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THE MOTHS (MACROHETEROCERA) of a
CHAPARRAL PLANT ASSOCIATION
in the SANTA MONICA MOUNTAINS
of SOUTHERN CALIFORNIA

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THIS ANNOTATED LIST of moths presents the complete results of 5 years of intensive collecting (1953-1957), and about 5 years of sporadic collecting (1948-1952), during 20 years of residence (1938-1958), in one locality in the Santa Monica Mountains of coastal Southern California. Without exception, all the nocturnal moths were collected at this specific address: 9601 Oak Pass Rd., 4.6 miles north of Beverly Hills, Los Angeles County, California, in the eastern Santa Monica Mountains, on a ridge at 1,100 feet elevation. (Mileage from Beverly Hills is measured from Sunset Blvd. at Benedict Canyon Dr.). Most elevations in the area are under 1,000 feet, although a few ridges reach approximately 1,200 feet.

DESCRIPTION OF THE ENVIRONMENT

Vegetation: The vegetation in the locality was, at the time of this study, relatively undisturbed; however, the area has been undergoing drastic change since about 1955, due to increase in population and residential expansion. Extensive subdivisions are totally destroying the native vegetation in many places. It would, therefore, be of value to describe the native vegetation as it originally was, listing important plants alphabetically. (The two lists that follow are not complete, but they include the prominent plants in the area, as well as a number of the less abundant species).

Most of the ABUNDANT plants at 9601 Oak Pass Rd., or within one mile: *Adenostoma fasciculatum*, *Artemisia californica*, *A. douglassiana*, *Asclepias eriocarpa*, *Brassica geniculata*, *B. nigra*,

Brickellia californica, *Brodiaea* sp., *Ceanothus megacarpus*, *C. spinosus*, *Centaurea solstitialis*, *Cercocarpus betuloides*, *Chlorogalum pomeridianum*, *Collinsia* sp., *Cordylanthus filifolius*, *Corethrogyne filaginifolia*, *Cuscuta subinclusa* (on *Ceanothus spinosus*, *Rhus laurina*, etc.), *Delphinium cardinale*, *Elymus condensatus*, *Encelia californica*, *Eriogonum fasciculatum*, *Eriophyllum confertiflorum*, *Erodium* spp., *Galium angustifolium*, *G. nuttallii*, 3 *Gnaphalium* spp., *Godetia* (*Clarkia*) sp., *Haplopappus squarrosus*, *Heteromeles* (*Photinia*) *arbutifolia*, *Heterotheca grandiflora*, *Juglans californica*, *Lathyrus laetiflorus* ssp., *barbarae*, *Lonicera subspicata* var. *johnstonii*, *Lotus scoparius*, *Lupinus succulentus*, *Malacothrix saxatilis* (var.?), *Malva parviflora*, *Marah macrocarpus*, *Marrubium vulgare*, *Medicago hispida*, *Melilotus indicus*, *Mimulus longiflorus*, *Montia perfoliata*, *Nicotiana glauca*, *Penstemon cordifolius*, *Perezia microcephala*, *Phoradendron flavescens* (on *Juglans*), *Prunus ilicifolia*, *Quercus agrifolia*, *Q. dumosa*, *Rafinesquia californica*, *Rhamnus crocea* ssp. *ilicifolia*, *Rhus diversiloba*, *R. laurina*, *R. ovata*, *R. trilobata* var. *malacophylla*, *Ribes malvaceum*, *R. speciosum*, *Salvia apiana*, *S. mellifera*, *S. spathacea*, *Sambucus mexicana*, *Sanicula* sp., *Solanum douglasii*, *S. xantii* var. *intermedium*, *Stephanomeria exigua*, *S. virgata*, *Symphoricarpos mollis*, *Venegasia carpesioides*, *Verbena* sp., *Yucca whipplei* ssp. *intermedia*, and *Zauschneria californica* ssp. *angustifolia*.

Other plants (but LESS ABUNDANT) within the same area: *Anagallis arvensis*, *Arctostaphylos glandulosa* (on Peavine Ridge), *Artemisia dracuncululus*, *Astragalus* sp., *Baccharis pilularis*, *B. viminea*, *Brodiaea* sp. (yellow flower), *Capsella bursa-pastoris*, *Chenopodium*, *Chorizanthe staticooides*, *Cirsium*, *Convolvulus*, *Cryptantha*, *Dendromecon rigida*, *Dudleya lanceolata*, *Emmenanthe penduliflora*, *Eremocarpus setigerus*, *Eriogonum elongatum*, annual *Euphorbia* spp., *Foeniculum vulgare*, *Fritillaria biflora*, annual *Gilia* sp. (?), *Grindelia robusta*, *Haplopappus* sp., *Helianthemum scoparium* (on Peavine Ridge), *Hemizonia ramosissima*, *Hesperocnide tenella*, *Leptodactylon californicum*, perennial *Lupinus* sp. and several annual *Lupinus*, *Malacothamnus fasciculatus* (var.), *Mirabilis laevis*, *Nemophila menziesii*, *Orthocarpus* sp., *Oxalis* sp., *Paeonia californica*, *Penstemon spectabilis*, *Phacelia minor*, *Pholistoma auritum*, *Potentilla* sp., *Rhamnus californica*, *Rhus integrifolia*, *Scrophularia californica*, *Silene laciniata* ssp. *major*, *Sisyrinchium bellum*, *Stachys* sp., *Trichostema lanatum*, and *Urtica holosericea*.

(NOTE: Names of plants follow Munz and Keck, 1959).

The vegetation immediately surrounding the collecting site, and for one or more miles in every direction, was mostly native and undisturbed (except along the roadside, and on a few cleared lots). In the garden, nearby, were some ornamental plants such as *Lantana* (2 spp.), wisteria, and Lombardy poplar, etc., along with many natives such as *Quercus agrifolia*, *Ceanothus spinosus*, *Rhus laurina*, and *Rhamnus crocea*, etc. Undisturbed native formations of Chaparral, Coastal Sage Scrub, and Southern Oak Woodland (after Munz and Keck, 1959), grew right up to the borders of the garden on all sides; the elements of these three plant communities were growing more-or-less intermixed throughout the area. (Figs. 1,2).

In this immediate locality, there was a notable lack of any native coniferous plants, or any members of the Garryaceae. Manzanita (*Arctostaphylos*) was very rare. *Salix* and *Platanus racemosa* were abundant in canyons, but more than one mile away. Several grasses were common, although only one prominent species is listed above. Also, there were a number of different ferns, mosses, and various lower plants (fungi, lichens, etc.).

Climate: This locality is under the influence of a *Mediterranean climate*. In general, it could be said that the rainy season extends from approximately October (or later) through April. Annual rainfall is usually between 10 and 20 inches. The temperature rarely drops below 32°F., and is usually above 40°F. (as a minimum). Winter daytime highs are usually above 50°F., and often well above 60°F. Rains are sporadic, but may last for several days and nights, during heavy storms. Snow almost never falls (i.e.—once or twice in 15 years). The peak of plant growth occurs between March and June, although many annuals start growth with the early rain of October or November. Most of the plants bloom between April and early June. The rainless season extends from April or May to October (or later); no rain whatsoever falls during the period of summer drought, although an occasional early rain may come in September (very unusual). By September or October, prior to the first rain, the vegetation is at its driest. The hottest weather comes in July, August, and September. Summer temperatures are often over 80°F., but rarely above 100°F. (Usual daytime highs are between 70° - 90°F.). There is usually a short hot spell in October (one week or less), and again in January or



Fig. 1. Photograph taken in 1938, from upper Oak Pass Rd. in the Santa Monica Mountains, looking west toward the house at 9601 (where this survey took place). A Chaparral association clothes the slope in the foreground. Large trees of *Quercus agrifolia* dominate around (and below) the house, and in the ravines. The lighter patches in the vegetation represent mostly Coastal Sage Scrub species, with some admixture of Chaparral plants. In the area are several open slopes, covered with grass and mustard (*Brassica nigra*), where *Juglans californica* grows as a dominant tree. The house is at an elevation of about 1100 feet, and is 9 miles inland from the Pacific Ocean. Upper Benedict Canyon Dr. is visible beyond the house.

February. Foggy weather is frequent from April through October; this increases the humidity during the dry season. Fog often comes in from the ocean around 5 P.M. (or later), and may leave by 11 A.M. (or earlier) the next morning. In May and June, overcast or foggy days are particularly frequent, although the afternoons are often sunny.

By late in the dry season, nearly all the woody plants are dormant. However, *Zauschneria californica* and *Haplopappus squarrosus* are among the comparatively few plants that bloom from late Aug. to Oct., prior to the first rains. Earlier in the dry season (*July-Aug.*), the following few species are the dominant plants in bloom: *Cuscuta subinclusa*, *Delphinium cardinale*, *Eriogonum fasciculatum*, *Hemizonia ramosissima*, *Heterotheca grandiflora*, *Photinia arbutifolia*, *Rafinesquia californica*, *Rhus laurina*, and *Sambucus mexicana*.

Smog was never seen in this locality (i.e.—Oak Pass Rd. and vicinity) prior to about 1950.

METHODS OF COLLECTING

Except for the diurnal species, all the moths were collected in *one location*, at the N.E. corner of the house. Two types of lights were used: (1) a 150 or 300-watt Westinghouse clear blue daylight bulb (incandescent) was used until May, 1956; (2) after May, 1956, two 15-watt black lights (ultraviolet tubes—F15T8/BL, without filters) were used exclusively. The lights were hung in front of a white sheet, which was tacked to a wall of the house, on a porch about 8 feet above the ground, facing a dense growth of chaparral mingled with *Quercus agrifolia*. The lights were turned on nearly every night, in all types of weather, and all months of the year were equally sampled throughout the survey. No traps were used.

INTRODUCTION TO THE LIST

The families follow the arrangement in Part I of the *Check List of Lepidoptera of Canada and the United States of America* by J. McDunnough (1938). The genera and species are arranged *alphabetically*, within each family, for ease of locating the species in this list. (The McDunnough numbers are included, however, immediately following the species' names). If a question-mark precedes a specific name, this indicates that there is some doubt as to the correct identity of the species; where there is considerable doubt, no specific name is included. Occasional subspecific names are included. In most cases, no



Fig. 2. A view from below the porch where all collecting took place. Two ultraviolet lights are in position on the wall. This porch overlooked the slope N. E. of the house, which is visible in Fig. 1. In the foreground is *Elymus* (giant rye), with *Heteromeles arbutifolia* (toyon) on the right.

mention is made of color forms. For species illustrated on one of the five plates, a small circle (°) precedes the generic name at the left margin of the page.

Following the number (1), the first item given is the *Flight-period* of the adult; this covers any extreme records. Wherever a hyphen is used between separated months, this indicates that I have records for all intervening months as well; otherwise, the months are separated by semi-colons, where gaps occur in the flight-period. *Months underlined* indicate times when the moth is present in its greatest abundance in the locality being discussed. Example: "July-Oct." indicates that the moth is at its peak of abundance during July, Aug. Sept., and Oct., but "July-Oct." indicates that, although the moth has been recorded for July, Aug., Sept., and Oct., it is at its peak only during July and Oct., but not from July through October. "Early" (preceding a month) indicates the period from the first through the 10th of the month; "mid" indicates the period from the 11th through the 20th; "late" indicates the period from the 21st through the 31st. The next item given is the word "diurnal", in cases where it applies. (Otherwise, the species is nocturnal in its flight, and comes to light). The last item after (1) is the *abundance-rating* which I have given to the species, based on its occurrence in the specific locality where this survey was conducted, between about 1948 and 1958. The relative abundance of the moth is expressed by the letter A, B, or C, as follows:

A = abundant; B+, B, B- = moderate abundance (neither notably common or rare); C = scarce (6 or fewer records during the entire survey), C₁ = only *one* record during the entire survey, "B+" (= approaching "A" and "-" (= approaching "C") are intended to show an inclination either *towards* abundance or scarcity, but the species is still better placed within the "B" category.

Following (2), some known *foodplants* are listed; many of these are from my personal records (primarily in the Santa Monica Mountains). If the foodplants are not my records, the information was obtained from one of the following sources: (a) Mr. Christopher Henne (plant followed by "C.H." in parentheses); (b) the card file of Dr. John A. Comstock (J.C.); (c) Crumb (1956) (S.C.). If the foodplants are followed by "etc.", this indicates that other plants (not listed) are also known to be acceptable. These foodplant-listings are not by any means

complete for every moth, nor are they intended to summarize the literature.

Following the number (3), miscellaneous remarks are indicated, which may refer to the adult or to the early stages (*i.e.*—variability; peculiarities in behavior; short notes on the early stages; anything distinctive and worth noting). For many species, (2) and/or (3) may not be included in this list.

MISCELLANEOUS REMARKS

The abundance-ratings given for each species should be of interest in future years, as the area becomes more and more disturbed by man, and the native vegetation is destroyed. Changes in abundance are bound to occur, and some changes in species-composition are also likely in the future. A noticeable change in the vegetation, which has become very evident during the past decade, is the death of most of the oaks (*Quercus agrifolia*) throughout the area. Coast live oaks were formerly abundant, and dominant in canyons (and on many hillsides), where they are now dying or already dead. The trees were in excellent condition up to approximately 1948. (See the photograph taken in 1938, showing the abundance of healthy oaks that once surrounded the house at 9601 Oak Pass Road). Increasing smog may be one of the factors responsible for the death of the oaks, and it may be having an effect on other vegetation in the area.

The specimens collected during this survey are chiefly in the author's collection, and in the collection of the Los Angeles County Museum. Some are in the possession of W. R. Bauer and J. S. Buckett, Dr. J. G. Franclemont, Dr. Frederick H. Rindge, and Carl W. Kirkwood.

The following list gives the total numbers of species collected per family, during this survey of a single locality:

1. Sphingidae	6	8. Noctuidae	160
2. Saturniidae	2	9. Diptidae	1
3. Amatidae	1	10. Notodontidae	2
4. Nolidae	2	11. Liparidae	1
5. Lithosiidae	1	12. Lasiocampidae	3
6. Arctiidae	6	13. Geometridae	92
7. Agaristidae	1	TOTAL	278

Compared with many other regions of the U.S.A., the Sphingidae, Arctiidae, and Notodontidae are very poorly represented throughout coastal Southern California.

Complete coverage of all the "macro-moths" in the eastern Santa Monica Mountains was not possible, as all collecting was restricted to a single location. Moths normally feeding on willows, or other canyon vegetation, may have been missed entirely, or they may be rated as scarce in this list. (The nearest typical canyon habitats were over one mile away). However, nearly all of the moths in an area are usually encountered when one collects in a single locality, provided that the locality chosen has vegetation widely-representative of the area as a whole, and provided that the locality is consistently well-collected for five (or more) *consecutive* years; by collecting over a period of several consecutive years, those species that fluctuate greatly in numbers will usually be encountered at least once, and sometimes more than once. Moth-collecting should also sample the hours between midnight and 4 A.M., for every month of the year. There are some moths, in nearly every family, that almost never come to lights before midnight, and a few of these species do not reach their "peak" of activity until the period of 2 to 4 in the morning.

As of July 1964, the species listed below have been preserved in the author's collection of preserved early stages of Lepidoptera, which was started in May 1960. They are catalogued under the code-numbers given in parentheses. (This letter-number combination refers to the preserved early stages, as well as to corresponding pinned adults, and to color and behavioral descriptions kept in notebooks). SPHINGIDAE: *Celerio lineata* (Sp. 7), *Smerinthus cerisyi* (Sp. 9), *Sphinx perelegans* (Sp. 12); SATURNIIDAE: *Platysamia euryalus* (St. *), *Telea polyphemus* (St. 2); NOLIDAE: *Celama minna* (Nl. 1); ARCTIIDAE: *Apantesis ornata* (Ar. 25), *A. proxima* (Ar. 5), *Arachnis picta picta* (Ar. 20), *Estigmene acraea* (Ar. 2), *Hemihyalea edwardsi* (Ar. 3), *Maenas vestalis* (Ar. 21); NOCTUIDAE: *Acerra normalis* (N. 41), *Behrensia conchiformis* (N. 43), *Catabena lineolata* (N. 11), *Catocala aholibah* (N. 84), *C. verrilliana* (N. 70), *Cissusa indescreta* (N. 72), *Cucullia* ? *laetifica* (N. 90), *Dargida procincta* (N. 47), *Heliothis phloxiphaga* (N. 9), *H. zea* (N. 4), *Laphygma exigua* (N. 78), *Miodera stigmata* (N. 37), *Orthosia ferrigera* (N. 69), *Pleroma conserta* (N. 39), *Zosteropoda hirtipes* (N. 58), *Zothea tranquilla* (N. 36); DIOPTIDAE: *Phyrganidia californica* (Di. 1); LIPARIDAE: *Hemero-campa* ? *gulosa* (Lp. 6); GEOMETRIDAE: *Chlorochlamys* ? *hesperia* (G.20), *Chlorosea* ? *gracearia* (G. 70), *Cochisea sin-*

uaria (G. 53), *Dichorda illustraria* (G. 22), *Epirrhoe plebeculata* (G. 30), *Eupithecia nevadata* (G. 34), *Sabulodes caberata* (G. 23), *Sicya snoviaria* (G. 18), *Stamnodes ? coenonymphata* (G. 31), *Sterrhia bonifata* (G. 10), *Synchlora liquoraria* (G. 19), *Triphosa californiata* (G. 52), *Zenophleps lignicolorata* (G. 54).

In most cases these preserved immatures are from localities other than the Santa Monica Mountains. For fifteen of the above species, the complete life histories (all stages and all larval instars) are represented, and in nearly all cases the last instar larva is preserved.

All personal foodplant records given in this paper are backed by reared, identified moths, but the larvae were preserved for only a few of the species, unfortunately.

COMMENTS ON COLLECTING

IN THE COASTAL CHAPARRAL OF SOUTHERN CALIFORNIA

Nights of heavy fog and mild temperatures, particularly from late March through June, and during October - November, are the best times for moth collecting in the coastal chaparral areas. During these months, the greatest numbers of species are on the wing. (Mild, foggy nights seem to bring out hosts of moths, at almost any time of the year).

As most of the dominant plants under the influence of a Mediterranean climate have tough, leathery leaves, larvae are rarely present on such plants for more than three or four weeks, during the time when the plants are in new-leaf, or when they are in bloom. The peak season for most larvae on these sclerophyllous plants is between March and June. For example, most of the larvae that feed on *Quercus agrifolia* are present only during a short period in late March or April, when the new leaves are still soft. (A notable exception to this particular case is the larva of *Hemihyalea edwardsi*).

Beating chaparral vegetation from March to late June will produce a great variety of larvae. Among the most productive woody plants in the chaparral association, at this season, are: *Adenostoma fasciculatum*,* *Arctostaphylos* spp.*, *Ceanothus* spp.*, *Cercocarpus betuloides*,* *Eriogonum fasciculatum*, *Heteromeles arbutifolia*, *Lonicera subspicata*, *Penstemon cordifolius*, *Prunus ilicifolia*, *Quercus* spp.*, *Rhamnus crocea*, *Rhus laurina*, *Rhus trilobata*, *Ribes speciosum*, and *Sambucus mexicana*.*

*The starred plants support numerous species of moth larvae in the spring; *Ceanothus*, *Cercocarpus*, and *Quercus* are perhaps the top three plant genera in this locality, as to the numbers of different larvae feeding upon them.

For best results, it is necessary to beat (or search) the plants at night, as well as in the daytime. Some larvae are strictly nocturnal feeders, and cannot be collected by beating in the daytime, when they are hiding on the lower stems, or in litter beneath the plants.

Adenostoma fasciculatum supports the greatest number of larvae when it is in bloom; even at lower elevations this is not until late May or June, when most of the other sclerophyllous plants are slowing down in growth, and their leaves are becoming tough. Other plants in the chaparral association, which continue to grow well into the summer, and do not have sclerophyllous leaves, support various larvae even during the dry summer; the same may be said of some sclerophyllous species which continue to grow a little during the summer, such as *Eriogonum fasciculatum*, *Lonicera subspicata*, and a few others. *Ceanothus spinosus* remains suitable for larval feeding all summer, but its leaves are quite thin even when matured. *Rhus laurina* and *R. trilobata* also appear to remain suitable for larval feeding all summer, and this is particularly true of foliage that is partially in the shade. (See *Paectes declinata*, in the list).

For collectors who desire to collect in the eastern Santa Monica Mountains, under conditions similar to those described in this paper, with the chance of finding these same species on the wing at the same times of the year, there still remains one extensive undisturbed locality within two miles of the 9601 Oak Pass location. It is presently (June, 1964) in the same virgin state as it was in 1938 or earlier. This rich sanctuary of undisturbed native vegetation (Higgins Canyon) is between 2.2 and 3.5 miles north of Beverly Hills, north of Sunset Blvd. on N. Beverly Drive; it is bounded on the west by Summitridge Dr., on the north by Mulholland Dr., and on the east by Franklin Canyon Dr.; Marion Way fire-road crosses the heart of this area, which is locked off by fire-gates. The area is easily accessible by a half mile walk beyond the fire-gate, at the upper end of N. Beverly Drive (2.2 mi. N. of Sunset Blvd.). Franklin Canyon (right turn off N. Beverly Dr., above Sunset) is still relatively undisturbed, and also has a good representation of the plants listed in this paper.

THE ANNOTATED LIST OF SPECIES

I. Family SPHINGIDAE

**CELERIO LINEATA* Fabr. (799) (1) Mar. - Sept.; diurnal and nocturnal; B (2) *Godetia* (=Clarkia), *Zauschneria californica*, etc. (3) The larvae are primarily of the black phase in this locality.

**HEMARIS DIFFINIS THETIS* Bdv. (770c) (1) Mar. - May - Aug.; diurnal only; A (2) *Lonicera subspicata* (3) The larvae, which are soft green, marked with purplish-brown on the underside and prolegs, are well-hidden as they cling to the undersides of stems of the foodplant; these stems are often tinged purplish on the upperside, where the sun strikes them. In feeding, the entire leaf is usually consumed, which further conceals evidence of the larva. The larva is quite inactive most of the time, but when it does crawl, it exhibits a peculiar and very characteristic, hesitant, "forward-inching" type of locomotion; this allows it to move inconspicuously along, without drawing much attention to itself. It is of interest to note that when the moth first emerges from the pupa, and up until the time it makes its first flight, its wings are fully covered with large, loosely-attached, dull black scales. In the instar that it takes off on its very first flight, all these loose scales blow off in a cloud. The adult is a fast flier, active on sunny days only, and is easily alarmed. In the garden, where this survey was made, it came abundantly to ornamental *Lantana*.

PHLEGETHONTIUS SEXTA Joh. (696) (1) July - Aug.; B- (2) *Nicotiana glauca*

PHOLUS ACHEMON Dru. (773) (1) Late Aug.; C₁ (2) *Vitis* (J. C.)

SMERINTHUS CERISYI Kby. (740) (1) May - June; C (2) *Populus*, *Salix* (J. C.)

**SPHINX* ? *PERELEGANS* Hy. Edw. (724) (1) Apr. - May - Aug.; B+ (2) *Prunus ilicifolia*, *Cercocarpus betuloides* (3) The last instar larva is whitish blue-green and has seven oblique white lateral stripes, each of which is anteriorly-edged by reddish-purple or violet. The skin is absolutely smooth (not granular). The head has a pair of prominent oval black spots at its apex; these are sometimes covered by the lavender cervical membrane when the larvae is at rest. The smooth caudal horn is light blue with a very faint lavender tinge at the base. In all instars the horn is minutely two-pointed at the tip. The brown pupa has a short (3/8") external tongue-case. The moth is characterized by its charcoal-black thorax, which is edged with pale gray at the sides.

II. Family SATURNIIDAE

PLATYSAMIA EURYALUS Bdv. (807) (1) Feb. - May; B (2) *Ceanothus spinosus*, *C. megacarpus*, *Rhamnus crocea*, etc.

TELEA POLYPHEMUS Cram. (812) (1) May - June; Aug. - Oct.; C (2) *Quercus agrifolia*, etc.

III. Family AMATIDAE

**TENUCHA BRUNNEA* Stretch (881) (1) June - July; diurnal only; A (2) *Elymus condensatus*, St. Augustine grass, and other coarse grasses (3) The hairy larvae are easily located in clumps of *Elymus* during May. Much of the time, they rest on dead (tan) leaves, which blend well with the predominantly tan and pale gray of the larva. Evidence of feeding is noticeable on nearby green leaves. If touched, the larva will often literally snap into a curled posture, as it drops from the leaf. A distinctive feature of the larva is the rich tan (or golden brown) color of its shiny head. In this locality, it is the only larva (other than *Acronycta* spp.) that might be mistaken for an arctiid. Pupation occurs in an elongate cocoon of soft, web-like silk, into which the larval hairs are incorporated. The pupa is marked with blackish and reddish-brown (streaked pattern on wing cases), and is extremely shiny and smooth. The adult often rests upon the upper surface of a leaf (or in *Elymus* clumps), where it will sit in the sun, slowly waving its antennae. It visits flowers frequently; preferred are *Lantana* (ornamental), *Rhus laurina*, and *Photinia arbutifolia*. The flight is rather "heavy" and direct.

IV. Family NOLIDAE

**CELAMA MINNA* Butl. (891) (1) Jan. - Feb. - Mar. - May; A (2) *Ceanothus spinosus* (preferred), *C. megacarpus*, *Rhamnus crocea* (3) The small, hairy larvae are easily distinguished from lithosiids or arctiids, as they have only 4 pairs of prolegs; there are no prolegs on A₃. The usual dorsal ground color of the larva is rust-brown, with darker brown patches; a few larvae are tan or whitish, marked with brown. They are present on the foodplant in May and June.

**SARBENA MINUSCULA EUCALYPTULA* Dyar (897b) (1) Feb. - Mar.; A (2) Young leaves of *Quercus* (C. H.)

V. Family LITHOSIIDAE

**CISTHENE DORSIMACULA* Dyar (951) (1) June; C (2) Lichens (J. C.)

VI. Family ARCTIIDAE

**APANTESIS ORNATA* Pack. (1039) (1) Late Apr. - early May; female diurnal; B (2) General feeder on low-growing plants (3) Males came to lights only after midnight, and primarily between 2 - 4 A.M. The form in this locality, although somewhat variable in color, is rather large, and the secondaries are usually pure yellow (sometimes reddish), marked with black. The lines on the primaries are bright pink; this fades in dried specimens.

APANTESIS PROXIMA Guer. (1045) (1) Late Mar. - June - Oct. - Nov.; A (2) General feeder on low growing plants; two specific records are *Nicotiana glauca* and *Brassica geniculata* (3) Unlike many other *Apantesis* larvae, the larvae of *A. proxima* are more inclined to hide by day, and are less prone to sunning themselves. Typical of *Apantesis* larvae, they will run with extreme rapidity if prodded from behind. The cocoon is slight, and no larval hairs are used in its construction; it is formed under leaf-litter or other debris, on the ground. The pupa is typical of many other *Apantesis* pupae in that it is covered with a glaucous bloom, and the discarded larval skin remains attached to the rear end; it is capable of slow abdominal movement. Both sexes of the adult come to light.

ARACHNIS PICTA Pack. (1082) (1) Late Sept. - Oct. - mid Nov.; A (2) General feeder on numerous herbaceous plants; some specific records are *Lotus scoparius*, *Brassica nigra*, *B. geniculata*, *Malva parviflora*, etc. (3) The young larvae feed and grow all winter and early spring, reaching last instar in Apr. or May. By June or early July, all feeding is finished and aestivation begins; this lasts until sometime in September. A cocoon of colorless, sticky, web-like silk is spun; no larval hairs are used in its construction. The dark pupa is incapable of visible abdominal movement. Adults appear soon after pupation (in 2 - 3 weeks). A melanic female was collected on October 9, 1956.

ESTIGMENE ACRAEA Dru. (1070) (1) June - Aug. - Sept.; C₁ (2) General feeder on numerous plants (3) A smokey phase occurs in the city, near the locality of this survey.

HEMIHYALEA EDWARDSII Pack. (974) (1) Late Sept. - Oct. - mid Nov.; A (2) *Quercus agrifolia*, and other oaks in other areas (3) A notable feature of the mature larva is its immense head, which is deep brown and glossy. The massive mandibles easily chew the toughest oak leaves. The larvae grow from November until the following August. They hide in crevices by day, and crawl up the trunk to feed after dark. Pupation takes place in Aug. - Sept., in a soft silk cocoon bristling with the larval hairs; this is usually in a crevice in the oak trunk. The bright, rich reddish-brown pupa is notably smooth and shiny, and the wing cases are (at first) translucent. It is not capable of abdominal movement.

MAENAS VESTALIS Pack. (1068) (1) Late Feb. - Apr. - mid May; A (2) General feeder on numerous plants; some specific records are wisteria, jasmine, *Lotus scoparius*, *Brassica geniculata*, *Marah macrocarpus*, *Nicotiana glauca*, *Juglans californica*, *Rhamnus crocea*, etc. (A preference is often shown for *Marah*, but it always dries up long before the larvae have reached last instar). (3) Larval growth is completed by Aug. or Sept., at which time an oval silken cocoon (filled with the larval hairs) is spun. The blackish pupa overwinters. It is not capable of abdominal movement.

VII. Family AGARISTIDAE

ALYPIA RIDINGSI Grt. (1117) (1) Mar. - mid Apr.; diurnal only; B - (2) *Oenothera*, *Codetia* (=Clarkia) (J. C.) (3) The adults usually fly along ridge-tops during the short flight period. They are rather hard to capture, and rarely alight. In this locality, they seem to prefer fire-breaks or open ridge-tops (Peavine Ridge) surrounded by chamise (*Adenostoma fasciculatum*), and other chaparral shrubs.

VIII. Family NOCTUIDAE

ABAGROTIS BARNESI Benj. (1594) (1) June - Oct.; B+ (2) *Salvia apiana*, in May-June (C. H.)

ABAGROTIS DENTICULATA McD. (1) June - Oct.; A

ABAGROTIS MIRABILIS Grt. (1586) (1) Late Sept.; C₁

ABAGROTIS sp. (new) (1) Mid May - Aug.; B -

ABAGROTIS TRIGONA Sm. (1589) (1) June - Oct.; B

***ACERRA NORMALIS** Grt. (1923) (1) Jan. - Feb. - Mar. - early Apr.; A (2) *Sambucus mexicana*, *Ribes*; *Salix* (S. C.), etc.

***ACONTIA CRETATA** G. and R. (3214) (1) June - July; B-

ACRONYCTA IMPLETA Wlk. (1201) (1) Early Aug.; C₁ (2) *Ainus*, *Salix*, *Quercus*, etc. (S. C.)

ACRONYCTA MARMORATA Sm. (1200) (1) Late Mar. - Apr.; C (2) *Quercus* (S. C.)

(3) Only melanic specimens were encountered.

***ACRONYCTA OTHELLO** Sm. (1213) (1) Mar. - July - Aug.; A (2) *Rhus laurina*, *Photinia arbutifolia*; *Salix* (J. C.)

ADELPHAGROTIS INDETERMINATA INNOTABILIS Grt. (1567a) (1) Late Aug. - mid Sept.; B (2) *Salix*, *Rubus*, etc. (S. C.)

***ADMETOVIS SIMILARIS** Barnes (1659) (1) Late Mar. - Apr. - May - early Aug.; B (2) *Sambucus mexicana*

AGROTIS YPSILON Rot. (1435) (1) Mar. - Oct. - Nov.; A (2) General feeder on many low-growing plants

AMATHES C-NIGRUM Linn. (1511) (1) Feb. - July - Oct. - Dec.; B- (2) General feeder

ANNAPHILA ? PSEUDOASTROLOGA Sala (1) Feb. - Mar.; diurnal only; B- (2) *Phacelia minor* (record of Frank Sala) (3) The foodplant of *Annaphila astrologa* B. and McD. (*Emmenanthe*) also grows in this locality.

ANOMOGYNA INFIMATIS Grt. (1563 and 1563a) (1) Late Sept. - Oct. - Nov. - early Dec.; A

ASEPTIS ? BINOTATA Wlk. (2400) (1) Apr. - May - June - July; A (2) *Ribes malvacum*, etc.

ASEPTIS sp. (near *binotata* Wlk. ?) (1) Late Mar. - Apr. - May; B (3) This moth perhaps belongs with the preceding species.

- ASEPTIS FUMOSA Grt. (2394) (1) Early June; C₁
 ASEPTIS PERFUMOSA Hamp. (2396) (1) Mar. - Apr. - May; A
 ASEPTIS SUSQUESA Sm. (2407) (1) Apr. - May; C (2) Artemisia californica (J. C.)
 AUTOGRAPHA BILOBA Steph. (3279) (1) Feb. - Oct.; B (2) Collinsia, and other
 herbaceous plants (3) Adults are occasionally active in the daytime.
 AUTOGRAPHA CALIFORNICA Speyer (3288) (1) Jan. - Feb. - Oct.; diurnal and
 nocturnal; A (2) Malacothrix, and numerous other herbaceous plants; abundant on Salvia leucophylla,
 after a fire (C. H.), in Latigo Canyon (May, 1957).
 AUTOGRAPHA EGENA Gn. (3267) (1) Mid Oct.; C₁ (2) Lima bean leaves (S. C.)
 AUTOGRAPHA OLIVACEA Skin. (3294) (1) July; Nov.; C (2) Senecio grandiflora-
 ornamental plant from Mexico (C. H.); Mimulus cardinalis (C. H.)
 •BEHRENSIA CONCHIFORMIS Grt. (2264) (1) Dec. - Mar. - early Apr.; B+ (2)
Lonicera subspicata; Symphoricarpos, in Oregon (3) The slender gray-brown larva (with two
 small caudal points on A₈) can be located in April and May, by signs of its feeding on the vigorous
 new shoots of Lonicera clumps. Over a period of several nights, one or more larvae will continue
 to eat leaves from a single new shoot, until it is nearly stripped of its widely-spaced leaves. The
 larvae feed only after dark, and rest parallel to woody stems, deep within the tangle of branches,
 during the day. In general appearance, the larva is somewhat reminiscent of a small Catocala larva.
 Pupation occurs within a tough cocoon, into which chewed-up particles of wood-fiber (or other
 dry material) are incorporated. (See also Pleroma cinerea, which has the same larval feeding
 habits, and is present on Lonicera at the same time of year).
 •BENJAMINIOLA COLORADO Sm. (2435) (1) Oct. - Nov. - early Dec.; B
 BULIA ? SIMILARIS Rich. (3557) (1) June - Oct.; B- (2) Prosopis (S. C.)--This plant
 does not occur in the area.
 CAENURGIA TOTATARIA Wlk. (3433) (1) June - July - mid Aug.; Oct. - Nov.; B-
 CATABENA ESULA Druce (2741) (1) Aug. - Oct. - Nov.; B- (2) Ornamental Lantana
 (orange or yellow-flowered shrubby sp.)
 CATABENA LINEOLATA Wlk. (2737) (1) Feb. - Apr. - May - Aug.; B+ (2) Ver-
berna sp. (3) The deep green, slender larvae are often common on Verbena. They rest flatly-ap-
 pressed on the tops of leaves. If disturbed, they may drop and wriggle violently.
 CATABENA SAGITTATA B. and McD. (2738) (1) Oct. - Nov.; B-
 CATOCALA AHOLIBAH Stkr. (3341) (1) Mid July; C₁ (2) Quercus spp.
 CATOCALA IRENE Behr (3348) (1) Mid June - Aug.; C (2) Salix (S. C.) (3) Easily
 alarmed in the daytime.
 CATOCALA PIATRIX DIONYZA Hy. Edw. (3312a) (1) July - Sept.; F- (2) Juglans
 (S. C.)
 CATOCALA VERRILLIANA Grt. (3390) (1) July - Aug.; B (2) Quercus spp.
 CHORIZAGROTIS AUXILIARIS Grt. (1387) (1) Apr. - early May; B-
 •CISSUSA INDESCRETA Hy. Edw. (3542) (1) Mid Feb. - Mar. - early Apr.; (2)
Quercus.
 •CONOCHARES ACUTA Sm. (3162) (1) Late Mar. - Apr. - May - July - Aug.; Nov.; A
 (2) Franseria (C. H.)
 •CONOCHARES ELEGANTULA Harv. (3164) (1) Late May - Aug.; B-
 COPICUCULLIA EULEPIS Grt. (2003) (1) May - July - Sept.; B+ (2) Stephano-
meria (C. H.)
 •COSMIA CALAMI Harv. (2687) (1) Late May - June - July; A (2) Quercus agrifolia
 (3) Larvae are easily obtained by beating Quercus agrifolia when it is in new leaf, during March
 or April. A notable feature of the yellowish-green larva is that it tapers considerably at the pos-
 terior end. The adults are highly variable.
 •CUCULLIA DENTILINEA Sm. (2031) (1) Late Mar. - Apr. - May - mid June; B
 CUCULLIA ? LAETIFICA Lint. (2035) (1) Late Mar. - May - July - Sept.; B+ (2)
Corethrogyne filaginifolia (var. ?), and Haplopappus squarrosus (3) The colorful black, yellow,
 and white larvae (rarely with orange markings) are present in May and June. They feed in plain
 sight on the plant, and never hide. It is of interest to note that, in some years, the larvae are
 mostly on Corethrogyne; in other years, mostly on H. squarrosus. (In 1964, they were almost
 exclusively on Corethrogyne). This same pattern of switching foodplants is also seen in Melitaea
gabbii Behr, a common butterfly in the area, and the same two plants are involved.
 DARGIDA PROCINCTA Grt. (1952) (1) Apr. - June; Oct. - early Nov.; B- (2) Grass-
 es and various herbs, including clovers.
 EPIZEUXIS LUBRICALIS OCCIDENTALIS Sm. (3746a) (1) June; C (2) Larvae
 always found associated with rotten wood (S. C.); perhaps to be found in woodrat (Neotoma) nests.
 EREBUS ODORA L. (3525) (1) Early Aug.; C₁ (2) Ornamental Acacia trees, Cassia,
 and other woody legumes (J. C.)
 •EUBLEMMA MINIMA Gn. (3061) (1) Late Mar. - July - Aug. - mid Sept.; A (2)
 Floral heads of Gnaphalium (C. H.)
 •EUCLIDIA ARDITA Franc. (1) Mar. - Apr. - early May; diurnal only; B+ (4) Lotus
scoparius, and probably certain other herbaceous legumes (3) Larvae reared on Lotus scoparius
 were predominantly yellow-tan in ground color; they were quite slender. At first glance, the di-
 urnal adult (when on the wing) is sometimes mistaken for a skipper of the genus Erynnis (dusky-
 wings), but the skippers have a more erratic, darting flight.
 EUXOA ATOMARIS Sm. (1344) (1) Sept. - Oct. - Nov.; A
 EUXOA BREVIPENNIS Sm. (1233) (1) Sept. - Oct.; C
 EUXOA CICATRICOSA G. and R. (1234) (1) Late Oct.; C₁
 EUXOA FENISECA Harv. (1269) (1) Sept. - Oct. - Nov.; B+
 •EUXOA MEDIALLIS Sm. (1307) (1) Oct. - Nov. - Dec.; A (3) This moth occurs in
 several color forms in this locality, ranging from gray to yellow-tan to reddish.

- EUXOA MERCEDES B. and McD. (1268) (1) Mid Oct. - Nov.; B- (3) The moth is present in a yellow-tan form, and a reddish form.
- EUXOA MESSORIA Harr. (1310) (1) Sept. - Oct. - Nov.; B
- EUXOA OLIVIA Morr. (1232) (1) Sept. - Oct. - Nov.; A (3) In this locality, the moth is quite variable in color, and somewhat variable in maculation.
- EUXOA SEPTENTRIONALIS Wlk. (1311) (1) July - Oct.; B
- EUXOA sp. (near *E. terrena* Sm., in appearance) (1) May - Oct.; B
- EUXOA ? SPONSA Sm. (1284) (1) May - June - July; A (3) The moth usually has a black collar, but this is variable.
- EUXOA SPONSA MONTECLARA Sm. (1284b) (1) May - June - July; A (3) This moth and the preceding may belong together.
- NOTE: There may be some species of *Euxoa* that were missed, as these moths were not as well collected as they should have been; the data for this genus is spotty.
- FELTIA GENICULATA G. and R. (1451) (1) Mid June - July - Nov.; A
- FERALIA FEBRUALIS Grt. (2187) (1) Mid Dec. - Mar. - early Apr.; A (2) *Sambucus*, *Cercocarpus*, *Quercus*, *Ceanothus spinosus*
- FORSEBIA PERLAETA Hy. Edw. (3558) (1) Mid Sept.; C₁ (2) *Cercidium* (J. C.) --- This plant does not grow in the area.
- GALGULA PARTITA Gn. (2666) (1) Oct. - Nov.; C₁ (2) *Oxalis* (J. C.)
- HELIOTHIS PARADOXA Grt. (2929) (1) Early Oct.; C₁ (2) Floral heads of *Heterotheca grandiflora* (?) (One record; reared specimen lost).
- HELIOTHIS PHLOXIPHAGA G. and R. (2931) (1) Late Mar. - Oct.; diurnal and nocturnal; A (2) Flowers and buds of various plants, including *Pelargonium* (ornamental), and *Gilia*, etc.
- HELIOTHIS ZEA Boddie (2932) (1) July - Oct. - mid Nov.; B+ (2) Corn, tomato, etc. (S. C.)
- HELIOTHIS VIRESCENS Fabr. (2933) (1) May - Aug. - Dec.; B (2) *Ribes malvaecium*
- HEMEROPLANIS FINITIMA Sm. (3671) (1) Apr. - May - Oct.; B+ (3) The adult is quite variable.
- HEMIEUXOA RUDENS Harv. (1491) (1) Apr. - Oct. - Nov.; B+ (2) A general feeder
- HOMOGLAEA CARBONARIA Harv. (2322) (1) Mid Dec.; C₁ (3) The adult hibernates.
- HOMONOCNEMIS FORTIS Grt. (2146) (1) Mar. - Apr.; Nov.; C (2) *Fraxinus* (C. H.)
- HOMONOCNEMIS PICINA Grt. (1) Oct. - Nov. - Jan.; C (2) *Penstemon* (C. H.) (3) The adult is often found inside buildings.
- HOMORTHODES COMMUNIS Dyar (1891) (1) Aug. - Sept. - Oct.; B
- HOMORTHODES HANHAMI SEMICARNEA B. and McD. (1885a) (1) Feb.; May - June; A
- INCITA AURANTIACA Hy. Edw. (2921) (1) Apr. - mid May; diurnal only; C (2) *Gilia* - buds and flowers (C. H.)
- LACINIPOLIA CUNEATA GERTANA Sm. (1715) (1) Late Mar. - May - early June; A (2) A general feeder (S. C.)
- LACINIPOLIA ILLAUDABILIS Grt. (1751) (1) June - July - Aug. - Nov.; A (2) *Eriogonum fasciculatum*
- LACINIPOLIA FATALIS Grt. (1758) (1) Apr. - May - June; A (2) Various rosaceous plants; probably other plants (S. C.)
- LACINIPOLIA PENSILIS Grt. (1736) (1) Sept. - Oct. - Nov.; A (2) A general feeder (S. C.)
- LACINIPOLIA QUADRILINEATA Grt. (1757) (1) May; Sept. - Oct.; B+ (2) A general feeder; a specific record is *Adenostoma fasciculatum*
- LACINIPOLIA STRICTA TENSICA Sm. (1739b) (1) June; late Sept. - Oct.; C (2) A general feeder; *Eriogonum*, *Lactuca*, etc. (S. C.)
- LAPHYGMA EXIGUA Hbn. (= *Spodoptera*) (2683) (1) July - Sept. - Oct. - Nov.; A (2) A general feeder on low-growing plants.
- LAPHYGMA FRUGIPERDA A. and S. (2682) (1) Early Oct.; C₁
- LEUCANIA sp. (near *farcta* Grt., in general appearance) (1) Mar. - May - Aug. - Dec.; A
- LITHOPHANE CONTENTA Grt. (2233) (1) Oct. - Nov. - Dec.; B- (2) *Quercus* (S. C.) (3) The adult hibernates.
- LITOPROSOPUS COACHELLA Hill (3599) (1) May - June; Aug. - Sept.; C (2) *Washingtonia filifera* (fan-palm), grown as an ornamental in Beverly Hills.
- LYCANADES PURPUREA Grt. (2310) (1) Nov. - Jan.; A (2) A general feeder (3) The adult is highly variable in color and pattern.
- MAMMIFRONTIA RILEYI Barnes (2444) (1) June - Aug.; B+ (2) In stems of *Elymus condensatus*; pupates in old or dead stalks (J. C.)
- MELIPOTIS INDOMITA Wlk. (3549) (1) May - Aug. - Oct.; B+ (2) *Prosopis* (S. C.) --- This plant doesn't occur in the locality. (3) The adult is easily alarmed in the daytime.
- MICRATHETIS TRIPLEX Wlk. (2667) (1) May - June - Oct. - Dec.; B
- MIODERA STIGMATA Sm. (1797) (1) Mid Nov. - Dec. - Jan. - Feb.; A (2) *Artemisia californica* (3) The larvae are easily collected by beating, in March or April. Early instars are soft green, with white parallel lines; last instar larvae are nearly always light brown, with the same lines. They curl up tightly when handled.

- MOURALIA TINCTOIDES Gn. (3310) (1) Late Sept.; C₁ (2) Tradescantia fluminensis (ornamental Wandering Jew) (J. C.)
- MYCTEROPHORA GEOMETRIFORMIS Hill (3714) (1) Aug. - early Sept.; B-
•NEPERIGEA ALBIMACULA B. and McD. (2641) (1) Late June - July - early Aug.;
- B+
- OLIGIA DIVESTA Grt. (2557) (1) June - July; B (2) Grasses (S. C.)
- OLIGIA MARINA Grt. (2425) (1) Apr. - May - June - early July; A (2) Nemophila (C. H.), Pholistoma auritum (C. H.), Lithophragma (C. H.), Montia (C. H.)
- OLIGIA TUSA Grt. (2414) (1) Late June - July - early Aug.; B-
•ONCOCNEMIS PERSCRIPTA Gn. (2063) (1) Feb. - Mar. - mid Apr.; C (2) Antirrhinum, Linum, etc. (J. C.)
- ONCOCNEMIS RAGANI Barnes (2124) (1) Late Mar. - Apr. - May - July - early Oct.; A
- (2) Lonicera subspicata (3) The moth is probably triple-brooded in this locality.
- ONCOCNEMIS SINGULARIS B. and McD. (2102) (1) May - June - July; B+
- ORTHODES ALFKENI Grt. (1851) (1) July - Aug. - Sept. - Nov.; A
- ORTHODES PERBRUNNEA Grt. (1887) (1) Sept. - Oct.; B-
- ORTHODES RUFULA Grt. (1849) (1) Apr. - May; Sept. - Oct.; B+
- ORTHODES VARIABILIS B. and McD. (1853) (1) Sept. - Oct.; B
- ORTHOSIA ARTHROLITA Harv. (1939), (1) Nov. - Dec.; B+
- ORTHOSIA ERYTHROLITA Grt. (1924) (1) Late Nov. - Dec. - Feb. - May; A (3)
- The moth is exceedingly variable in color and pattern, on the forewings.
- ORTHOSIA FERRIGERA Sm. (1929) (1) Mar.; C (2) Quercus
- ORTHOSIA HIBISCI QUINQUEFASCIATA Sm. (1943c) (1) Feb. - early Apr.; B-
- (2) General feeder on various trees and shrubs.
- ORTHOSIA MACONA Sm. (1931) (1) Jan. - Feb. - early Apr.; A
- ORTHOSIA PACIFICA Harv. (1942) (1) Jan. - Feb. - early Apr.; A (2) Quercus agrifolia; Arctostaphylos glauca (C. H.)
- ORTHOSIA PRAESES Grt. (1927) (1) Late Nov. - Dec. - Jan. - early Apr.; A (2) Sambucus, Ribes speciosum, Photinia arbutifolia, etc. (3) The adult is highly variable in color and pattern.
- ORTHOSIA TRANSPARENS Grt. (1926) (1) Apr. - May; C
- PACTES DECLINATA Grt. (3229) (1) May; July - Oct.; B (2) Rhus laurina (3)
- The larva tapers noticeably at the posterior end. It turns pinkish prior to pupation. In feeding, it makes a characteristic hole at the leaf edge, in that it often leaves a thin shred of the leaf margin still clinging at one side of the hole or the other. Smaller Rhus shrubs, growing in semi-shade, are preferred.
- PERIDROMA MARGARITOSA Haw. (1496) (1) Mar. - Nov.; A (2) General feeder on low plants.
- PERIGONICA TERTIA Dyar (1945) (1) Late Feb. - Mar.; B- (3) The moth is quite variable in color and maculation.
- PLATYPERIGEA sp. (1) Late May; Aug. - Sept. - Oct.; B+
- PLATYSENTA ALBOLABES Grt. (2619) (1) Late Mar. - Apr. - July - Aug.; B
- PLEROMA CINEREA Sm. (2029) (1) Late Oct. - Nov. - Dec. - Feb.; A (2) Lonicera subspicata; Symphoricarpos (S. C.) (3) References to behavior and feeding habits of the larvae of Behrensia conchiformis apply to this species as well. Although brown in color, the P. cinerea larva lacks the "caudal points" of Behrensia, and differs in details of maculation and morphology. It is also a "heavier" larva. (When collecting at night on Lonicera, chances are greater for finding P. cinerea larvae, as they are more abundant than Behrensia.)
- PLEROMA CONSERVA Grt. (2025) (1) Late Jan. - Feb. - mid Mar.; C (2) Symphoricarpos mollis; Lonicera? (3) A confined female laid many eggs on a sprig of Symphoricarpos, in a gallon jar. The larvae will die prior to pupation, if provided only with soil; they require dry, fibrous wood or paper, shredded bark, upon which they make tough cocoons.
- POLIA MONTARA Sm. (=nipana Sm.?) (1706) (1) Mid June - July - early Aug.; B
- PRODENIA ORNITHOGALLI Gn. (2678) (1) May - Oct.; B- (2) General feeder (S. C.)
- PRODENIA PRAEFICA Grt. (2679) (1) Feb. - July - Aug. - Dec.; B (2) General feeder (S. C.)
- PROTOPERIGEA POSTICATA Harv. (2673) (1) Sept. - Oct. - Nov.; A
- (3) There may be two moths involved here; if not, it is rather variable in size and maculation.
- PSEUDALETIA UNIPUNCTA Haw. (1994) (1) Mar. - Nov.; A (2) Elymus condensatus, and other grasses, etc.
- PSEUDOBRYOMIMA FALLAX Hamp. (2174) (1) Feb. - Mar. - Apr. - May; Oct. - Nov. - Dec.; B- (3) The moth is quite variable in ground color (yellow-tan to reddish).
- PSEUDOGLEA OLIVATA Harv. (1574) (1) Mid Sept. - Oct. - early Dec.; A (2) General feeder on woody plants; Quercus, Populus, Symphoricarpos, etc. (S. C.) (3) The forewings are highly variable in ground-color (from brick-red to brown to very pale tan to gray).
- PSEUDORTHOSIA VARIABILIS Grt. (1403) (1) Late Sept. - Oct. - mid Nov.; A (2) Eriogonum fasciculatum (C. H.), and other plants (3) The moth is highly variable as to intensity of maculation on the primaries.
- RANCORA COMSTOCKI McD. (2012) (1) Early Feb.; C₁ (2) Malacothrix (C. H.)
- RANCORA SERRATICORNIS Lint. (2011) (1) Jan. - Feb. - Mar.; B-
- RHYNCHAGROTIS EXERTISTIGMA Morr. (1605) (1) Apr. - May - Oct.; A (3)
- The moth is highly variable in color and maculation.
- SCHINIA BUTA Sm. (2971) (1) July - Aug.; C (2) Brickellia californica (C. H.)
- SCOTOGRAMMA DEFESSA Grt. (1624) (1) July; C
- SCOTOGRAMMA TRIFOLII Rott. (1633) (1) Apr. - Sept.; B (2) General feeder (S. C.)

- SEPTIS ALBINA Grt. (2350) (1) Late Apr. - May; B-
 • SEPTIS CINEFACTA Grt. (2359) (1) Mar. - Apr.; B+
 • SEPTIS CUCULLIFORMIS Grt. (2327) (1) Late Apr. - May; B- (2) Elymus condensatus, and other grasses (S. C.)
 • SPÆLOTIS HAVILAE Grt. (1473) (1) May - early June; B-
 • STRETCHIA INFERIOR Sm. (1919) (1) Late Dec. - Feb. - Mar.; B+ (2) Ribes speciosum (3) Highly variable in maculation and coloring.
 • SYNEODOIDA DIVERGENS form SOCIA Behr. (3573) (1) Mar. - July - Aug. - Oct. - Nov.; A (2) Sambucus (C. H.) (3) See remarks under S. ochracea.
 • SYNEODOIDA EDWARDSI Behr. (3571) (1) Apr. - May - July - Aug.; A (2) Rhus trilobata (C. H.) (3) See remarks under S. ochracea.
 • SYNEODOIDA FUMOSA BRUNNEIFASCIATA B. and McD. (3568a) (1) Mar. - July - Oct.; B+
 • SYNEODOIDA OCHRACEA Behr. (3572) (1) Mar. - May - July - Oct.; A (3)
 These moths are often inclined to sit on the warm, dusty ground of dirt roads or trails, especially during the afternoon in hot weather. When approached, the moth flies up, only to land again a short distance ahead. The colorful secondaries flash orange as it flies away. (These remarks also apply to some other Synedoida spp., but S. ochracea is the one most often seen by day in this locality. All of them come readily to light as well).
 • SYNEODOIDA PALLESCENS G. and R. (3567) (1) Mid Sept. - Oct.; C
 • SYNEODOIDA TEJONICA Behr. (3582) (1) Oct.; C
 • TARACHIDIA CANDEFACATA Hbn. (3176) (1) July - Aug.; B-
 • TETANOLITA PALLIGERA Sm. (3779) (1) June - July; C (2) Dead leaves (S. C.)
 • TRICHOOLEA ANTICA Sm. (1649) (1) Mid Mar. - May; Aug. - Sept.; B
 • TRICHOLOTA FISTULA Harv. (1824) (1) Late Sept. - Oct. - early Dec.; A
 • TRICHOPLUSIA NI BRASSICAE Riley (3269) (1) Apr. - Dec.; B+ (2) General feeder on numerous herbs: Brassica, Solanum, etc.
 • ULOLONCHE DILECTA Hy. Edw. (1836) (1) Sept. - Oct. - mid Nov.; B+
 • XYLOMYGES CRUCIALIS Harv. (1909) (1) Feb. - Mar. - mid Apr.; B+ (2) Quercus agrifolia (3) In collections, this species is sometimes confused with X. simplex Wlk.
 • XYLOMYGES CURIALIS Grt. (1912) (1) Jan. - Feb. - Mar.; A (2) Amorpha californica (C. H.), and many other plants (3) Because of a similarity in spelling, this species is sometimes confused with X. crucialis Harv.
 • XYLOMYGES HIEMALIS Grt. (1906) (1) Late Nov. - Dec. - mid Mar.; A
 • XYLOMYGES PERLUBENS Grt. (1916) (1) Jan. - Feb. - Mar. - mid Apr.; A (2) Ribes, and other plants.
 • XYLOMYGES RUBRICA Grt. (1915) (1) Feb. - Apr.; B- (3) Adults are of a very drab color-phase in this locality.
 • ZALE LUNATA Dru. (3474) (1) Apr. - July - Aug.; B (2) Salix (S. C.), Quercus, Wisteria, Pyracantha, etc. (3) The adult is quite variable.
 • ZALE TERMINA Grt. (3497) (1) Early Apr.; C₁
 • ZOSTEROPODA HIRTIPIES Grt. (1955) (1) Mid Feb. - July - Aug. - Sept.; B+ (2) Primarily grasses and herbs; also some woody plants (S. C.)
 • ZOTHECA TRANQUILLA Grt. (2686) (1) June - early July; B (2) Sambucus mexicana (3) Only the brown phase of the adult has been collected here. The very colorful yellow and black larvae make tightly-closed leaf-nests on Sambucus (Mar. - Apr.). The nest usually consists of one leaflet folded down the middle, and closed with whitish silk. The larva rests in a tightly-curved position, within the nest. If handled, it will usually "spit", and curl up. If larvae are present at all, they are usually abundant on a single plant.

IX. Family DIOPTIDAE

- PHYRGANIDIA CALIFORNICA Pack. (3821) (1) Apr. - May - July; Nov.; A (2) Quercus agrifolia (3) Adults are most active in the afternoon and early evening, when the males swarm about the oaks, with a weak, dancing flight. They also come to lights after dark. The population fluctuates from year to year. In years of heavy infestation, the larvae are so abundant on oaks that their falling frass sounds like light rain. The pupa is unique among moths in this locality, as it is attached by its cremaster, and hangs head downward. Most of the pupae are on the trunks and branches of oaks.

X. Family NOTODONTIDAE

- CERURA CINEREA Wlk. (3935) (1) July; C (2) Populus
 • SCHIZURA ? UNICORNIS A. and S. (3924) (1) Apr. - May - July; Sept.; B+

XI. Family LIPARIDAE

- HEMEROCAMPA ? GULOSA Hy. Edw. (1) May - June - July - early Aug.; A (2) General feeder on numerous woody plants; five examples are Quercus, Ceanothus, Photinia arbutifolia, Wisteria, and Eriogonum fasciculatum (3) The female is wingless, and remains on her cocoon until the eggs are laid. The males are diurnal (primarily afternoon), and nocturnal.

XII. Family LASIOCAMPIDAE

- EPICNAPTERA AMERICANA CARPINIFOLIA Bdv. (3999a) (1) Jan. - Feb. - Mar. - May - June; B+ (2) Populus, Salix, Alnus, etc.
 • GLOVERIA GARGAMELLE MEDUSA Stkr. (3971a) (1) Late June - July - Aug. - early Sept.; male diurnal only; B+ (2) Eriogonum fasciculatum and Quercus agrifolia; Rhus laurina (record of Oakley Shields, in San Diego County)(3) The fast-flying diurnal male is rarely seen, but

if a freshly-emerged female is placed in a cage (outdoors), males will arrive quickly; they are most active from 10:00 A. M. to 3:00 P. M. The females fly primarily after dark, although one is occasionally seen on the wing late in the afternoon, before sunset. The female is the commonest large moth at lights in this locality, during mid-summer. Sexual dimorphism is notable in the adults, the male being much smaller than the female and of a completely different color (rich rust-brown). The larvae are somewhat gregarious when small, but eventually become solitary. They grow slowly from September or October until the following May or June. They feed for only a few minutes each night, and spend all the rest of the time hiding on the lower, woody stems of the food plant.

*TOLYPE ? LOWRIE B. and McD. (3981) (1) July - mid Aug.; A (2) Ceanothus megacarpus (C. spinosus not accepted) (3) The egg stage lasts from Aug. until the following spring, when the larvae hatch and rapidly complete growth by June. Adults come to light more abundantly after midnight.

XIII. Family GEOMETRIDAE

*AETHALOIDA PACKARDARIA Hlst. (4947) (1) Mar. - May - Aug. - Nov. - early Dec.; B+ (2) Ceanothus, Adenostoma, etc. (J. C.)

ANACAMPTODES FRAGILARIA Grossb. (4914) (1) Mar. - May - June - Nov.; 1+ (2) Nicotiana glauca, and other trees and shrubs.

ANACAMPTODES ? PROFANATA B. and McD. (4927) (1) Mar. - June - July; A (2) Cercocarpus betuloides.

ANIMOMYIA INCRESCENS Dyar (4984) (1) Late May; C₁ (2) A. smithi Pears. has been reared on Franseria dumosa (C. H.)

*APICIA FALCATA Pack. (5175) (1) May - June - early July; Sept. - Oct.; B+ (3) The moth is somewhat variable in color and maculation.

*BAPTA ELSINORA Hlst. (4607) (1) Mar. - May; B+ CAMPTOGRAMMA NEOMEXICANA Hlst. (=Archiloe) (4567) (1) Jan. - June - Oct. - Dec.; B (2) Mirabilis (C. H.)

CHLOROCHLAMYS HESPERIA Sperry (1) Late Apr. - May - Oct.; B (2) Flowers of Eriogonum fasciculatum (3) The larva is long and slender, without any lateral lobes or points such as are present on the larvae of Chlorosea, Dichorda, Nemoria, and Synchlora, etc. The head is cleft at the top. It does not cover itself with bits of floral parts or other debris. The adults sometime s emerge pinkish-brown instead of the usual dull green.

CHLORSEA GRACEARIA Sperry (1) May - June; B- (2) Blossoms of Adenostoma fasciculatum (C. H.); C. banksaria Sperry on Ceanothus (Rindge, 1949); leaves of Cercocarpus betuloides (3) The larvae do not decorate themselves with bits of plant debris.

*COCHISEA SINUARIA B. and McD. (4970) (1) Late Oct. - Nov. - early Dec.; B (2) Rhus laurina, Cercocarpus betuloides, Arctostaphylos, etc. (3) The rather soft-shelled eggs are laid tightly side by side in one or more large, flat masses, in a crevice. (The female has a long ovipositor). The mature larvae are very large and "stick-like", ranging in color from gray-brown to pinkish brown, to olive green marked with brownish. The large, heavy pupae are sometimes found in the soil, under suitable foodplants.

CONIODES PLUMOGERARIA Hlst. (4955) (1) Jan. - Feb. - Mar.; B+ (2) Juglans, Quercus (J. C.) (3) The female is wingless, but occasionally crawls to light.

*COSYMBIA DATARIA PIAZZARIA Wgt. (4208) (1) Mar.; June - July - Aug.; Nov. - early Dec.; B+ (2) Hemizonia flowers; on the yellow flowers of this foodplant, the larvae were deep yellow all over.

COSYMBIA SERRULATA Pack. (4212) (1) June - Aug.; Dec.; B- (2) Flower heads of Encelia californica, Haplopappus, and blossoms of certain other composites (C. H.)

*DICHORDA ILLUSTRARIA Hlst. (4084) (1) Apr. - July - Aug. - Jan.; B+ (2) Rhus laurina; R. trilobata, in the San Gabriel Mts. (3) The larvae do not attach bits of plant material to themselves.

DREPANULATRIX BIFILATA Hlst. (4618) (1) June - Aug. - Sept. - Nov.; A (2) Cercocarpus

DREPANULATRIX FALCATARIA Pack. (4622) (1) Dec. - Jan. - Feb. - Mar.; B+ (2) Ceanothus (Rindge, 1949)

*DREPANULATRIX HULSTII Dyar (4632) (1) Mar. - Nov.; A (2) Ceanothus ?; Rhamnus crocea

DREPANULATRIX MONICARIA Gn. (4619) (1) Feb. - June; Oct. - Dec.; A (2) Ceanothus megacarpus, C. spinosus

DREPANULATRIX CUADRARIA USTA Rindge (4633) (1) Jan. - June; Sept. - Nov. - Dec.; B+

DREPANULATRIX UNICALCARARIA Gn. (4634) (1) Recorded for every month; "peaks" around Apr. - June, and Sept. - Oct.; A (2) Ceanothus (Rindge, 1949)

*DYSTROMA HULSTATA Tayl. (4425) (1) Late Apr. - May - June; A (2) Lithophragma (C. H.)

EPIRRHOE PLEBECULATA Gn. (4549) (1) Dec. - Feb. - Mar.; diurnal only; B+ (2) Galium

*EUPITHECIA ACUTIPENNIS Hlst. (4374) (1) Nov. - Dec. - Feb.; A (2) Artemisia californica (Rindge, 1952)

EUPITHECIA GILVIPENNATA C. and S. (4370) (1) Late Nov. - Dec. - mid Jan.; C EUPITHECIA MACDUNNOUGHI Rindge (1) Recorded for Dec., through Aug., with "peaks" around Mar. and July - Aug.; A

EUPITHECIA MISTURATA Grt. (4267) (1) Dec. - Feb. - Mar.; A (2) Baccharis pilularis (Rindge, 1952)

•EUPITHECIA NEVADATA Pack. (4375) (1) Late Dec. - Feb. - Mar.; A (2) Lotus scoparius (3) The dark green larva has an intense red-purple lateral line, edged above by yellowish-white.

EUPITHECIA ROTUNDOPUNCTA Pack. (4285) (1) Mar. - Apr.; B+

EUPITHECIA SHIRLEYATA C. and S. (4373) (1) Feb. - Mar. - Apr.; A (2) Marah (= Echinocystis macrocarpus (Rindge, 1952)

NOTE: There may be some species of Eupithecia that were missed, as these moths were not as well-collected as they should have been; the data for this genus is spotty.

•EUSTROMA SEMIATRATA Hlst. (4398) (1) June; B (2) Epilobium (J. C.)

•GLAUCINA EPIPHYSARIA Dyar (4827) (1) Feb. - May - Oct. - Dec.; A

•HESPERUMIA SULPHURARIA Pack. (and forms) (4801) (1) May - June - July; A (2) Ceanothus spp. (J. C.), Cercocarpus betuloides (C. H.), Arctostaphylos glauca (C. H.) (3) The adults are highly variable in color and pattern.

HULSTINA INCONSPICUA Hlst. (4932) (1) May - June - July; B+ (2) Ceanothus spinosus, and the blossoms of Adenostoma fasciculatum

•HULSTINA WRIGHTIARIA Hlst. (1) May - June - July; A

•HYDRIOMENA ALBIFASCIATA Pack. (4467) (1) Dec. - Feb.; A (2) Quercus agrifolia (on new leaves, in Mar.) (3) Typical albifasciata (marked with white) is present, but uncommon; the usual form in this locality lacks all white.

HYDRIOMENA EDENATA Swett (subspecies?) (4495) (1) Feb. - Mar. - early Apr.; B

•HYDRIOMENA NUBILOFASCIATA Pack. (4469) (1) Jan. - Feb. - early Mar.; A (2) Quercus agrifolia (on new leaves, in late Mar.) (3) The adults are often seen flying in the daytime, especially in shady ravines. (They are easily disturbed to activity). On mild, cloudy days, they fly more. The larvae are abundant on oak, in March and early April. They rest in a half-curved posture within leaf nests; usually the nests are of two overlapping leaves, tied flatly together with some silk. The larva is short and fairly plump, and is mostly white or cream marked with black. The small pupa is reddish-brown. The pupal stage lasts from 8 to 10 months. The adults vary tremendously in color and maculation of the forewings.

•ITAME EXTEMPORATA B. and McD. (4758) (1) Late Mar. - Apr. - early June; B (2) Cercocarpus betuloides

•ITAME GUENARIA Pack. (4765) (1) Apr. - May - June - early Aug.; A (2) Rhamnus crocea (3) The larvae are present in May and June.

ITAME QUADRILINEARIA Pack. (4757) (1) July; B-

•LITHOSTEGE ANGELICATA Dyar (4218) (1) May - June; C

•MEROCHLORA FASEOLARIA Gn. (4106) (1) Mar. - Apr.; Oct. - Nov.; B+ (2) Artemisia californica (3) A series of 17 close-up photographs, depicting the life history of this moth, are presented in an article entitled "A Sagebrush Cinderella", by George E. Jenks, in Nature Magazine, Vol. 39, No. 7 (Aug. - Sept. 1946). (In that article, the moth is identified as "Nemorina californica"). The larvae decorate themselves with bits of plant material (scraps of floral parts and leaves).

•NASUSINA INFERIOR Hlst. (4251) (1) Mar. - Apr. - May; B+

NASUSINA VAPORATA Pears. (4252) (1) Mar. - Apr. - May; A (2) Blossoms of Adenostoma fasciculatum

NEMORIA DELICATARIA Dyar (4052) (1) Dec. - June - Aug.; B (2) Heteromeles arbutifolia (= Photinia) (J. C.)

NEMORIA PUNCTULARIA B. and McD. (4060) (1) Mar. - May - July; Oct. - Nov.; B+ (2) Ceanothus spinosus; Quercus (J. C.)

•NEOTERPES EDWARDSATA Pack. (5159) (1) Late Apr. - May; Aug.; Oct.; C (2) Dendromecon, Romneya (J. C.)

•NOTHOPTERYX VERITATA Pears. (4224) (1) Mid Feb. - mid Mar.; B

•OPOROPTERA OCCIDENTALIS Hlst. (4241) (1) Late Dec. - Jan.; C (3) The female is wingless.

•PALAEACRITA LONGICILIATA Hlst. (4959) (1) Dec. - Jan. - Feb.; B (2) Adenostoma fasciculatum (record of Frank Sala) (3) The female is wingless.

•PAREXCELSA ULTRARIA Pears. (4854) (1) Late Sept. - Oct. - Nov.; A (3) Both sexes come readily to light.

PERCNOPTILOTA OBSTIPATA Fabr. (4535) (1) Apr. - June; Oct. - Nov.; B- (2) Various low-growing plants (J. C.)

PERIZOMA CUSTODIATA Gn. (4586) (1) Early Dec.; C₁ (2) Atriplex spp., Grayia spinosa (J. C.)

•PERO MACDUNNOUGHII C. and S. (1) Mar. - Apr. - July; Oct. - Nov.; A (2) Rhamnus crocea, Eriogonum fasciculatum (J. C.), Artemisia californica (J. C.), and other trees and shrubs.

•PHILOBIA ASPIRATA Pears. (4668) (1) Feb. - Mar. - June - Aug.; A (2) Juglans californica

•PHRENE SUBPUNCTATA Hlst. (5174) (1) Jan. - Mar. - June - Nov. - Dec.; recorded for every month; "peaks" underlined; B+ (2) Salvia mellifera (C. H.) (3) The moth is variable in size and color.

•PLATAEA PERSONARIA Hy. Edw. (1) Mar. - May - June; Oct. - Nov. - Dec.; B+ (2) Artemisia californica

PROCHOERODES FORFICARIA Gn. (5210) (1) Jan. - Mar. - Apr. - June - July; B+ (2) Salix (J. C.)

•PTEROTAEA AGRESTARIA Grossb. (4940) (1) May - June - July; A (2) Adenostoma fasciculatum blossoms

•PTEROTAEA NEWCOMBI Swett (4937) (1) Late June - early July; B- (3) Most of these moths come to light between 2 A.M. and 4 A.M.

PTEROTAEA ? SERRATARIA B. and McD. (4939) (1) June - mid July; B+

- SABULODES CABERATA Gn. (5089) (1) Apr. - Sept.; C (2) Due to its wide range of foodplants, this moth has received the common name of "omnivorous looper". In gardens, it often feeds on ivy. (3) This species is much more abundant in city gardens than in areas of undisturbed vegetation.
- SCOPULA QUINQUELINEARIA Pack. (4144) (1) Late May - June; B
- SEMIOTHISA CALIFORNIARIA Pack. (4694) (1) Mar. - Dec.; A (2) Lotus scoparius
- SEMIOTHISA COLORATA Grt. (4693) (1) Late June; C₁
- SEMIOTHISA EXCURVATA Pack. (4713) (1) Late Jan. - Mar.; Oct. - Nov.; B- (2) Juniperus (C. H.) --- This plant does not occur in the area.
- SEMIOTHISA NEPTARIA Gn. (4725) (1) July - Sept.; C (2) Salix
- SEMIOTHISA PICTIPENNATA Hlst. (4716) (1) Late Dec.; C₁
- SERICOSEMA JUTURNARIA Gn. (4645) (1) May - June - July; diurnal and nocturnal; B- (2) Rhamnus (Rindge, 1950); Ceanothus (?) (3) Sericosema adults always rest with the wings up, over the back. See remarks under S. simularia.
- *SERICOSEMA SIMULARIA Tayl. (4648) (1) May - June - July; diurnal and nocturnal; B+ (3) The adult behaves somewhat like Coenonympha, and flies in much the same places preferred by that butterfly: along roadsides, in semi-shade of large shrubs, and in grassy or weedy fields. When approached, the moth flies up vigorously, but lands again a short distance away, usually on the ground and with its wings folded up over its back. Sericosema spp. also come readily to lights at night.
- SICYA MACULARIA LEWISI Swett (5161c) (1) May - June; A (2) Ceanothus spinosus (3) The pupa is brilliant in color, with a rich silvery-pearl surface luster.
- SICYA SNOVIARIA Hlst. (5163) (1) May - July; C (2) Phoradendron flavescens;
- Quercus (3) This species also has a brilliant pupa, which is green, with a gleaming silvery-pearl surface luster. As the pupa ages, the surface luster becomes more intense. Occasional pupae are speckled and streaked with black; such pupae have a bronze-silver luster, and show little (if any) green.
- *SLOSSONIA RUBROINCTA Hlst. (5056) (1) June - mid July; B+ (2) Quercus dumosa (J. C.) (3) The adult always rests with its wings up, over the back.
- SPARGANIA MAGNOLIATA CUADRIPUNCTATA Pack. (4555b) (1) Mar. - Apr.; late Nov.; B (2) Members of the Onagraceae (J. C.)
- *STAMNOCTENIS COSTIMACULA Grossb. (1) Nov. - Dec.; B (3) Upper surface of wings always grayish, with a sheen, but never "pearly" white as in S. ululata. Maculation prominent along costal margin of forewing.
- *STAMNOCTENIS ULULATA Pears. (4458) (1) Oct. - Nov. - early Dec.; B- (3) Adults always rest with wings up, over the back. Males rarely come to lights.
- STAMNODES AFFILIATA Pears. (4438) (1) Nov. - Dec. - Feb.; B+ (2) Salvia mellifera (C. H.), Salvia apiana (C. H.) (3) This species, and the following Stamnodes spp., always rest with the wings up, over the back.
- STAMNODES ALBIAPICATA Grossb. (4436) (1) Feb.; C (2) Pholistoma auritum (C. H.), Nemophila (C. H.), Phacelia cicutaria (C. H.)
- *STAMNODES ANSELLATA Hlst. (4441) (1) Dec. - Feb. - Apr.; A (2) Cercocarpus betuloides (C. H.)
- STAMNODES COENONYMPHATA Hlst. (4442) (1) Feb. - Mar.; A (2) Cercocarpus betuloides (3) This species is often active in the daytime, especially in shady ravines. (Other Stamnodes spp. are easily disturbed to activity in the daytime).
- STENASPILATES APAPINARIA Dyar (5069) (1) Mar. - July - Aug. - Nov. - Jan.; B+ (2) Salix (J. C.), Lonicera (J. C.) (3) These moths are variable in color and details of maculation.
- STERRHA BONIFATA Hlst. (4176) (1) All year (summer in particular); B+ (2) Oatmeal, raisins, dried plants, etc. (3) The moth rarely comes to light--in fact, it seems to avoid light whenever possible. It is most often seen indoors, where it rests on walls, curtains, etc. It is a very weak flier.
- STERRHA sp. (1) June - July - early Aug.; B (3) The wings of this moth have a glossy surface-sheen.
- SYNAXIS CERVINARIA Pack. (5191) (1) Mar. - Apr. - May - June; A (2) Populus, Quercus, etc. (3) The adults vary from dull brown and tan to bright orange-brown.
- *SYNAXIS HIRSUTARIA B. and McD. (5195) (1) Oct. - Nov.; B (2) Cercocarpus betuloides (C. H.), Ribes malvaceum (C. H.) (3) The adults vary from dark gray to various shades of brown, and the wings are often heavily speckled.
- SYNCHLORA LICUORARIA Gn. (4073) (1) Mar. - July; Oct. - Nov.; B (2) Flowers of Eriogonum fasciculatum, Artemisia californica, etc. (3) These larvae decorate themselves with bits of floral parts and other debris, as do the larvae of Merochlora faseolaria Gn.
- *THALLOPHAGA TAYLORATA Hlst. (5019) (1) Dec. - Jan.; May - June; Aug.; B-
- TORNOS ERECTARIUS FIELDI Grossb. (4817) (1) May - July - Aug. - Oct. - Jan.; B+
- TRIPHOSA CALIFORNIATA Pack. (4245) (1) Jan. - Feb. - Mar.; A (2) Rhamnus crocea (3) The short, plump, and colorful larvae are present in May and June. During the day, the larva rests in a slight nest between two leaves; it feeds after dark.
- VENUSIA DUODECEMLINEATA Pack. (4590) (1) Jan. - Mar.; diurnal and nocturnal; B+
- *ZENOPHLEPS LIGNICOLORATA Pack. (4531) (1) Mar. - early Apr.; Oct. - Nov. - mid Dec.; A (2) Galium angustifolium (preferred), G. nuttallii (3) The larvae are nocturnal feeders, and hide by day on the lower (woody) stems of perennial Galium. They are rather inactive, and will drop if alarmed, but not on silken threads. If handled, they usually remain rigidly stick-like. Many larvae of this species were collected by the author in February, 1964.
- ZENOPHLEPS OBSCURATA Hlst. (4533) (1) Feb. - May - Aug.; B-

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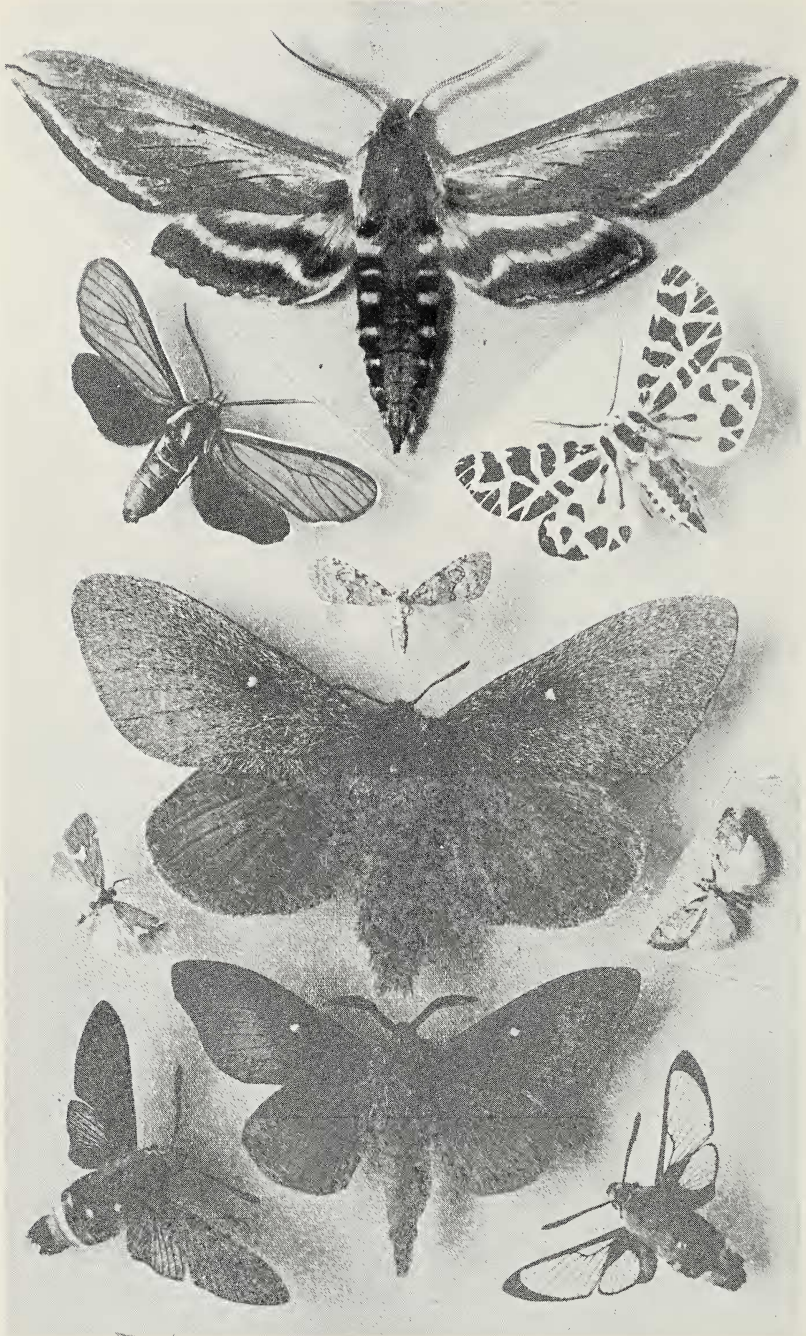
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EXPLANATION OF THE PLATES

Although it would have been ideal to figure all of the species covered in this paper, space was limited. Eighty five of the species — some common (and typical of the habitat), and some scarce or unusual records — were selected for illustration, with emphasis on well-marked specimens. All specimens are natural size, or very close to it. All specimens are from the same locality as indicated in the introduction to this paper. Dates are given in numbers, with the month FIRST. (Example: 3/5/54 = March 5, 1954).

1. *Sphinx ? perelegans* ♂ (Sphingidae), 5/25/55

2. *Ctenucha brunnea* ♂ (Amatidae), 3. *Apantesis ornata* ♂ (Arctiidae),
emerged 6/24/56 (reared from larva on *Elymus condensatus*) 4/28/57 (4:30 A.M.)

4. *Sarbena minuscula eucalyptula* (Nolidae), 2/5/56

5. *Gloveria gargamelle medusa* ♀ (Lasiocampidae), 7/16/55

7. *Cisthene dorsimacula* ♂
(Lithosiidae), 6/15/55

8. *Celama minna*
(Nolidae), 5/20/57

6. *Gloveria gargamelle medusa* ♂,
emerged 6/28/55 (reared from larva
on *Eriogonum fasciculatum*)

9. *Hemaris diffinis thetis*,
freshly-emerged, having never
vibrated its wings; emerged 5/30/57
(reared from egg on *Lonicera Subspicata*)

10. *Hemaris diffinis thetis*
(Sphingidae), 3/26/57
(hovering over *Lantana*
blossom; diurnal)

PLATE I

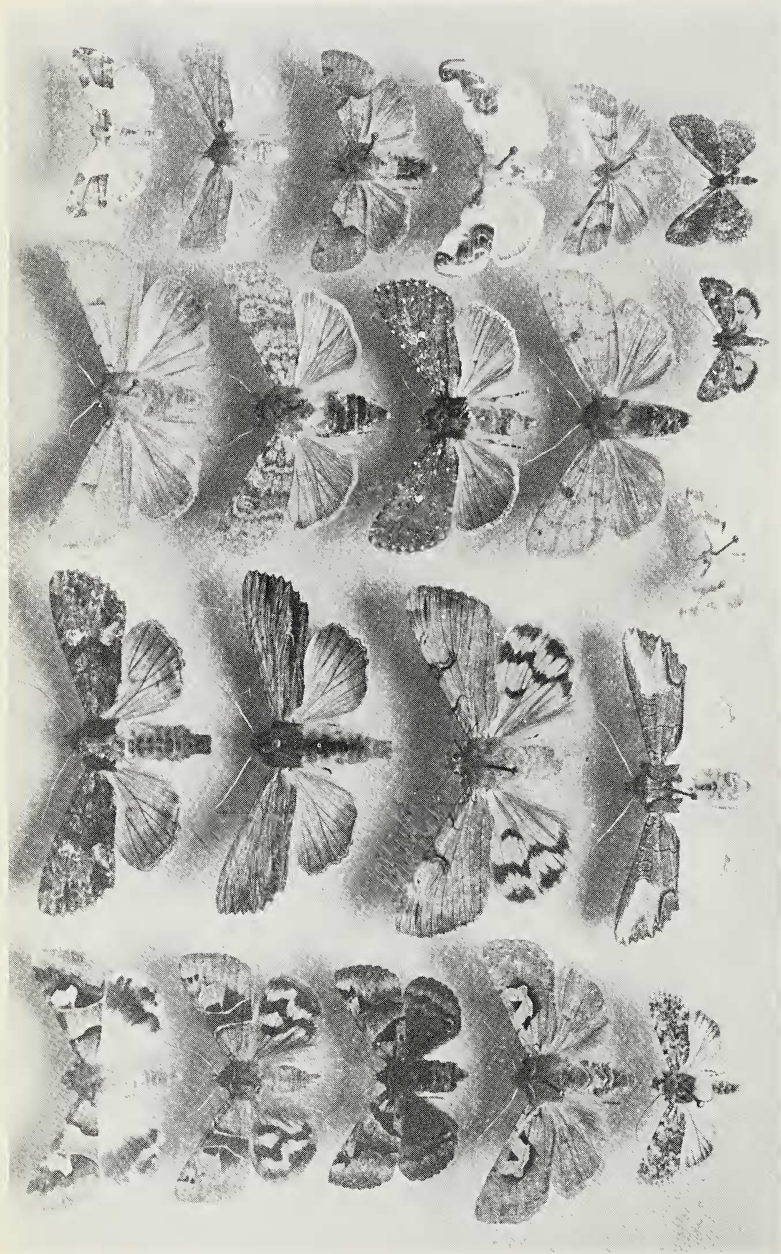


PLATE II

(all Noctuidae)

Column A (far left, from top to bottom)	Column B	Column C	Column D
1. <i>Synedoida pallescens</i> ♂, 10-10-55	1. <i>Septis albina</i> , 5/9/55	1. <i>Cissusa indescrcta</i> ♀, 3-5-54	1. <i>Conochara acuta</i> ♂, 7-9-55
2. <i>Synedoida edwardsi</i> ♀, 7-12-55	2. <i>Septis cuculliformis</i> , 5-18-55	2. <i>Euxoa medialis</i> ♀, 11-20-56	2. <i>Zosteropoda hirtipes</i> ♀, 8-28-56
3. <i>Euclidia arditia</i> ♀, emerged 3-23-58 (reared from egg on <i>Lotus scoparius</i>)	3. <i>Synedoida ochracea</i> ♀, 7-11-55	3. <i>Platysenta albolabes</i> ♀, 8-1-56	3. <i>Ulolonche dilecta</i> ♂, 9-27-55
4. <i>Acerra normalis</i> ♂, 2-13-56	4. <i>Admetovis similaris</i> ♀, 4-29-55	4. <i>Orthostia arthrolita</i> ♀, 12-14-55	4. <i>Acontia cretata</i> ♂, 7-6-56
5. <i>Oncocnemis singularis</i> ♂, 5-17-57		5. (left of column) — <i>Eublem- ma minima</i> ♀, 7-6-55	5. <i>Hemeroplanis finitima</i> ♀, 6-6-56
		6. (right of column) — <i>Incita aurantiaca</i> , 4-21-56 (on ground; diurnal)	6. <i>Mycterophora geometrifor- mis</i> ♀, 8-29-56

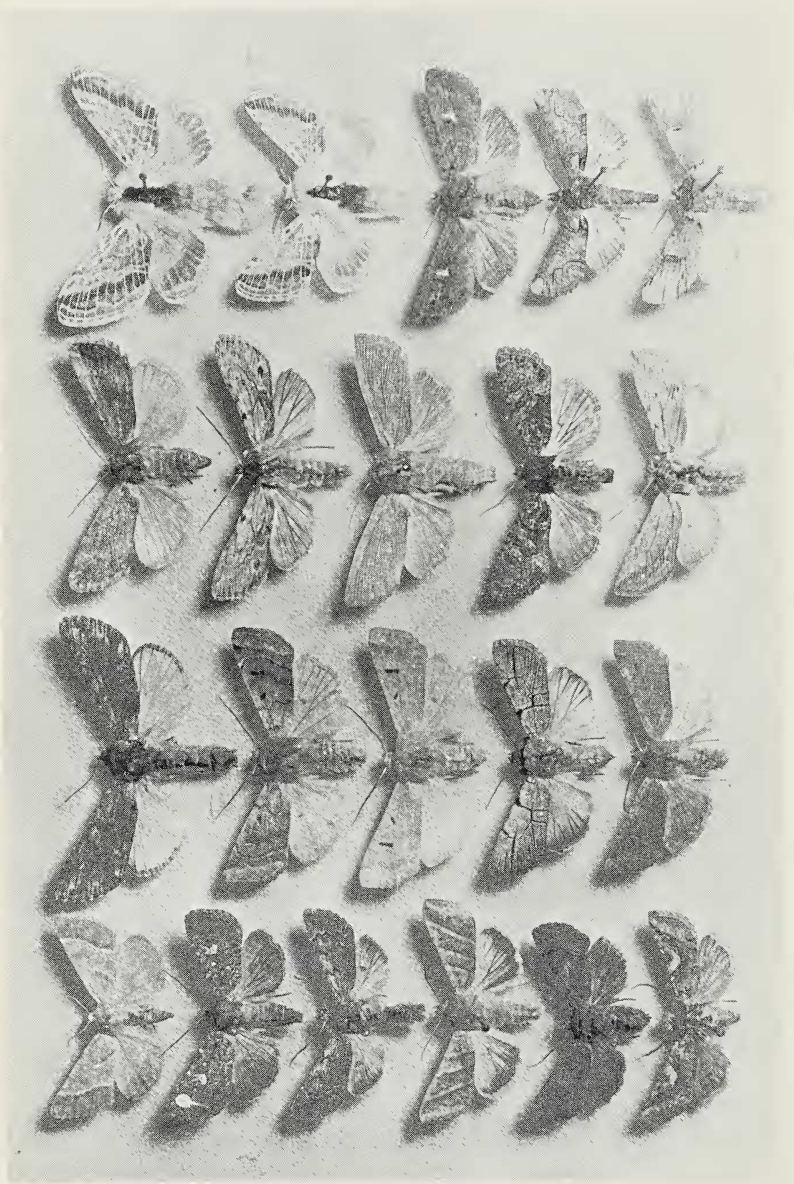
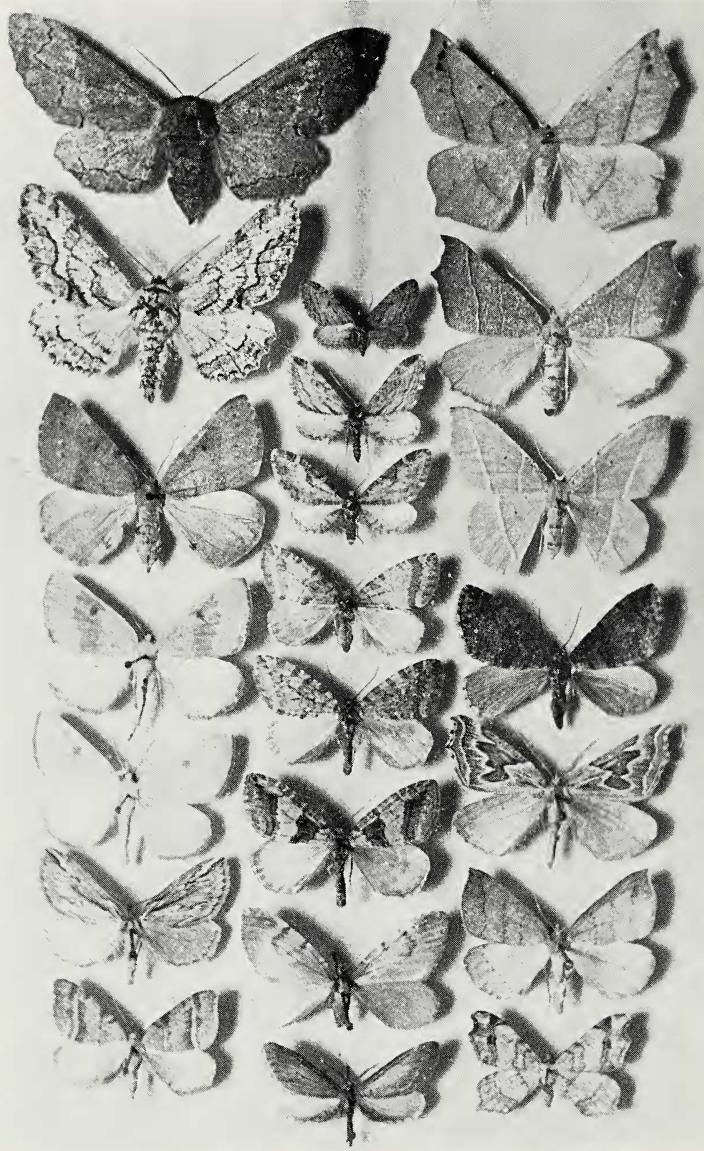


PLATE III

(all Noctuidae, except No. 1, 2, and 5, in Column D)

Column A (far left from top to bottom)	Column B	Column C	Column D
1. <i>Schinia buta</i> ♀, 7-31-54	1. <i>Acronycta othello</i> ♂, emerged 7-30-56 (reared from egg on <i>Rhus laurina</i>)	1. <i>Protoperigea posticata</i> ♀, 9-10-55	1. <i>Tolyte</i> ? <i>louriei</i> ♀ (Lasio-campidae), emerged 7-14-55 (reared from egg on <i>Ceanothus megacarpus</i>)
2. <i>Nepertigea albimacula</i> , 7-26-55	2. <i>Pseudorthostia variabilis</i> ♂ (unusually dark specimen), 10-30-55	2. <i>Cucullia dentilinea</i> ♂, 3-29-56	2. <i>Tolyte</i> ? <i>louriei</i> ♂, emerged 7-16-55 (reared from egg on <i>Ceanothus megacarpus</i>)
3. <i>Pleroma conserta</i> ♂, 1-31-56	3. <i>Pseudorthostia variabilis</i> ♂ ("typical"), 10-3-55	3. <i>Benjaminiola colorado</i> ♀, 11-20-55	3. <i>Tricholita fistula</i> ♀, 10-23-55
4. <i>Heliothis virescens</i> , emerged 10-4-53 (reared from larva on <i>Ribes mabuceum</i>)	4. <i>Oncocnemis ragani</i> ♀, 7-30-56 (reared from egg on <i>Lonicera subspicata</i>)	4. <i>Oligia tusa</i> ♂, 7-12-55	4. <i>Paectes declinata</i> ♂, 7-15-56
5. <i>Behrensia conchiformis</i> <i>suf-fusa</i> ♀, 3-8-56	5. <i>Lycanades purpurea</i> ♂, 11-7-56	5. <i>Pleroma cinerea</i> ♂, 11-29-55	5. <i>Schizura</i> ? <i>unicornis</i> ♂ (Notodontidae), 6-9-56
6. <i>Stretchia inferior</i> , 1-15-56			



Col. A

B

C

PLATE IV
(all Geometridae)

Column A (far left, from top to bottom)

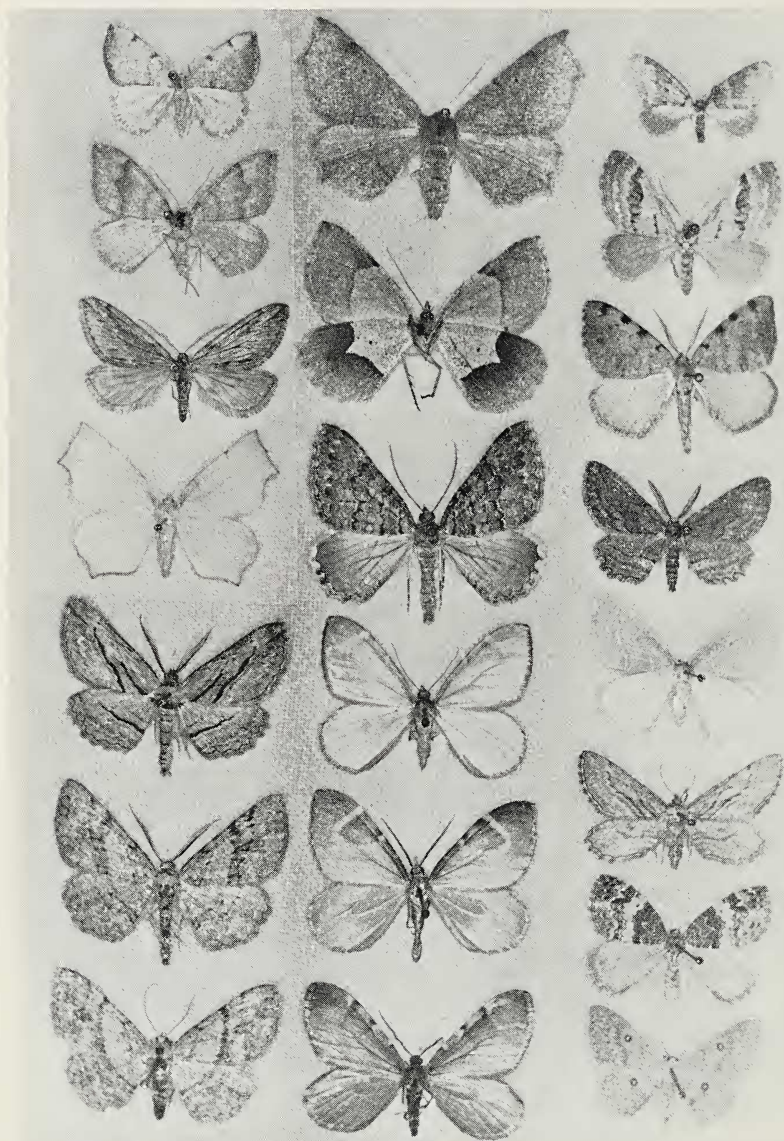
1. *Cochisea sinuaria* ♀, 11-22-54
2. *Cochisea sinuaria* ♂, emerged
11-15-56 (reared from egg on *Rhus
laurina*)
3. *Drepanulatrix hulstii* ♀, 10-21-56
4. *Hesperumia sulphuraria* ♀, 6-3-55
5. *Hesperumia sulphuraria* ♂, 6-23-55
6. *Parexcelsa ultraria* ♂, 9-25-56
7. *Itame guenearia* ♀, 6-21-57

Column B

1. *Nasusina inferior* ♀, 3-28-57
2. *Eupithecia acutipennis*, 12-11-56
3. *Eupithecia nevadata* ♀, 2-7-57
4. *Hydriomena nubilofasciata* ♀,
1-22-56
5. *Hydriomena nubilofasciata* ♂,
1-18-56
6. *Hydriomena nubilofasciata* ♂
1-22-56
7. *Stamnodes annellata* ♀, 2-8-57
8. *Glaucina epiphysaria* ♂, 11-4-56

Column C

1. *Apicia falcata* ♀, 6-4-55
2. *Phrene subpunctata* ♀, 4-12-55
3. *Dichorda illustraria* ♀, 11-9-55
4. *Hydriomena albifasciata* ♀, 12-9-55
5. *Plataea personaria* ♂, 3-23-56
6. *Thalophaga taylorata* ♀, 12-30-56
7. *Philobia aspirata* ♀, 3-26-55



Col. A

B

C

PLATE V

(all Geometridae)

Column A (far left, from top to bottom)

1. *Bapta elsinora* ♀, 3-15-56
2. *Zenophleps lignicolorata* ♀, 4-5-56
3. *Palaeacrita longiciliata* ♂, 12-16-55
4. *Slossonia rubrotincta* ♀, 6-22-55
5. *Pterotaea agrestaria* ♂, 6-4-55
6. *Pterotaea newcombi* ♂, 7-8-57 (4:00 A.M.)
7. *Pterotaea newcombi* ♀, 6-27-56

Column B

1. *Synaxis hirsutaria* ♀, 11-19-55
2. *Sericosema simularia* (underside; abdomen missing), 6-21-57
3. *Camptogramma neomexicana*, 1-24-56
4. *Stamnoctenis ululata* ♀, 11-4-56
5. *Stamnoctenis ululata* ♂, 11-3-56
6. *Stamnoctenis costimacula* ♂, 11-20-56

Column C

1. *Nothopteryx veritata* ♀, 2-26-57
2. *Lithostege angelicata* ♀, 6-26-56
3. *Itame extemporata* ♂, 4-9-56
4. *Aethaloida packardaria* ♂, 4-29-56
5. *Merochlora faseolaria* ♀, 4-13-55
6. *Hulstina wrightiaria* ♀, 6-3-55
7. *Dysstroma hulstata* ♂, 5-28-55
8. *Cosymbia dataria piazzaria* ♂, 6-25-55