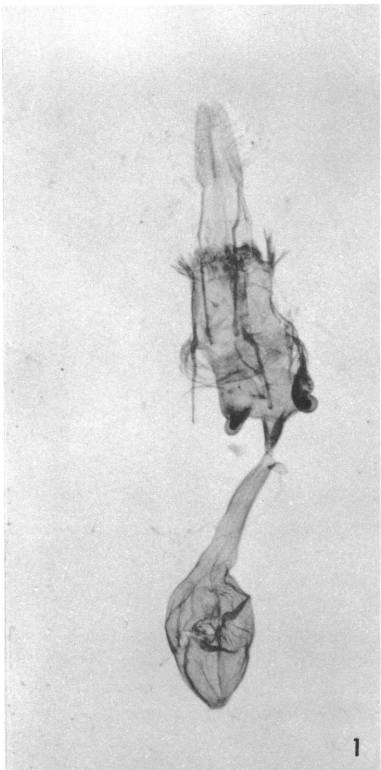
1. *Stenoporpia pulmonaria dejecta* (Hulst), Rimforest, San Bernardino County, California, October 10, 1959 (R. Leuschner; A.M.N.H.)
2. *Stenoporpia purpuraria* (Barnes and McDunnough), Todd's Lodge, Coconino County, Arizona, September 12, 1947 (G. H. and J. L. Sperry; A.M.N.H.)
3. *Stenoporpia serica*, new species, paratype, 10 miles west of El Salto, Durango, Mexico, June 10, 1964 (J. E. H. Martin; A.M.N.H.)
4. *Stenoporpia vernata vernata* (Barnes and McDunnough), Frijoles Canyon, New Mexico, August 1, 1942 (C. A. Thomas; A.M.N.H.)
5. *Stenoporpia vernallella* McDunnough, Miller Canyon, Cochise County, Arizona, May 21, 1964 (R. F. Sternitzky; A.M.N.H.)
6. *Stenoporpia insipidaria* McDunnough, Jemez Springs, Sandoval County, New Mexico, June 7, 1920 (A.M.N.H.)



## PLATE 15

### FEMALE GENITALIA

1. *Stenoporpia anelulla* (Barnes and McDunnough), Jemez Springs, Sandoval County, New Mexico, September 18 (A.M.N.H.)
2. *Stenoporpia badia*, new species, allotype, upper Santa Ana River, San Bernardino County, California, July 11, 1946 (G. H. and J. L. Sperry; A.M.N.H.)
3. *Stenoporpia macdunnoughi* Sperry, Southwestern Research Station of the American Museum of Natural History, Cochise County, Arizona, August 25, 1962 (M. Statham; A.M.N.H.)
4. *Stenoporpia blanchardi*, new species, allotype, Basin, Big Bend National Park, Texas, October 4, 1967 (A. and M. E. Blanchard; A.M.N.H.)
5. *Stenoporpia glaucomarginaria* McDunnough, Alpine Divide Camp, Apache County, Arizona, July 16, 1965 (F., P., and M. Rindge; A.M.N.H.)
6. *Stenoporpia separataria* (Grote), Bear Trap Camp, Socorro County, New Mexico, July 23, 1964 (F., P., and M. Rindge; A.M.N.H.)



## PLATE 16

### FEMALE GENITALIA

1. *Stenoporpia excelsaria pullata*, new subspecies, Cedar Creek Camp, Lincoln County, New Mexico, July 1, 1961 (F., P., and J. Rindge; A.M.N.H.)
2. *Stenoporpia larga*, new species, allotype, upper camp, Pinery Canyon, Cochise County, Arizona, July 5, 1956 (A.M.N.H.)
3. *Stenoporpia cuneata*, new species, holotype, 10 miles west of El Salto, Durango, Mexico, July 5, 1964 (W. C. McGuffin; C.N.C.)
4. *Stenoporpia graciella* McDunnough, Portal, Cochise County, Arizona, June 1, 1952 (Cazier, Gertsch, and Schrammel; A.M.N.H.)
5. *Stenoporpia lea*, new species, paratype, Portal, Cochise County, Arizona, June 20, 1955 (M. Cazier; A.M.N.H.)
6. *Stenoporpia bulbosa*, new species, holotype, 1 mile south of Cedritos, Coahuila, Mexico, June 22, 1957 (R. Zweifel; A.M.N.H.)

