Moths of Western North America
4. Distribution of "Oecophoridae" (sense of Hodges 1983) of Western North America

Contributions of the
C.P. Gillette Insect Biodiversity Museum
Colorado State University

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Introduction to the Series

This is the fourth of a series of atlases detailing the distributional occurrence of the moths of western North America. The atlas of species traditionally assigned to "Oecophoridae" covers the documented distribution of groups of "microlepidoptera" whose taxonomic relationships are are now being reconsidered.

Knowledge about western moths has accumulated rapidly, but is not generally available. Much of the exisitng knowledge is in the form of specimens in institutional and private collections and has not usually been synthesized except in the form of sporadic papers and a few monographs on particular taxa.

In this atlas a dot in a county, Mexican state, or Canadian province is based on a specimen in an institutional collection or private collection or primary literature record such as a citation in an original description or a monograph. Records may represent either resident or stray status, although the vast majority of the records in this volume represent residents because these small moths are not know to migrate or disperse long distances. Caution is advised since some ethmiid moths, notably *Ethmia discostrigella* and *E. festiva*, have been collected long distances from the nearest caterpillar host plants. Although many dots represent recent collections, some are quite old. Hence the presence of a dot does not necessarily imply current residence.

The purpose of the series is to provide in an expedient manner at least a draft synthesis of the distributional status of as many moth families as possible. For the families already covered in the *Moths of America north of Mexico*, these atlases may be considered an appendix or update. In some cases, North American species additional to those treated in the most recent works are included. In other cases, authors of an atlas may decide to include moths that occur in Mexico or Canada, but not in the contiguous United States.

These atlases might be used for many purposes, including (1) compiling state of regional lists of moths, (2) curating a collection of western species, (3) initial inventory of species that might be of conservation concern, or (4) for use in National or state Geographic Information System assessments such as GAP.

Persons interested in contributing or authoring atlases for specific moth groups should contact Dr. Paul A. Opler, Center for Biological Informatics, 4512 McMurry Ave., Fort Collins, CO 80525-3400, phone 970/226-9409, FAX 970/226-9230, e-mail paul_opler@nbs.gov for preparation instructions and further information.

Introduction to "Oecophoridae" (sense of Hodges 1983)

This is an annotated atlas to the 180 described and 10 undescribed species of taxa formerly assigned to the family Oecophoridae (e.g. Hodges 1983) that occur in the western

United States and southern portions of the western Canadian provinces. Some records for the northern states of Mexico are included; species that occur in Mexico but not in the U. S. are excluded. Most of the taxa have been subjects of fairly recent taxonomic study. The Stenomatinae were treated by Duckworth (1964), the ethmiids by Powell (1973), and the remainder by Hodges (1974), who was assisted by the prior monographic treatment of Clarke (1941).

The treatments by Duckworth and Powell include photos of adults and illustrations of genitalia for all species, and that of Hodges has color photos of adults and detailed drawings of genitalia of newly described species. Many species are sufficiently distinct to be identified from photographs of the moths, but many others are very similar or variable and may be confused. Hence, dissection of genitalia often is necessary to reliably identify the species. We are aware of a number of undescribed species in western North America, and there are unresolved problems in taxonomy within several species complexes. It is possible that previously described Neotropical taxa will be found in Texas or Arizona that are not recorded here.

We included data from reliably identified specimens (based on dissections) in collections (see acknowledgments) and from primary systematics literature. The maps are presented in the sequence given by Hodges (1983). Detailed distribution maps have not been previously presented for many of the species.

Four species occur in the area covered by the atlas, but no county records were available. *Agonopterix pergandeela* (Busck) was described from Nebraska without specific locality and, similarly, *Himmacia dilegenda* (Meyrick) and *Idioglossa miraculosa* (Frey) were described from Texas with mention of a specific locality. Hodges (1974) cites Kansas and Nebraska in the distribution for *Agonopterix dimorphella* Clarke, but no specific locations in those states are cited.

The Gelechioidea is the largest superfamily of lower Ditrysia by far (Hodges 1983), and the species numbers may rival those of Noctuoidea and Pyraloidea because vast numbers of gelechioid species remain undescribed. In better known temperate faunas (Australia, Europe, and possibly the Nearctic), Gelechioidea are more species-rich than any other superfamily. Although there is agreement on the phylogenetic integrity of the superfamily (Common 1990; Hodges 1974, 1996; Minet 1986, 1990, 1991), there have been wide differences of opinion on the number and composition of included families and their relationships (e.g. Kuznetsov and Stekol'nikov 1984, Minet 1990, Hodges 1996). As a result, conclusions about relationships among gelechioid taxa are tentative.

Recent studies have not agreed on the major lineages nor on taxonomic levels of long recognized groups. Based primarily upon functional morphology of musculature in male genitalia, Kuznetsov and Stekol'nikov (1984) defined three superfamilies among moths formerly treated as Gelechioidea. They placed Ethmiidae in Elachistoidea, other members of the traditional Oecophoridae in the Coleophoroidea, separate from the Gelechioidea. Minet (1990) used both adult and larval characters to derive clades that reflect some of the relationships proposed by Kuznetsov and Stekol'nikov, but Ethmiinae are grouped with Depressariinae and Stenomatinae in an Elachistid Assemblage, while an Oecophorid Assemblage includes the Oecophoridae (strict sense), along with blastobasids, scythrids and others, separate from a Gelechiid Assemblage. A classification proposed by Hodges (1996) differs in group membership of the major lineages, a treatment in which the divided valva and spined gnathos of the male

genitalia are heavily weighted as a synapomorphies. He proposes a broad Oecophorid Assemblage that includes most of the major taxa worldwide and a more restricted Elachistid Assemblage consisting primarily of the elachistids and broad winged members of the former Oecophoridae.

Thus, our treatment includes several groups that traditionally made up the Oecophoridae (e.g. Hodges 1983), but these comprise neither a monophyletic clade nor a consensus group according to present concepts. Oecophorinae, Peleopodinae, and Chimabachinae represent the Oecophorid Assemblage of Hodges but not Minet, while Depressariinae, Ethmiinae, and Stenomatinae are members of a clade in the Elachistid Assemblage of Hodges and Minet but not Kuznetsov and Stekol'nikov. Hodges (1996) derives the peleopodids as unrelated to Stenomatinae, in contrast to former concepts (e.g. Duckworth 1970, Hodges 1974, 1983).

Geographical Distribution

The three major groups treated here, Stenomatinae, Ethmiinae, and Depressariinae, are interpreted as the basalmost lineages of the elachistid clade (Hodges 1996). Yet, each subfamily is distinctive in biogeographical distributions, life cycle adaptations, and host plant taxa used. The three are species-rich in differing geographical regions — Depressariinae in more boreal, Ethmiinae in semiarid, and Stenomatinae in humid and subtropical areas. The latter two are nearly mutually exclusive. Ethmiines occur primarily in semiarid and deciduous woodland vegetation zones characterized by seasonal drought, while stenomatines occupy primarily mesic forest habitats and reach their greatest species richness in lowland tropical regions. Thus, centers of distribution of ethmiines occur in semiarid chaparral and thorn (microphyllous) forests of the southwestern United States, Mexico, and Central America, while few occur in wet tropical forests. Examples include the Greater Antilles, which harbor 20% of the Western Hemisphere ethmiids (Powell 1973) but only three stenomids (Duckworth 1969); nearly 400 species of stenomatines are described from the Guyana region in northern South America (Becker 1984) and not one ethmiine (Powell 1973); about 400 stenomatine species but only 6 ethmiines have been collected at the La Selva Biological Station in lowland eastern Costa Rica (J. Powell, unpublished data). The arid southwestern United States has a diverse fauna of ethmiines, including 45 of the 52 known in America north of Mexico, while the stenomatines are diverse in the southeastern United States, and most of the species treated here occur from central Texas eastward.

Biology

Larval biology.-- Evolution of larval foods in microlepidoptera has been discussed by Powell (1980) and Powell et al. (1996), who summarize general patterns of host plant use. Larvae of Oecophorinae are detritivorous, in contrast to the great majority of the western Nearctic fauna treated here, all of which feed on living plants. Oecophorinae is a dominant group in Australia (about 1,850 described species in more than 250 genera, Common (1994), a radiation that Common (1981, 1990) attributes to exploitation of the highly diverse Myrtaceae flora, particularly the persistent leaf litter; 95% of the larval food records are for living (28%) or fallen leaves of Myrtaceae (Common 1990, 1994; Australian records in Powell 1980 from

Common, personal communication). Elsewhere, at least 25 dicot families are eaten, but nearly half the records are based on detritivory, on bark or wood of dead trees, plant refuse, wood-rot fungi, ground litter, or stored products. Native Nearctic species of several genera feed in refuse in or under bark of dead trees or in wood-rot fungi (Polyporaceae) (Lawrence and Powell 1969, Hodges 1974). Included are members of *Brymblia, Decantha, Eido, Fabiola,* and *Polix* that are typical of conifer forest regions. The highly modified, wireworm-like larvae of *Inga concolorella* feed in galleries of root-boring Coleoptera or other Lepidoptera (J. Powell, unpublished data).

Seven of 30 western Nearctic species (23%) of Oecophorinae are introduced from Europe or elsewhere, and these include some of our commonest household and urban moths (*Batia lunaris, Endrosis sarcitrella, Hofmannophila pseudospretella*).

The Peleopodinae are primarily Neotropical, and only one species occurs in the western United States. Its biology is not recorded, but congeneric tropical species have been reared from *Lantana* (Verbenáceae) and fruit of *Byrsonima* (Malpighiaceae) (Hodges 1974), while a related species in Argentina, *Pseuderotis canescens* Clarke, evidently is polyphagous (Bourquin 1957).

The Chimabachinae is represented in western North America by just one introduced European species, which is polyphagous. It is of interest as a winter moth, the female of which is brachypterous and flightless (Hodges 1974).

The largest groups treated here, Stenomatinae (24 species), Ethmiinae 47 species), and Depressariinae (84 species), are all living-plant feeders, as is true of most of the other elachistid assemblage taxa.

Ethmiinae on a world basis feed largely on plants in the Boraginales (Hydrophyllaceae, Ehretiaceae, Boraginaceae) (80% of available records) (Powell 1980, 1983, D. Janzen, and J. Powell, unpublished data from the United States and Costa Rica). In the western Nearctic, each species is host-specific to one plant genus, and Hydrophyllaceae, especially *Phacelia*, provide most of the foodplants. Several species have adapted to annual *Amsinckia* (Boraginaceae), while *Ethmia scylla* uses *Collinsia* (Scrophulariaceae). Some tropical species that range north to southern Texas eat *Ehretia*, while the *Ethmia discostrigella* complex is aberrant in its species use of *Cercocarpus* (Rosaceae) (Powell 1971). Our one native *Pyramidobela* for which the host plant is known feeds on *Penstemon* (Scrophulariaceae), while the introduced Neotropical species, *Pyramidobela angelarum*, depends upon ornamental *Buddleia* (Loganiaceae) from China (Powell 1973). The larval host of *Pseudethmia* is unknown, but *Coldenia* (Boraginaceae) is suspected on the basis of adult occurrence.

Because Stenomatinae are species-rich in the Neotropics foodplants are proportionately poorly documented, but larvae have been recorded on at least 16 angiosperm families, predominantly Myrtaceae (Southern Hemisphere) and Fagales (North America) (Powell 1980). Thus Nearctic species specialize on oaks (Fagaceae, 60% of the recorded species) (Duckworth 1964, Powell 1980). Several western United States species of *Stenoma* and *Rectiostoma* feed on oaks and allies (Fagaceae), sometimes in mixed colonies with depressariines (*Himmacia, Psilocorsis*). Other stenomatines use woody shrub or tree hosts, including manzanita (*Arctostaphylos*: Ericaceae)

Nearctic Depressariinae are recorded feeding on a dozen plant families, primarily umbells (Apiaceae, with 35% of the recorded species) and composites (Asteraceae, with 20%). Several species are polyphagous, and others are recorded from two plants of disparate families, Asteraceae and Myricaeae or Urticaceae, Betulaceae and Salicaceae, Juglandaceae and Rutaceae

(Hodges 1974, Powell 1980 and unpublished data), and these need further investigation to determine if polyphagy or cryptic, unrecognized sister species might be involved .

Life cycle patterns.-- Ethmiines are interesting on account of the diverse strategies they have evolved to cope with seasonal drought. Most western Nearctic species are univoltine, adapted to feed on annual plants in early spring. Members of the albitogata group fly very early, January in coastal California and southern Arizona, to March or early April in more northern species. They are diurnal and darkly pigmented, evidently a thermoregulatory adaptation. Females oviposit into immature inflorescences of specific borage or hydrophyll hosts that appear with spring rains. The larvae feed within the developing inflorescences, ensuring survival that might not be afforded if they tended to use the foliage, which is scarce in drier seasons. *Ethmia charybdis* is a desert winter moth; the female is flightless, and both sexes lack functional mouthparts. Adults are active nocturnally, sometimes in very cold conditions (31 - 35 F.). Eggs are deposited evidently at the onset of germination so that larvae can begin feeding as soon as plant growth begins. Similarly, species of the macelhosiella group fly in late autumn in desert regions. The non-feeding adults can live up to two weeks, are nocturnal, and produce eggs in November that hibernate until early spring (Powell 1971, 1973 and unpublished data).

Estivation and hibernation takes place by pupae in all ethmiids for which biologies are known, and during periods of drought, when annual plants may be very scarce or absent, ethmiines of several groups can delay diapause development and wait until a more favorable season. Emergences of adults under lab conditions have been recorded after two to four years in several species (Powell 1975, 1987).

Depressariines also are diverse in the western Nearctic (more than half the Nearctic fauna), but they tend to occupy boreal and montane regions to a greater degree than ethmiines and are scarce in semiarid habitats. Many or most depressariines feed on annual plants, are univoltine, and overwinter as adults in prereproductive diapause, a life cycle pattern that is unknown in ethmiines. Also in contrast to stenomatines and ethmiines, most depressariines, although nocturnal, are only sporadically attracted to lights. Thus, most species are best collected as larvae, and collections of adults often are made during the winter months, when they are found under loose bark or in other places of hiding.

Conservation

None of the Nearctic species treated here has been given formal status as endangered or threatened. Some microlepidoptera such as the North American ethmiines are relatively well known, but most species in this atlas are sought by relatively few biologists, and their identification often depends on dissection of their genitalia. As a result, a number of species are known only from the original type specimen or series or are known only from quite limited geographic areas, where they might potentially by threatened by human activities. Examples include:

Ethmnia minuta Powell, 1973, which is known from several sites in Riverside and San Diego counties that are all within the area of greater urban sprawl of southern coastal California.

Ethmia tricula Powell, 1973, is known only from an unique type collected in 1963 near Moreno in Riverside Co., California. This area is under pressure of urban development.

Ethmia umbrimarginella Busck, 1907, which was described from Mesilla, New Mexico, has been collected a few times in southern Arizona. It has escaped notice because it flies in

5

January and February.

Ethmia monachella Busck, 1910, is known only from the unique type specimen collected at Boulder, Colorado in March 1908, and may have been overlooked owing to its early flight period. Sporadic searches in recent years near Boulder and nearby foothill and prairie habitats have been unsuccessful. It is considered a Federal "species of special concern" (U.S. Fish and Wildlife Service, 1994).

Ethmia burnsella Powell, 1973, which is known only from Palo Duro Canyon, Randall Co., Texas, collected in 1959 and 1961, but the surrounding region has not been adequately surveyed.

Agonopterix toega Hodges, 1974, was described from adults raised from caterpillars collected in Sanicula species in 1941 on San Clemente Island by the late Chris Henne. A long series of *A. toega* was collected in December 1981 (J. Powell). The island's natural vegetation has been devastated by goats and other human-caused factors, but goats and pigs were eradicated from the island by 1993. The species' present status is unknown.

Depressaria moya Clarke, 1947, is known only from the type collection raised from *Lomatium vaginatum* (Apiaceae) at Hornbrook, Siskiyou County, California. It has not been collected since the orignal collection, but this species and other *Depressaria*s found by Clarke and known from few locations are poorly surveyed and not necessarily in need of conservation.

Acknowledgments

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855.   *Agonopterix gelidella* (Busck)

858.   *Agonopterix nubiferella* (Walsingham)

860.   *Agonopterix muricolorella* (Busck)

861.   *Agonopterix oregonensis* Clarke

863.   *Agonopterix clarkei* Keifer

867.   *Agonopterix pulvipennella* (Clemens)

870.   *Agonopterix fusciterminella* Clarke
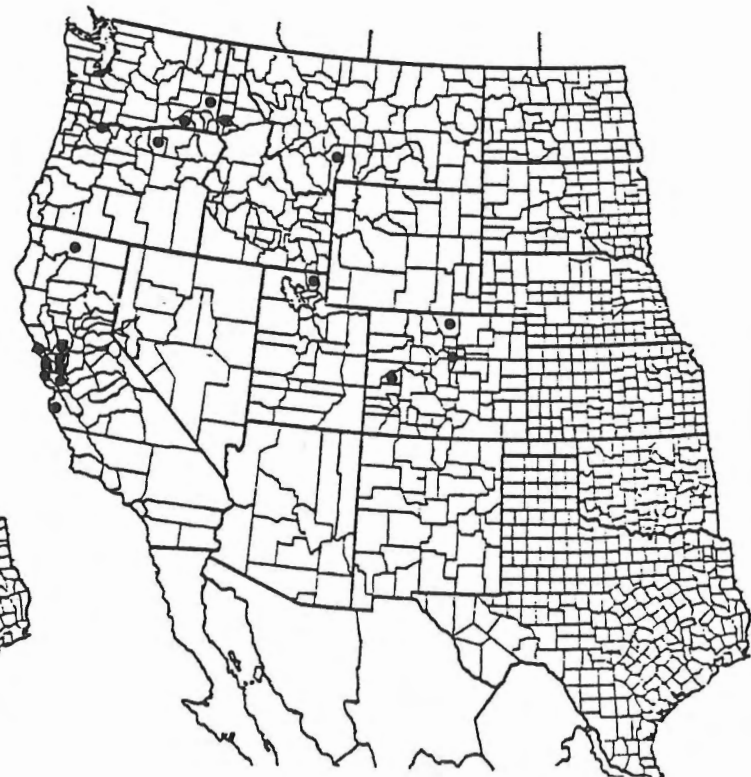
871.   *Agonopterix chrautis* Hodges

872.   *Agonopterix sabulella* (Walsingham)

873.   *Agonopterix dammersi* Clarke

874.   *Agonopterix cajonensis* Clarke

874.1 *Agonopterix alstroemeriana* (Clerck)

875. *Agonopterix toega* Hodges

876. *Agonopterix rosaciliella* (Busck)

878. *Agonopterix canadensis* (Busck)

879. *Agonopterix arnicella* (Walsingham)

882. *Agonopterix robiniella* (Packard)

883. *Agonopterix cratia* Hodges

885. *Agonopterix sanguinella* (Busck)

886. *Agonopterix lecontella* (Clemens)

887. *Agonopterix dimorphella* Clarke

888. *Agonopterix pergandeella* (Busck)

889. *Agonopterix argillacea* (Walsingham)

891. *Agonopterix psoraliella* (Walsingham)

892. *Agonopterix hesphoea* Hodges

893.   *Agonopterix antennariella* Clarke

895.   *Agonopterix nervosa* (Haworth)

896.   *Agonopterix posticella* (Walsingham)

897.   *Agonopterix latipalpella* Barnes & Busck

899. *Exaeretia canella* (Busck)

900. *Depressariodes umbraticostella* (Walsingham)

901. *Exaeretia sordidella* Clarke

902. *Exaeretia gracilis* (Walsingham)

903.   *Exaeretia thoracenigraeella* (Chambers)

904.   *Exaeretia thoracefasciella* (Chambers)

905.   *Exaeretia nechlys* Hodges

906.   *Exaeretia nivalis* (Braun)

907.   *Exaeretia hildaella* Clarke

908.   *Exaeretia ciniflonella* (Lienig & Zeller)

910.   *Exaeretia fulva* (Walsingham)
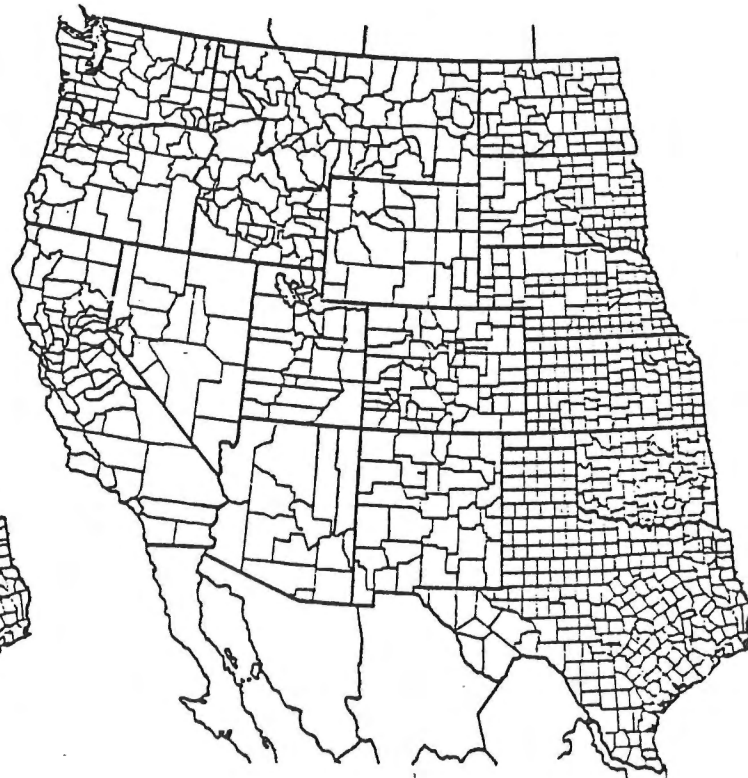
912. *Semioscopis packardella* (Clemens)

913. *Semioscopis merricella* Dyar

914. *Semioscopis inornata* Walshingam

915. *Semioscopis megamicrella* Dyar

916.   *Semioscopis aurorella* Dyar

917.   *Semioscopis mcdunnoughi* Clarke

——.   *Chlamydastis habrolepis* Blanchard & Knudson

Depressariinae

918.   *Depressaria atrostrigella* Clarke

919.   *Depressaria artemisiae* Nickerl

920.   *Depressaria palousella* Clarke

921.   *Depressaria cinereocostella* Clemens

922.   *Depressaria pastinacella* (Duponchel)

923.   *Depressaria juliella* (Busck)

924.   *Depressaria daucella* (Denis & Schiff.)

926.   *Depressaria alienella* Busck

928. *Depressaria constancei* Clarke

929. *Depressaria betina* Clarke

930. *Depressaria whitmani* Clarke

931. *Depressaria schellbachi* Clarke

932. *Depressaria angelicivora* Clarke

933. *Depressaria leptotaeniae* Clarke

934. *Depressaria yakimae* Clarke

935. *Depressaria multifidae* Clarke

936.   *Depressaria moya* Clarke

937.   *Depressaria besma* Clarke

938.   *Depressaria pteryxiphaga* Clarke

939.   *Depressaria togata* Walsingham

940. *Depressaria armata* Clarke

941. *Depressaria angustati* Clarke

927. *Depressaria artemisiella* McDunnough

942. *Nites grotella* (Robinson)

943. *Nites atrocapitella* (McDunnough)

944. *Nites betulella* (Busck)

947. *Apachea barbarella* (Busck)

948. *Himmacia huachucella* (Busck)

949. *Himmacia stratia* Hodges

950. *Himmacia dilegenda* (Meyrick)

952. *Machimia trigama* (Meyrick)

954. *Eupragia banis* Hodges

955. *Psilocorsis quercicella* Clemens

956. *Psilocorsis cryptolechiella* (Chambers)

957. *Psilocorsis reflexella* Clemens

958. *Psilocorsis amydra* Hodges

959. *Psilocorsis arguta* Hodges

960. *Psilocorsis cirrhoptera* Hodges
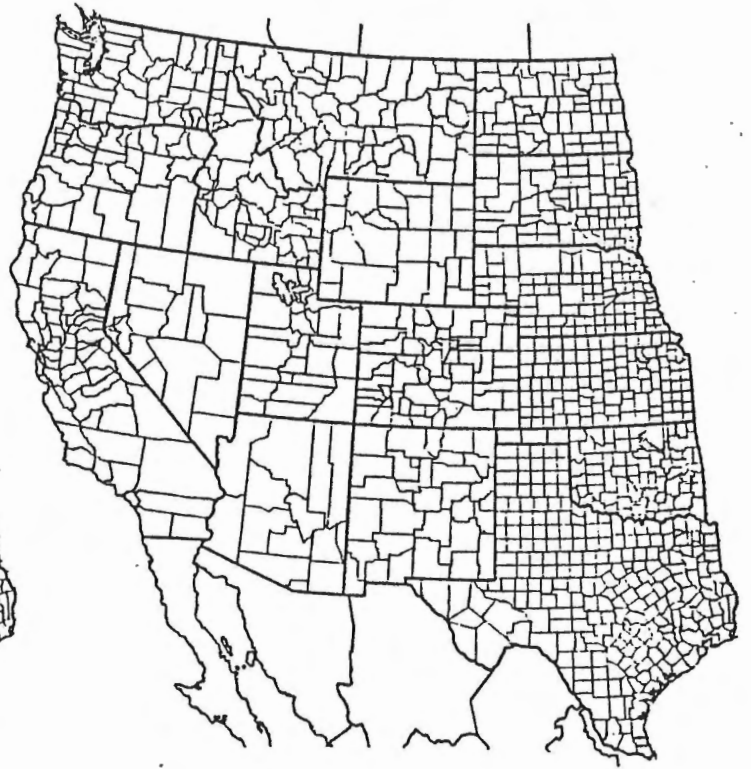
959.1 *Psilocorsis fatula* Hodges

Ethmiinae

961.   *Pyramidobela quinquecristata* (Braun)

961.1.   *Pyramidobela angelaurm* Keifer

961.2.   *Pyramidobela agyrtodes* (Meyrick)

961.3 *Pyramidobela ochrolepra* Powell

962. *Ethmia umbrimarginella* Busck

963. *Ethmia lassenella* Busck

964. *Ethmia coquillettella* Busck

965. *Ethmia monachella* Busck

966. *Ethmia scylla* Powell

967. *Ethmia brevistriga* Clarke

968. *Ethmia albitogata* Walsingham

969. *Ethmia plagiobothrae* Powell

970. *Ethmia minuta* Powell

971. *Ethmia tricula* Powell

972. *Ethmia charybdis* Powell

973. *Ethmia albistrigella* (Walsingham)

974. *Ethmia nadia* Clarke

975. *Ethmia orestella* Powell

976. *Ethmia semilugens* (Zeller)

977. *Ethmia epileuca* Powell

978. *Ethmia apicipunctella* (Chambers)
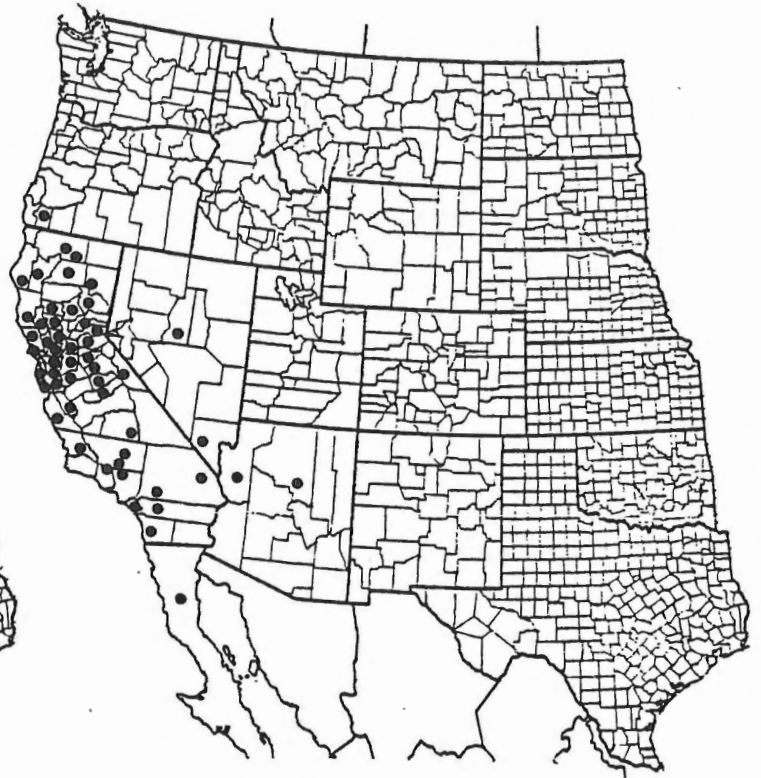
979. *Ethmia arctostaphylella* (Walsingham)
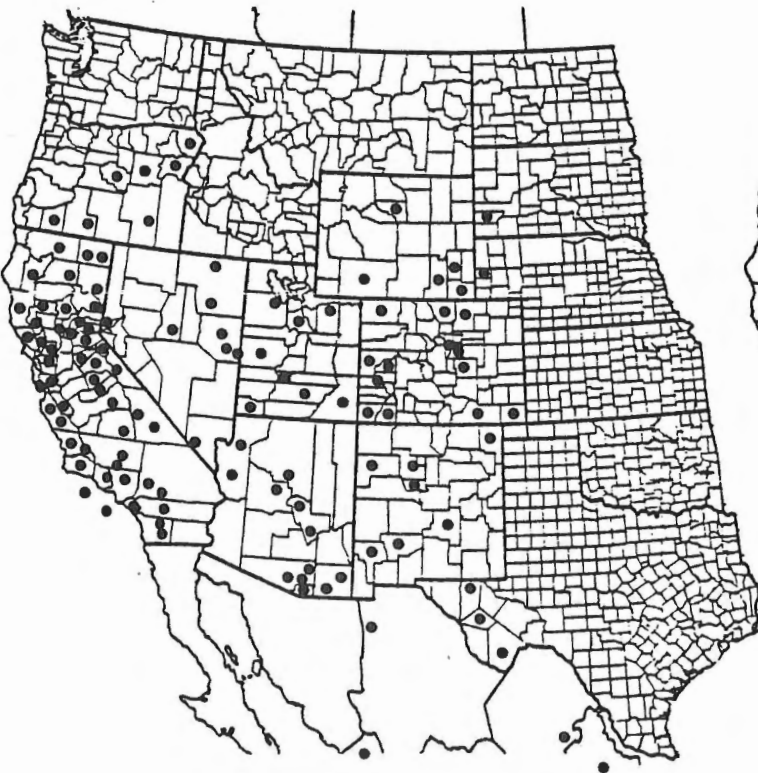
980. *Ethmia discostrigella* (Chambers)
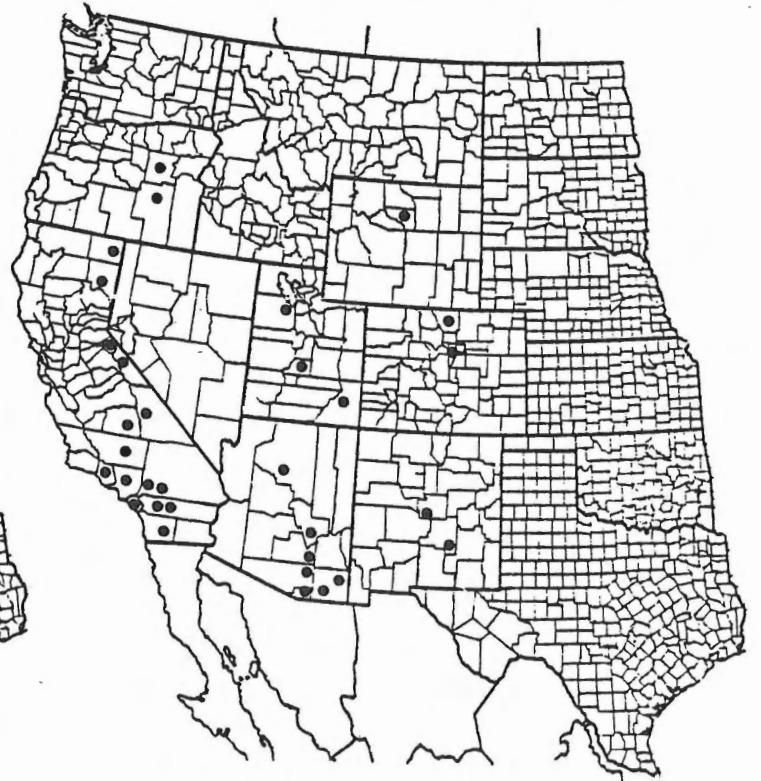
981. *Ethmia semitenebrella* Dyar

983. *Ethmia geranella* Barnes & Busck

984. *Ethmia timberlakei* Powell

985. *Ethmia macneilli* Powell

985.1 *Ethmia* undescribed species A, Macelhosiella Group

985.2 *Ethmia* undescribed species B, Macelhosiella Group

987. *Ethmia monticola* (Walsingham)

987a. *Ethmia m. emmeli* Powell

987b.   *Ethmia m. fuscipedella* (Walsingham)

994.1.   *Ethmia festiva* Busck
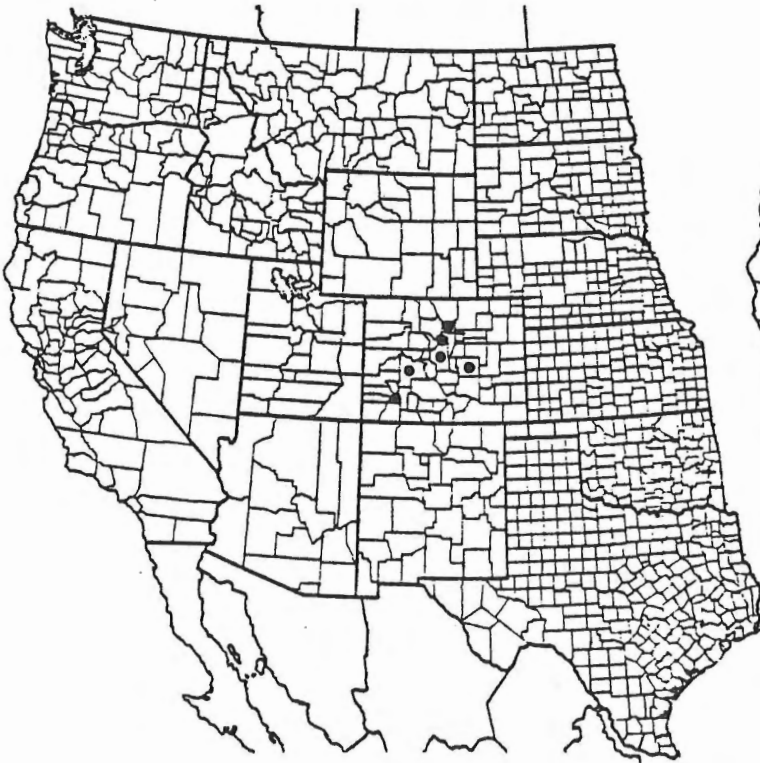
988.   *Ethmia caliginosella* Busck

989.   *Ethmia hagenella* (Chambers)

990.   *Ethmia mimihagenella* Powell

991.   *Ethmia burnsella* Powell

992.   *Ethmia zelleriella* (Chambers)

993.   *Ethmia delliella* (Fernald)

994.   *Ethmia bittenella* (Busck)

999.   *Ethmia longimaculella* (Chambers)

1000.   *Ethmia semiombra* Dyar
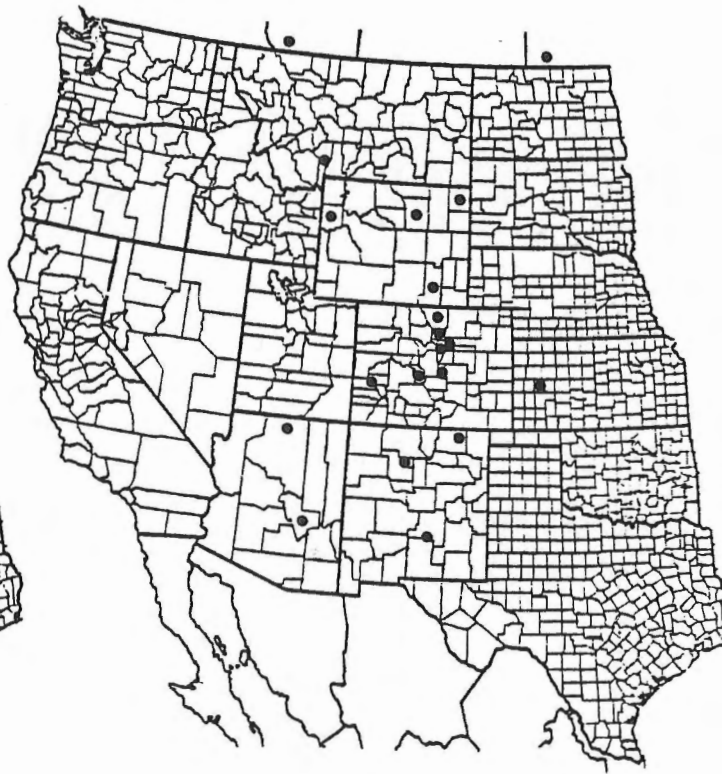
1001.   *Ethmia albicostella* (Beutenmüller)

1002. *Ethmia mirusella* (Chambers)

1003. *Ethmia trifurcella* complex

1004. *Ethmia marmorea* (Walsingham)

1005. *Ethmia hodgesella* Powell

1006.   *Ethmia sphenisca* Powell
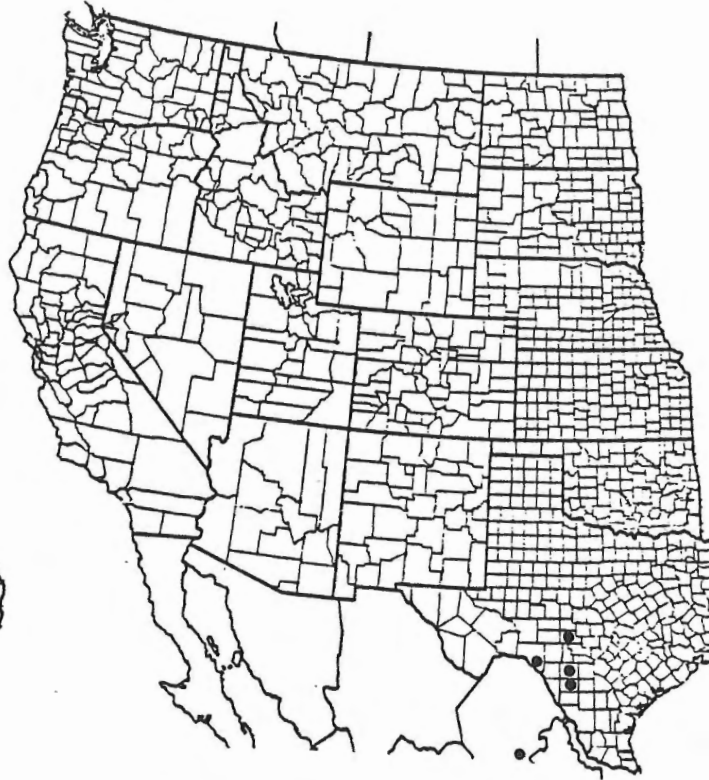
1007.   *Ethmia prattiella* Busck

1007.1.   *Ethmia angustalatella* Powell

1008.   *Pseudethmia protuberans* Clarke

Stenomatinae

1010. *Durrantia piperatella* (Zeller)

1011. *Antaeotricha schlaegeri* (Zeller)

1012. *Antaeotricha lindseyi* (Barnes & Busck)

1013. *Antaeotricha unipunctella* (Clemens)

1014. *Antaeotricha leucillana* (Zeller)

1015. *Antaeotricha osseella* (Walsingham)

1016. *Antaeotricha decorosella* (Busck)
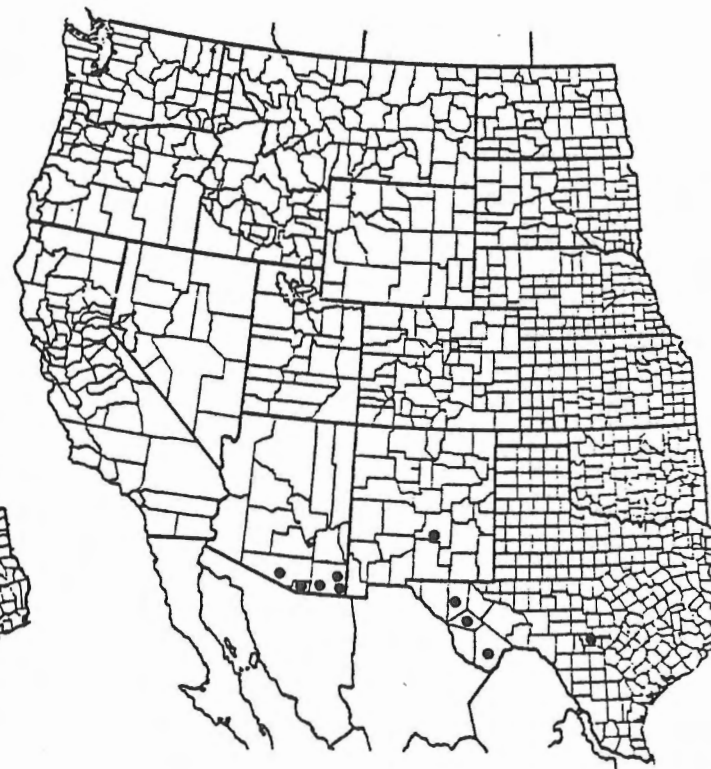
1017. *Antaeotricha furcata* (Walsingham)

1018.   *Antaeotricha irene* (Barnes & Busck)

1019.   *Antaeotricha humilis* (Zeller)

1020.   *Antaeotricha agrioschista* (Meyrick)

1021.   *Antaeotricha thomasi* (Barnes & Busck)

1022. *Antaeotricha haesitans* (Walsingham)

1023. *Antaeotricha fuscorectangulata* Duckworth

1024. *Antaeotricha vestalis* (Zeller)

1025. *Antaeotricha manzanitae* (Keifer)

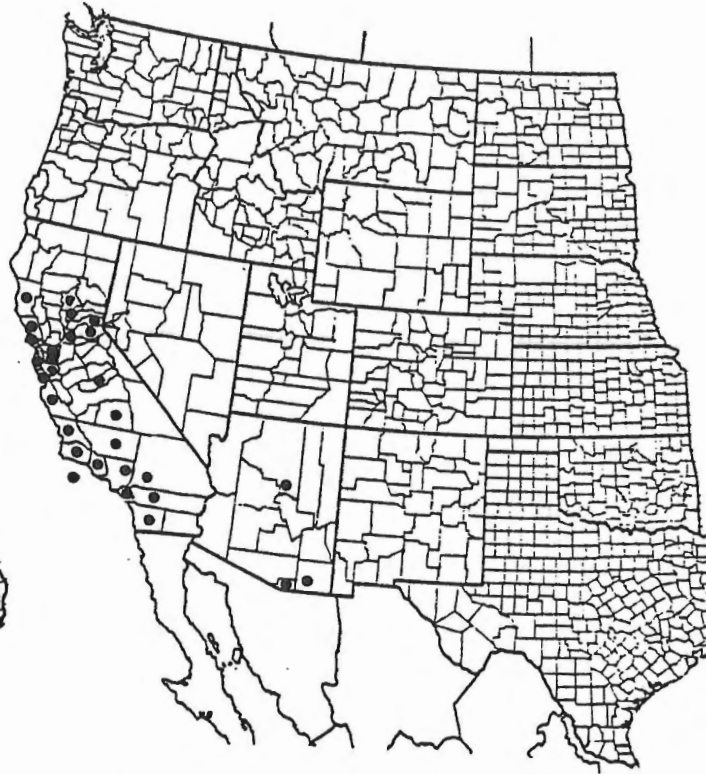1032. *Stenoma mistrella* Busck

1033. *Stenoma crambitella* Walsingham

1034. *Inga sparsiciliella* (Clemens)

1035. *Inga cretacea* (Zeller)

1026. *Rectiostoma xanthobasis* (Zeller)

1027. *Rectiostoma fernaldella* (Riley)

1028. *Menestomorpha oblongata* Walsingham

1031. *Menesta melanella* Murtfeldt

Oecophorinae

1036. *Inga ciliella* (Busck)

1037. *Inga obscuromaculella* (Chambers)

1038. *Inga canariella* (Busck)

1039. *Inga concolorella* (Beutenmuller)

1040.   *Inga proditrix* Hodges

1041.   *Inga rimatrix* (Hodges)

1042. *Decantha boreasella* (Chambers)

1043. *Decantha stecia* Hodges

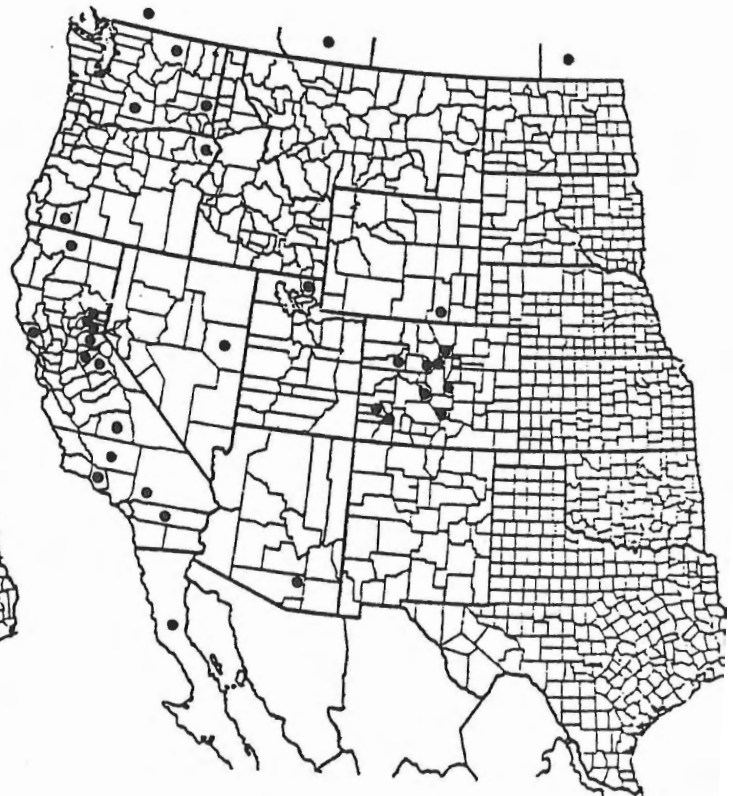1044. *Decantha tistra* Hodges

1045. *Decantha stonda* Hodges

1046. *Callima argenticinctella* Clemens

1049. *Batia lunaris* (Haworth)

1054. *Fabiola quinqueferella* (Walsingham)

1055. *Brymblia quadrimaculella* (Chambers)

1056.   *Chambersia haydenella* (Chambers)

1057.   *Esperia sulphurella* (Fabricius)

1058.   *Polix coloradella* (Walsingham)

1061.   *Borkhausenia nefrax* Hodges

1062.   *Carolana ascriptella* (Busck)

1063.   *Carolana golmeia* Hodges

1064.   *Hofmannophila pseudospretella* (Stainton)

1065.   *Martyrhinga latipennis* (Walsingham)
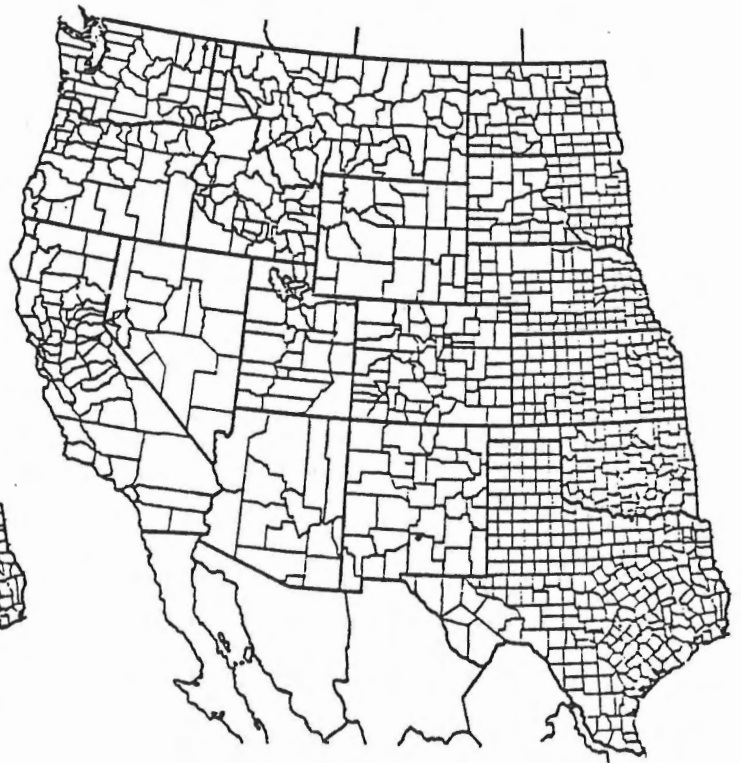
1067.   *Endrosis sarcitrella* (Linnaeus)

1068.   *Eido trimaculella* (Fitch)

1069.   *Carcina quercana* (Fabricius)

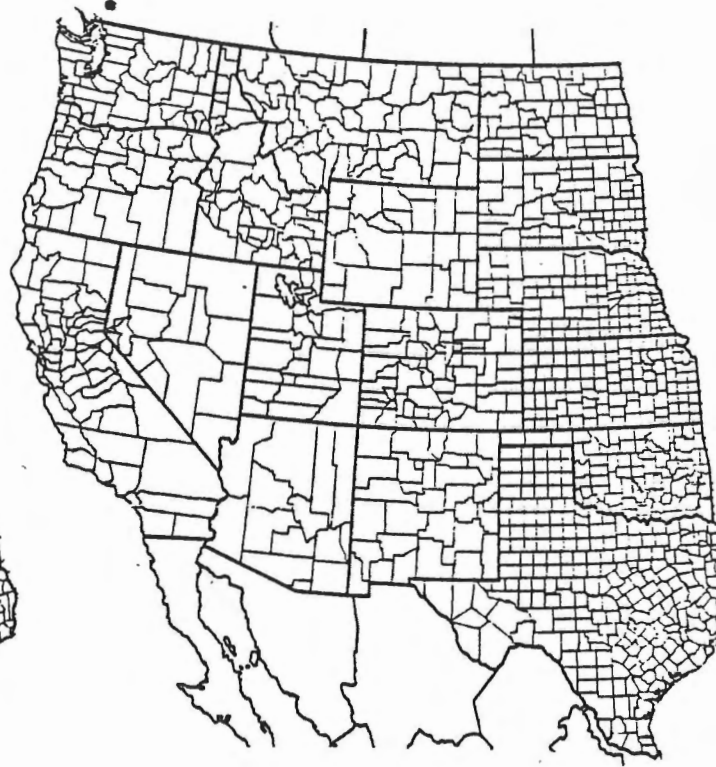1072. *Idioglossa miraculosa* (Frey)

1074. *Pleurotus albastrigulella* (Kearfott)

1075. *Cheimophila salicella* (Hübner)