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ANNOTATED LIST OF LARVAL FOODPLANT RECORDS FOR 280 SPECIES OF AUSTRALIAN MOTHS¹

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ABSTRACT

Many new and specific larval foodplant records are listed for 280 spp. of Australian moths, of which 13 are Microlepidoptera and 267 are Macrolepidoptera; 2 additional records (1 agaristid, 1 arctiid) are Fijian. Twenty-two families are represented, as follows: Agaristidae (8 spp.); Anthelidae (12); Arctiidae, s.l. (11); Carthaeidae (1); Cochyliidae (1); Cossidae (1); Geometridae, s.l. (155 spp. or 55% of the total); Immidae (1); Lasiocampidae (9); Limacodidae (5); Lymantriidae (4); Noctuidae (25); Nolidae (10); Notodontidae, s.s. (8); Oecophoridae (3); Pterophoridae (1); Pyralidae (2); Saturniidae (1); Sphingidae (4); Thaumetopoeidae (11); Xyloryctidae (4); Zygaenidae (5). Representation of Australian States (encompassing all listed localities where foodplant records are involved) is as follows: South Australia (68%); Western Australia (17%); northeastern Queensland (9%); New South Wales, Northern Territory, and western Victoria combined (6%); Tasmania (none). The majority of S. Aust. records are from the vicinity of Adelaide (Blackwood-Belair district) and most of the W. Aust. records are from the Geraldton district. Scientific names and families are given for all plants, with complete author citations and sources of determinations for each. A foodplant index lists most plants by common, generic, and specific names. All moths are arranged alphabetically in the text, with cross-references to some generic synonyms. Additional details are given for many spp., usually including: (1) code-numbers by which all preserved material can be located in various named institutions; (2) details on the stages preserved and photographs made for each life history; (3) dates of adult emergence and of larval occurrence on the plants; (4) part(s) of the plants eaten; and (5) remarks on distinctive features of larvae or adults in species that are difficult to separate.

¹ NOTE: The author regrets that he will not be able to supply reprints of *this paper*, and that reprints of McFarland (1972a-1975) are no longer available. *This paper* is available separately as a back issue of the *Journal of the Lepidopterists' Society*.—Ed.

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ANNOTATED LIST OF LARVAL FOODPLANT RECORDS FOR 280 SPECIES OF AUSTRALIAN MOTHS

INTRODUCTION

This annotated list summarizes certain information about the adults, early stages, and foodplants of Australian moths I have reared and studied over the last 14 years (1 December 1964–30 November 1978). Many of the species here listed have been reared from eggs which were obtained from confined females. For most details of the rearing and preservation techniques used, see earlier papers (McFarland, 1964; 1965; 1972a; 1973). Few (if any) of these specific foodplant records have ever been published before, and a high percentage of these life histories were previously unknown. This work is documented by an abundance of preserved material (all stages), plus extensive notes and numerous photographs of the living adults, eggs, larvae, and pupae.

More than half of the foodplant records in this paper involve the family Geometridae, s.l. (155 spp. or 55% of the total reported here). The geometrid subfamilies are represented as follows: Ennominae (72 spp.), Geometrinae (37), Larentiinae (16), Oenochrominae (24), Sterrhinae (6). Among the other "macro" families, numbers of spp. reported in the list are: Agaristidae (8), Anthelidae (12), Arctiidae, s.l. (11), Carthaeidae (1), Lasiocampidae (9), Limacodidae (5), Lymantriidae (4), Noctuidae (25), Nolidae (10), Notodontidae, s.s. (8), Saturniidae (1), Sphingidae (4), Thaumetopoeidae (11), and Zygaenidae (5). Foodplant records are also included for 13 miscellaneous "micros": Cochyliidae (1), Cossidae (1), Immidae (1), Oecophoridae (3), Pterophoridae (1), Pyralidae (2), and Xyloryctidae (4). A number of other foodplant records had to be omitted due to uncertainty concerning the specific

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identities of some of the moths, although a few of these have been included if the larvae (or the foodplants) were of particular interest.

This paper was written as foundational to a series of illustrated life history publications that are intended to follow in the future. However, this basic information on foodplants and seasonal occurrences is being reported in view of the man-caused destruction of habitat that is rapidly spreading through the hills south of Adelaide where most of the listed species occur. Eventually, all that will remain of the native vegetation near Adelaide will be the larger trees and shrubs, with most of the smaller native plants gone; this, in fact, nearly describes the present situation.

Representatives of all South Australian (S. AUST.) specimens discussed here (material collected between Jan. 1965–May 1970) have been deposited in the South Australian Museum of Natural History (Entomology Department), North Terrace, Adelaide. Other specimens from Western Australia, and some duplicates from S. Aust., have been deposited in: the British Museum (Natural History), London; the Australian National Insect Collection (A.N.I.C.), Canberra; the Western Australian Department of Agriculture (Entomology Section), Jarrah Rd., South Perth. Most of the Queensland material (1972) has been given to the A.N.I.C. Some of the geometrid larvae are temporarily being retained by the author for study, but all will eventually be deposited in one or more of the above named institutions. All of the original photographs (prints and negatives), and the handwritten notes, plus a complete duplicate set of the notes (photocopied and stored separately in a bank vault) are at present being held by the author. Other photocopied sets of the same notes will eventually be distributed to one or more of the above institutions. A complete *index* to the collection is also kept up-to-date (in notebook form), all species being listed in numerical order by family and code-number; duplicate copies of this index (complete only through 1970) have been deposited at the S. Aust. Natural History Museum (Adelaide); with D. S. Fletcher at the British Museum (N.H.) (London); at the Los Angeles County Museum of Natural History (California); and with T. C. Emmel of the Zoology Department, University of Florida (Gainesville). This index also covers the North American life history material in my former U.S. collection (through October 1964), for which the majority of larval foodplant records were recently published (McFarland, 1975); this material is in the Los Angeles County Museum of Natural History.

All specimens in vials have been fixed in K.A.S.A. (see McFarland, 1965) or K.A.A. (3-2-10), and preserved in 80% to 90% ethyl alcohol. (Ideally, the concentration of alcohol for permanent storage should be around \pm 80%; if much lower than 75%, collapse or darkening of speci-

mens will sometimes occur, but if much over 85%, setae often become too brittle and easily broken. A little glycerine added to the alcohol may be helpful.)

All reared **parasites** associated with these moths have been preserved and deposited in the following three institutions: Diptera mostly in the A.N.I.C. (Canberra) and the B.M. (N.H.) (London); Hymenoptera mostly in the W. Aust. Department of Agriculture, Entomology Section (South Perth). Of the ± 40 tachinid spp. reared to date, many have been determined, at least to genus, by D. H. Colles (Canberra) or R. W. Crosskey (London), but none of the hymenopterous parasites (± 60 spp.) have been identified as yet. All parasites have been code-numbered, and the details were recorded in two separate series of notes (D and H); empty puparia and cocoons have always been saved when possible. It is worth noting that there seems to be a great preponderance of hymenopterous over dipterous parasites associated with the geometrids (and especially the Geometrinae), whereas, in most of the field-collected larvae representing other families of Lepidoptera, dipterous parasites were much more frequently encountered. This may have been a coincidence, of course, but it might reflect the natural situation correctly.

Life History Stages Preserved: At the end of each entry (in parentheses) certain numbers designate exactly which stages of that life history have actually been preserved and/or photographed. In order to save considerable space, this information is conveyed simply by use of the following numbers:

- 1 = **Adults** (for photos this usually implies living individuals in their natural resting positions; sometimes also spread specimens).
- 2 = **Eggs** (preserved material can be alcoholic and/or dried unhatched eggs, or dry empty shells, as described in an earlier paper (McFarland, 1972a: 209-211)).
- 3 = **First instar larvae** (specifically).
- 4 = All or some **intermediate instars** (second through penultimate).
- 5 = **Last instar** (specifically); in notebooks and on all labels this has been abbreviated as "L5," regardless of actual number of instars involved.
- 6 = **Pupae** (in alcohol, or empty dry shells inside gelatin capsules, on the pins beneath reared adults; often *both* wet and dry are saved).
- 7 = **Cocoons** or **soil-cells** (also occasionally implies larval nests or examples of feeding-damage to the foodplant, if unusual or distinctive in some respect). Dry frass samples from last instar larvae of some spp. were also preserved but have not been mentioned.
- 8 = **Parasites** reared and preserved: d = Diptera; h = Hymenoptera; m = mites or miscellaneous. (Examples: "8dh" would indicate one species of Diptera and one species of Hymenoptera reared from the same host; "8hhh" would indicate 3 different hymenopterous parasites from the same host species.)
- 9 = **Notes** were made (nearly always including color descriptions based on living specimens; often details on cryptic coloration, habits, and behavior; also food-plant and habitat descriptions, etc.).

With reference to **photographs**, the number followed by "c" implies 35 mm color slides (otherwise they are 35 mm black & white). Numerous habitat photographs were taken between 1966–1970, depicting my main collecting localities as they were at that time. These are kept in the same files with the life history photographs. Taxonomists having queries on any of this material are welcome to write me; I would be able to provide further details in many cases.

Specimen Code-numbers: A consistent code-numbering system is vital to this type of work. It is not always possible to quickly identify reared moths with accuracy (particularly in remote or poorly-known regions!), and a percentage usually prove to be new species. The use of code-numbers guarantees that, as long as specimens or photographs from my original series exist somewhere, they can always be re-checked by future workers; these published records will therefore remain essentially identifiable whether or not subsequent taxonomic revisions cause changes in the nomenclature, which they certainly must in some cases.

The ennomine geometrid genus *Chlenias* is a good example: Few of these relatively similar-looking but variable adults can at present be easily separated with accuracy, yet the larval differences (in coloration, maculation, morphology, habits, behavior, and foodplant preferences) are often consistent and striking, and provide useful taxonomic clues. The biological and phenological information here reported for *Chlenias* spp. took me years to gather and sort out. It would be ridiculous to exclude the unidentified (but obviously different) *Chlenias* spp. from this report merely for lack of specific names! Future investigators of the *Chlenias* complex will be off to a rapid head start if they have access to this information and the associated preserved material. The same situation also applies to the 4 very distinctive but unidentified *Pterolocera* larvae (Anthelidae). Code-numbering effectively overcomes the urgency of immediate naming by providing simple "interim handles" for all taxa studied. Determinations can follow years later, as convenient (or when possible).

All of the rearings, whether from eggs (ex confined ♀♀) or field-collected larvae, are code-numbered for separation by family and species. For example, "G.80" refers only to the oenochromine geometrid (G.), *Phallaria ophiusaria* Gn. (80), and not to any other moth. A capitalized letter (A, B or C, etc.) directly following any code-number implies material from another population of the same species. The code-numbers are enclosed inside all vials containing preserved immatures, and the identical numbers are handwritten on blue labels attached to the corresponding pinned adults. They are also enclosed with all preserved dry egg shells, frass samples, occasional cocoons, and associated parasites

reared from field-collected larvae. Field notes and related photographs are also identically code-numbered to cross-reference them to the alcoholic and/or dry material they represent. In the list that follows, my code-numbers usually appear in the first line of each entry (after the determination citation) where applicable; some (few) species were not code-numbered, usually in those instances where no notes were written.

Dates: The usual or "normal" dates of larval and adult occurrence (in the localities named) are given, if known with certainty, including peaks of abundance when these were obvious. All dates applicable to adults include the entire flight period, from the earliest to the latest recorded for each species during the study period. All dates given refer only to the localities named; they are not intended to imply knowledge of flight times (or larval occurrence) in any other districts. If the adults came to light only or primarily after midnight (\pm 0130-0400 hrs), a remark to this effect has been inserted after the months of flight; this applies to many of the moths studied, even including some winter-emerging species that fly on cold nights. The ennomine geometrid, *Smyriodes aplectaria* (G.140), is an example of the latter.

The months are subdivided simply as follows: "early" = 1st through 10th; "mid" = 11th through 20th; "late" = 21st through 31st. (Finer subdivisions of the months become meaningless over a period of several consecutive years in view of the usual local climatic fluctuations from year to year.) Dates showing months only (minus the year) usually imply that I have multiple records for that species over several years, but if the year is also included this usually implies only a single record.

Some (relatively few) of the spring- and summer-emerging moths have more than one generation per year, whereas the great majority of autumn- and/or winter-emerging moths are single-brooded, with the larval stage often extending over two, three, or even more months during the coldest and wettest part of the year in southern Australia (\pm May-Aug. or Sept.).

Larvae may be presumed diurnal feeders (or feeding both day and night) unless it is stated otherwise; where included, such information refers only to final instar larvae. (Some species that feed both day and night when small become strictly nocturnal feeders in later instars, and their habits or behavior may also change in other ways.) This distinction, in the case of strictly nocturnal feeders, can be of great importance when hunting such larvae in the field. Entirely different searching and collecting techniques are obviously required for larvae inclined to hide by day under loose bark, well down the stems of their foodplants, or under debris beneath the plant, often far-removed from their places of nocturnal feeding.

Abundance-ratings: After "Adults" (in parentheses) a capital letter, indicating the relative abundance, is given for those species with which I was more familiar. In the case of Blackwood, this information is based on numbers of adults attracted to two ultraviolet lights ("black light"—G.E. F15T8.BL), situated in the same positions during nearly six consecutive years of resident collecting in the same suburban garden, between January 1965 and September 1970. All hours from dusk to dawn were regularly sampled, during all seasons of the year, throughout this period.

These abundance-ratings are expressed as follows: (A+) = *extremely abundant*; (A) = *abundant*; (B+) = of *moderate* abundance but tending toward (A); (B) = of *moderate* abundance, not really common but by no means rare; (B-) = of *moderate* abundance but tending toward (C); (C) = *rare*, with ± 6 or fewer individuals seen in most years; (D) = *very rare*, with only 2 or fewer individuals seen in most years (some years none). These abundance-ratings refer only to the occurrence of adult moths (at uv. lights), in the specific localities named, and they also attempt to reflect the "average" or overall relative abundance of cyclic species during the entire study period. (As in all localities, some South Australian species fluctuate considerably, whereas others appear to remain relatively constant in their numbers from year to year.)

The foothills S. of Adelaide are in the path of rapidly expanding destruction from mushrooming suburbia (euphemistically known as "development"). It can be predicted that changes undoubtedly will take place in the relative abundance of some of the moths named in the pages that follow (particularly those restricted to feeding on genera other than the dominant *Eucalyptus* or *Acacia*), as the few remaining vestiges of "original" habitat disappear around Blackwood, Belair, and elsewhere in the Mt. Lofty Range. Some of these moths, whose foodplants are already scarce, may even become extinct in the Blackwood district, or will inevitably become less abundant than they were in former years. It is therefore important to keep in mind that most of the observations here reported were made between 1965–1970.

Localities: Most of these notes were recorded in the Mount Lofty Range, at 2 Gulfview Rd., Blackwood (elevation 800–900 ft.), a hilly suburban area about 7 road-miles south of Adelaide, South Australia. The Blackwood observations were centered almost entirely in and around the Gulfview Rd. — Hannaford Rd. area. Periodic visits (in all seasons) were also made to a small but rich and varied remnant patch of nearly undisturbed native flora inside the northwest section of Belair National Park, about 2 mi. northeast of Blackwood and between one half to one mile east of Belair Railway Station, just south of Sheoak Rd.; this habitat

differed considerably from the Blackwood locality in having a far better representation of the heath or scrub elements (smaller evergreen sclerophyll bushes) of the original Mt. Lofty Range flora.

Western Australian records given as "Drummond Cove, \pm seven mi. N of Geraldton" are based on four years of collecting (uv. lights and hunting for larvae, etc.) at Lot 68, Drummond Cove, or within a short distance south of Lot 68; this is a coastal sandhill habitat dominated by *Acacia ligulata*.

A number of other moth foodplant records are also included from tropical N. Queensland, the far southwest of Western Australia, and a few miscellaneous other Australian localities; also, a supplement giving two foodplant records from the Fiji Islands follows the family Zygaenidae.

All localities named are the exact source-localities of the specimens (either of the original females from which eggs were obtained or of the field-collected larvae), regardless of whether or not they were later transported to some other locality during the process of rearing.

Climate and Seasons: I interpret the natural seasonal cycle in coastal South Australia as "beginning" with the earliest soaking rains of autumn, which is also the cycle in coastal southern California; this is a very similar Mediterranean climatic pattern, except for the six-month-reverse in seasons and a somewhat higher (but unreliable) rainfall in the South Australian spring and summer. The coastal S. Aust. wet season is cool to cold, followed by a relatively long dry season that is warm to hot with only occasional precipitation in the form of unpredictable summer thunderstorms in some years.

In mild-temperate South Australia (Adelaide vicinity), the seasons can be interpreted roughly as follows: *late March to about early May* = autumn (warm to chilly; semi-dry grading to wet); *about mid May through August* = winter (mild to cold; mostly wet); *September to about early November* = spring (chilly to warm; wet grading to semi-dry); *about mid November to mid March* = summer (cool to hot; mostly dry).

Average annual rainfall at Blackwood, S. A., as gleaned from records kept in the local Post Office (1929-1969), was 26.75"; it had been as low as 13.71" (1967) and as high as 38.20" (1968), during this 41-year period. Snow rarely falls, but traces may be seen in the Mt. Lofty summit area once or twice in most winters. Average monthly rainfall, in inches, has been as follows (1929-1969): April = 2.44"; May = 3.43"; June = 3.41"; July = 3.63"; Aug. = 3.21"; Sept. = 2.56"; Oct. = 2.31"; Nov. = 1.62"; Dec. = 1.26"; Jan. = .89"; Feb. = 1.05"; March = .94". The seasonal breakdown of this precipitation pattern (rounded off to the nearest inch) turns out thus: autumn = 4"; winter = 13"; spring = 6"; summer = 4" (Blackwood, S. Aust.).

Temperatures: Nocturnal winter lows rarely drop below 34°F.; diurnal summer highs rarely surpass 102°F. (usually in the 70's, 80's, and low 90's) in the Blackwood district. July is usually the coldest month of the year (or June–mid August); Jan.–Feb. are usually the warmest months, and can be very hot for brief periods.

Foodplants: All foodplant names listed here have been carefully checked in the various floras available at the time I was doing this work, and difficult or variable plants were also submitted to specialists for determination (see Acknowledgments). Since residence began in W. Aust. (July 1972), most larval foodplants are now being collected, pressed, and deposited in the W. Aust. Herbarium (Perth). The family is named at least once for every foodplant genus, but to save space the author citations and families of the Blackwood or Belair plants appearing most frequently in the list are given only once, in the following section on Vegetation. The system of plant classification employed here (above the generic level) mostly follows a recent world synopsis of flowering plants by Thorne (1968); for additional details on this topic, see McFarland (1970 and 1975: 113). Only standard family name endings (-aceae) are used. An asterisk (*) preceding the name of any plant implies that the species is introduced (naturalized and growing wild) in the locality named, but was not originally native there.

The words "on" or "accepted," preceding the name of the plant, convey subtle but important differences: "on" implies that I know (from field observation) that the plant listed is a natural foodplant of the moth in the named locality, whereas "accepted" (or "acc.") implies that the larvae were reared from eggs in captivity, and that they chose the named plant from a selection of samples offered by me, but I have no positive field evidence that they are necessarily to be found on that plant under natural conditions. However, if the larvae did not thrive upon an offered plant and successfully produce normal adults, the plant has not been listed here as "acceptable." Most of these cases probably do represent the actual foodplant(s) used in the locality, unless the larvae were reared in some locality other than that where the original ♀ was collected; only a few cases of this nature are reported here.

The larvae may be presumed leaf-feeders if some other part of the foodplant is not specifically named. The distinction between young (new) leaves and mature (old or tough) leaves is often of great importance, particularly in connection with evergreen sclerophyllous plants; this has been consistently reported if such preferences could be discerned in the larval feeding habits.

Vegetation: As the majority of records in this paper are from the Blackwood-Belair district of S. Aust., a brief characterization of the flora,

as it was in that locality between 1965 and 1970, seems desirable. The native plants of the district composed a variable forest-and-scrub mixture of evergreen sclerophyll trees and shrubs (of many sizes), also including many grasses, sedges, bulbs, annual herbaceous plants, mosses, and a few ferns, etc.

Family MYRTACEAE: *Eucalyptus odorata* Behr. ex Schldl. (peppermint box or mallee box) and *E. leucoxylon* FvM. (blue or yellow gum or white ironbark) were the two dominant **trees** around Blackwood (especially the former). MIMOSACEAE: *Acacia pycnantha* Benth. (golden wattle) was abundant, growing as a large shrub or small tree under and among the eucalypts. *Casuarina stricta* Ait. (drooping sheoak, also a tree) was fairly common in some parts of the district. In the Belair National Park, S. of Sheoak Rd., *Eucalyptus fasciculosa* FvM. (pink gum) was a locally common tree, while at slightly higher elevations nearby, *E. obliqua* L'Herit. (messmate stringybark) becomes abundant and *E. viminalis* Labill. (mannan gum or ribbon gum) is not uncommon. At lower elevations (mainly along watercourses) *E. camaldulensis* Dehnh. (river red gum) occurs.

The remainder of the native woody plants were mostly **shrubs** (many sizes), of which the more important species are here listed alphabetically by family. ASTERACEAE: *Olearia ramulosa* (Labill.) Benth.; CASUARINACEAE: *Casuarina muelleriana* Miq. ("oak bush"); DILLENIACEAE: *Hibbertia exutiacies* Wakefield (syn. *acicularis*), *H. sericea* (R. Br. ex DC.) Benth., and *H. stricta* (DC.) FvM; EPACRIDACEAE: *Astroloma conostephioides* (Sond.) FvM. ex Benth. and *A. humifusum* (Cav.) R. Br. (native "cranberry"); FABACEAE: *Dillwynia hispida* Lindl., *Hardenbergia violacea* (Schneev.) Stearn (native "lilac," a woody vine), and *Pultenaea largiflorens* var. *latifolia* H. B. Williamson; HALORAGACEAE: *Haloragis elata* A. Cunn. ex Fenzl and *H. heterophylla* Brongn. (not woody); LAURACEAE: *Cassytha glabella* R. Br. and *C. pubescens* R. Br. ("dodder"—both are perennial, twining parasites of various shrubs); LORANTHACEAE: *Amyema miquelii* (Lehm. ex Miq.) Tiegh. (the common pendulous mistletoe, parasitic only on *Eucalyptus* spp. here); MIMOSACEAE: *Acacia armata* R. Br. ex Ait. (Kangaroo thorn; common locally, but almost nothing seems to eat it) and *A. myrtifolia* (Sm.) Willd. (common understory shrub at slightly higher elevations nearby); MYRTACEAE (shrubs only): *Calytrix tetragona* Labill. and *Leptospermum myrsinoides* Schldl. (a slender, erect shrubby "tea tree"); PITTOSPORACEAE: *Bursaria spinosa* Cav.; POLYPODIACEAE: ¹*Pteridium esculentum* (Forst. f.) Nakai (brack-

¹ In Family DENNSTAEDTIACEAE according to Lamp & Collet (1976).

en)—not woody, but an important perennial where locally common; PROTEACEAE: *Banksia marginata* Cav. (“honeysuckle”), *Grevillea lavandulacea* Schldl., *Hakea rostrata* FvM. ex Meisn. (needle bush), and *Isopogon ceratophyllus* R. Br.; SANTALACEAE: *Exocarpos cupressiformis* (Labill.) (native “cherry”; a large, shrubby root parasite); SAPINDACEAE: *Dodonaea viscosa* Jacq.; XANTHORRHOEACEAE: *Xanthorrhoea semiplana* FvM. (Blackboy, grass tree, or yacca; locally common in the NW corner of Belair National Park).

Of the above-listed native plants, undoubtedly by far the most important foodplant genus in the Blackwood-Belair locality (throughout the year) is *Eucalyptus*, for maximum species of moth larvae feeding upon it; both new and old leaves are important. A close second in importance (at Blackwood) would be *Acacia pycnantha* (from June–Oct.), but none of the other local acacias. Following these would be a relatively small number of the other plants, the more important foodplants among them being *Casuarina* (both listed species), *Hibbertia* (only the last two species listed), *Pultenaea largiflorens* var. *latifolia*, *Cassytha pubescens*, *Amyema*, *Leptospermum myrsinoides*, *Hakea rostrata*, and *Exocarpos*. Of these, one of the most important (from July–Oct.) is *Pultenaea largiflorens*, in the Blackwood area; the *other* plants just named occur primarily in the NW corner of Belair National Park, or only in very small and scattered remnant patches closer to Blackwood.

At *higher* elevations in Belair National Park and elsewhere in the Mt. Lofty Range, grow numerous other native plants (both woody and herbaceous), but they are not listed here because these localities are fairly distant from the area in which most of my collecting was concentrated. Some of the moths rated as only “B-” or “C” or “D” in abundance at Blackwood may well be far more common at higher elevations, or in localities further to the south, where more of the original flora still grows relatively undisturbed and in more extensive tracts.

Unfortunately, many introduced woody plants (several of them highly successful and aggressive) are naturalized and extremely abundant in the Blackwood-Belair district. Notable among these are the following, of which the first-named is perhaps the worst: Boneseed, *Chrysanthemoides monilifera* (L.) T. Norl. (Asteraceae); Canary Is. broom, *Genista* (*Cytisus*) *maderensis* (Webb & Berth.) Lowe (Fabaceae); furze, *Ulex europaeus* L. (Fabaceae); *Crataegus* sp., *Rosa* sp., and a blackberry, *Rubus* sp. (all Rosaceae); *Olea europea* L. (olive). *Chrysanthemoides monilifera* is steadily advancing into the undisturbed patches of smaller native plants and is smothering out all smaller species (and even including many well-established larger shrubs) as it advances. Unless the “experts” responsible for the fate of the one excellent small remnant

patch of native heath plants still growing a short distance south of Adelaide (centering about $\frac{3}{4}$ mi E of Belair Railway Station) suddenly develop foresight, and become motivated to take the physical action (*i.e.*, *work!*) necessary to eradicate the *C. monilifera* menace from that area (without harming the native plants), little will remain there worthy of preservation in another decade. *C. monilifera* is, incidentally, one of the *easiest* sizeable shrubs to pull up by hand that I have ever encountered. I pulled up hundreds in this locality (1966-69).

Of the naturalized weedy herbaceous plants, *Arctotheca calendula* (L.) Levyns (capeweed or cape dandelion) (Asteraceae) from S. Africa, and *Echium lycopsis* L. (known as "Salvation Jane" in S. Aust. and "Paterson's Curse" in W. Aust.) (Boraginaceae), are among the most abundant and conspicuous species growing in disturbed open places throughout the district. Other conspicuous weeds here are several S. African Liliaceae (bulbs), *Oxalis pes-caprae* L. (Soursob), *Plantago lanceolata* L., *Polygonum ?aviculare* L. (wireweed), and various introduced grasses.

Acknowledgments and Determinations: All names used in the list that follows were based on the associated adult moths (those bearing code-numbers on blue labels). Many of these moths have been matched with the type specimens. Sources of determinations used here (both entomological and botanical) are abbreviated as follows: BH = B. Hyland and A. Irvine of the Forestry Regional Research Station, Atherton, Queensland (N. Qld. plants); IC = I. F. B. Common of the Australian National Insect Collection, C.S.I.R.O., Canberra, A.C.T., helped with the majority of moths in this study (all families); MK = the late Mrs. M. Kenny of the South Australian Museum, Adelaide (S. Aust. plants); NM = the author (some specimens so designated were also submitted to specialists for verification); SF = D. S. Fletcher, and his assistant, Mrs. K. Smiles, of the Entomology Department, British Museum (Natural History), London (primarily geometrids and some miscellaneous moths); Fletcher also reviewed the manuscript in 1973 and offered helpful suggestions. WAH = various taxonomists of the Western Australian Herbarium, Jarrah Rd., South Perth (since 1968), and P. G. Wilson in particular (W. Aust. plants).

I am deeply indebted to D. S. Fletcher and I. F. B. Common for their frequent and generous assistance, since 1965, with numerous difficult moth determinations, sometimes involving the preparation of genitalic slides and thus the expenditure of much time on my behalf; without their help, publication of these records would have been very difficult. In the case of my own determinations (NM), they were obtained primarily from studying material in the extensive South Australian Museum moth

collection (Adelaide) while I was on the staff there, supplemented by careful examinations of other major collections in Melbourne, Sydney, Canberra, Brisbane, and London (BMNH only). My interpretation of moth families (and superfamilies) follows Common (1970: 782-83). Plant determinations (other than above-credited) were obtained primarily by careful keying in the floras available for the various regions at the time of this study (see References). Mr. T. R. Newbery (TN), of Murray Bridge, S. Aust., kindly provided a number of his foodplant records, which are included in the list; his companionship in the field, upon numerous occasions, will always be remembered with pleasure. Similar pleasant memories are also associated with past field trips in the company of Mr. K. J. Sandery (St. Agnes, S. Aust.), and the late Mr. and Mrs. J. O. Wilson of Glenelg (see McFarland, 1974). The Sandery and Wilson moth collections, while not large, contained many specimens of interest. The Wilson Collection has gone to the A.N.I.C. I would also like to thank my former landlady, Mrs. L. Henley, for her unflinching tolerance of my strange nocturnal pursuits in her back garden during my nearly 6 years of residence at 2 Gulfview Rd.; my wife, Dienie, for assisting at home and afield in various aspects of this work, for cheerfully sharing her home with hundreds of lepidopterous larvae during the first years of her marriage, and for expertly typing this manuscript. Appreciation must also be registered for her patience in coping with a grossly overloaded refrigerator, which was periodically choked with plastic bags containing larval foodplants!

Abbreviations & Symbols: acc. = accepted; det. = determined by; fl., fls. = flower(s); fr., frs. = fruit(s); "H." (before a date) implies the date of adult emergence from a pupa in captivity; lf. = leaf; lvs. = leaves; nr. = near; "orig. ♀" = the original female from which eggs were obtained in confinement; ± means more-or-less, about, or approximately; an asterisk (*) before the name of a plant (or moth) indicates that the species is introduced or not originally native to the locality named. For convenience and quick reference, all moths are arranged *alphabetically* from the family down. Australian states are abbreviated as follows in the list: QLD. = Queensland; N.S.W. = New South Wales; N. TERR. = Northern Territory; S. AUST. = South Australia; TAS. = Tasmania; VIC. = Victoria; W. AUST. = Western Australia.

Terminology for Adult Resting Positions: The following terms are used for the three major categories of resting positions commonly seen in adult Macrolepidoptera: (1) *tectiform* = the forewings held more-or-less roof-like over the abdomen, upper surfaces exposed, with the hindwings more or less completely hidden beneath (seen in many noctuids and arctids, etc.); (2) *planniform* = all wings more or less flatly ap-

pressed to the substrate, commonly with some degree of hindwing exposure (seen in numerous geometrids); (3) *veliform* = the typical butterfly position of "total rest," with all wings held erect over the dorsum, the upper surfaces tightly closed together, sail-like. The veliform position is also seen in a few geometrids such as the Australian oenochromine, *Hypographa aristarcha*, and the North American genera *Fernaldella* and *Stannodes*, etc. *Xanthorrhoe* and *Hydriomena* spp. also sometimes exhibit this position *temporarily* (when just landed), but usually revert to planniform later (when at "total rest"). Aside from a few geometrids, I know of no other Australian moths that use the veliform position.

The first term is well-known, but I have never seen the other two used before, so am proposing them here. There are numerous subtle variations on these three major themes, which can usually be adequately described and compared simply by indicating the degree of exposure of the hindwing; this can be expressed as a percentage. Any rolling or folding of wings or margins should also be noted, as well as any tendency to clasp a branch or twig with the forewings (for anchorage). Examples of the latter are often encountered in windy climates. Among others, Australian ennomine geometrids of the genera *Capusa*, *Lophothalaina*, and *Stathmorrhopa* have this clasping habit well developed. When at rest, *Capusa* spp. also partially fold the forewings fan-like, in a most peculiar and distinctive fashion, which causes them to appear much narrower distally than they actually are when the wings are spread.

THE LIST

NOTE: All plants **not** showing family names or author citations in the list below are discussed under **Vegetation** (pp. 9–11), where this information is given once in full for each of these common South Australian species.

AGARISTIDAE

● *Agarista agricola* (Don.) (det. MM)—As.12. N.QLD., nr. Ravenshoe, at Millstream Falls (J. Wrigley, collector): Larvae (May–June 1972) conspicuous on a vine, *Cissus* sp. (probably *C. opaca* FvM.); captive larvae accepted (as a substitute) another vine, *Cayratia ?clematidea* (F. Muell.) Dom.—both VITACEAE (dets. BH). Adults diurnal. See Common (1966b: 71-color; 1970: 863) for illus. of adult. (Preserved = 5, 9; photos = 5.)

● *Apina callisto* Walk. (det. NM)—As.8. SAUST., Adelaide, suburb of Walkerville, just NW of Kingston Tce. at Francis St., in the city parklands (NM, collector): Larvae (late July–early Sept.) extremely abundant only within the limits of a small and restricted "colony," in a large grassy-weedy field (paddock), feeding primarily on the S. African annual weed, Cape dandelion, **Arctotheca calendula*; a few larvae seen feeding on two other low-growing weeds, **Malva* sp.—MALVACEAE, and **Rumex* sp.—POLYGONACEAE; one larva seen feeding on a *grass—POACEAE (dets. NM). Larvae are diurnal feeders and need sun to elicit vigorous feeding.

Adults (B+) fly mid April–mid May (univoltine) and are strictly diurnal; flight mostly confined to very restricted areas of the general habitat. See Common (1966b: 121) for photos of larva and adult; McFarland (1970: 350 & 1972b: 227) for egg photos. (Preserved = 1–6, 8dd, 9; photos = 1, 2, 6.)

• *Comocrus behri* (Angas) (det. NM)—As.5 & 5A. (1) S.AUST., Blackwood-Belair district (NM): Larvae (Jan.–April) conspicuous (but widely-scattered) on the pendulous mistletoe, *Amyema miquelii* (det. NM), which is parasitic on many gum trees, *Eucalyptus* spp. Adults (B) fly late Nov.–March (peak Jan.); diurnal only. (2) S.AUST., ± 30 mi. S of Whyalla, at Murrinnie Beach (B. Flounders, collector): Larvae (April 1969) common on *Amyema melaleuca* (Lehm. ex Miq.) Tiegh., which was parasitizing *Melaleuca lanceolata* Otto—MYRTACEAE (dets. MK). For a discussion of diurnal hilltopping behavior in W. Australian adults of this sp., see McFarland (1976). See Common (1966b: 121) or Tillyard (1926: Pl. 36) for adult photos. (Preserved = 1, 5, 6, 9; photos = 5, 6.)

Cremnophora angasi Walk.—see Noctuidae.

• *Hecatesia exultans* Walk. (det. IC)—As.11A. W.AUST., 22–24 mi. ESE of Hyden, at roadside (D. & NM): Larvae (late Oct.) conspicuous, sunning and feeding on the young (red) growing tendrils of devil's twine or Australian "dodder," *Cassytha* sp., which was commonly parasitizing a shrubby *Casuarina* sp., as well as other plants in the area (dets. NM). Adults fly in spring and summer; peak of ♂ activity probably crepuscular; peak of ♀ activity probably evening and/or nocturnal. Sexual dimorphism is apparent. (Preserved = 1, 5, 6, 8d, 9.)

• *Hecatesia thyridion* Feisthamel (det. SF)—As.9 & 9A. (1) S.AUST., Mt. Lofty Range, Upper Sturt, nr. Ironbank Rd. (NM, TN, & P. Taverna): Larvae (Feb.–April) at rest and feeding (diurnally) on young tendrils of *Cassytha pubescens* and *C. glabella* (dets. MK), parasitic twiners on many shrubs in this locality. Adults (B, very local) fly Jan.–March; peak of ♂ activity probably crepuscular, after hot days; peak of ♀ activity probably nocturnal (occasional individuals of both sexes come to uv. light). There may also be a spring emergence (Oct.–Nov. ±). Sexual dimorphism is apparent. See Common (1966b: 123) for ♂ adult photo; Common (1970: Pl. 8, color) for ♂ adult of *H. fenestrata* Bdv. (Preserved = 1, 2, 5, 6, 8d; photos = 2, 5, 5c, 6.) (2) W.AUST., 13 mi. E of Tambellup, at roadside (NM & N. B. Tindale): One larva (21 Nov. 68) on young growth of *Cassytha* sp., which was parasitizing *Melaleuca uncinata* R. Br. ex Ait.—Myrtaceae (det. NM). (Preserved = 5, 9.)

• *Hecateia polysticta* (Butl.) (det. IC)—As.7. S.AUST., S coast of Kangaroo Island, 2½ mi. S of Mt. Taylor (± 10 mi. W of Vivonne Bay), on land of G. D. Seton (NM): Larvae (Dec.–Jan.) locally common on the dwarf shrub, *Hibbertia fasciculata* R. Br. ex DC. (det. MK). Adults (B) fly Oct.–Nov., diurnal only. See Common (1966b: 123) for adult photo. (Preserved = 1, 5, 6, 9; photos = 1.)

• *Phalaenoides glycine* Lew. (det. NM)—As.6. (1) S.AUST., Blackwood (NM): Larvae (Oct.–April) common on cultivated grape vines, **Vitis* spp.—VITACEAE; also several in garden (Nov. 69) feeding avidly on lvs. of an introduced Californian evening primrose, **Oenothera hookeri* T. & G.—ONAGRACEAE (dets. NM). (2) S.AUST., N of Penola (NM & D. Lee): Larvae (Dec. 64) on a small annual *Epilobium* sp.—ONAGRACEAE (det. NM), at the edge of a road. (Interestingly, this same contrasting combination of foodplant families, although involving various plant genera and species, is also known for some of the North American agaristids and sphingids.) Adults (B) fly mid Sept.–Mar. (peak Nov.–Jan.), diurnal only. See Common (1966b: 121) for adult photo; Common (1970: 858) for line drawings of larva and pupa. (Preserved = 1, 5, 6, 9; photos = 5, 6.)

• *Sarbanissa (Seudyra) bostrychonota* Tams—see Supplement on Fiji (following Zygaenidae).

ANTHELIDAE

• *Anthela denticulata* Newman (det. NM)—An.1. S.AUST., Adelaide and Blackwood districts (NM): Larvae (July–Sept.) locally common on various naturalized

and native grasses (esp. "soft" annual spp.)—POACEAE, in weedy pastures, vacant lots, along roadsides, or in comparable situations. The larvae are diurnal feeders and seek the sun. Adults (B) fly mid March–April, especially after 2300 hrs; univoltine. (Preserved = 1–7, 9; photos = 2.)

• *Anthela glauerti* Turner (det. IC)—An.19. W.AUST., ± 125 mi. S of Carnarvon, at the "Overlander Roadhouse" (D. & NM): Orig. ♀ (13 July 77) had come to lights the night before. Readily oviposited in a jar (on a muslin strip). Captive larvae (reared at Drummond Cove, W.Aust.) readily accepted *Acacia ligulata* (det. NM); new lvs. preferred. A second generation mating of this very small anthelid was obtained in captivity (Sept. 78), and some of these eggs were frozen for perfect specimens before hatching; 1977 eggs were preserved as empty (hatched) shells. (Preserved = ♂ ♀ 1, 2, 3–5?, 6, 7?.)

• *Anthela ocellata* (Walk.) (det. NM)—An.4. S.AUST., Adelaide city suburbs, in gardens and vacant lots, etc.: Larvae (Nov.–June) seen feeding on various naturalized annual grasses, and on mixed lawn grasses—POACEAE. Adults (B) fly spring–autumn. This sp. appears to be far more abundant in city gardens, parks, and other cultivated areas than it is in areas where the native flora predominates. See Common (1966b: 93) for ♂ adult photo. (Preserved = 1–7, 9; photos = 2.)

• *Anthela* sp. nov. (det. IC); close to *repleta* Warren (det. SF)—An.7 & 7A. (1) S.AUST., 5 mi. E of Two Wells, at roadside (NM & TN): Larvae (Aug.–Sept.) on *Cassia nemophila* Cunn. ex Vogel—CAESALPINIACEAE (det. MK). (Preserved = 1, 4–6.) (2) S.AUST., Blackwood-Belair district (NM): Larvae (Sept.–Oct.) rest in full view on young lvs. of golden wattle, *Acacia pycnantha* (det. NM). Adults (B) fly late April–July (peak June), often on very cold winter nights when little else is on the wing. ♂ & ♀ quite diff. in color (♀ usually much paler); univoltine. (Preserved = 1–7, 9; photos = 1, 2.)

• *Anthela* sp.; close to (but not) *guenei* Newman (det. IC)—An.11. S.AUST., at Kingoonya, approx. 400 mi. NW of Adelaide (M. McFarland, NM, & V. Lill): Larvae (late March) common on *Cassia nemophila* vars. and one other *Cassia* sp.—CAESALPINIACEAE (dets. NM); these plants were full of luxuriant new growth, in response to heavy rains several weeks earlier. Adults probably fly between Sept. and March, whenever rains break the pupal diapause during warm or hot weather (a desert locality, with variable and unpredictable rainfall). Reared specimens from this series are also in the K. D. Fairey & V. J. Robinson collections. (Preserved = 1, 5–7, 9.)

• *Anthela* sp., probably *xantharcha* Meyr. (det. NM)—An.12 & An.18. S.AUST., inland desert, 4½ mi. NNW of Coober Pedy, in a small, rocky, dry creek bed (M. McFarland, NM, & V. Lill): Several conspicuous masses of large opaque, pure white eggs (23 March 69) were found attached to lvs. in the tops of *Eremophila freelingii* FvM.—Myoporaceae (large bushes), almost certainly not one of its foodplants; a *Cassia* sp. (the probable foodplant) was growing nearby. Captive larvae (reared at Blackwood, S.Aust.) readily accepted young lvs. of *Acacia pycnantha* (dets. NM) and grew well. They entirely refused lvs. of a few *Myoporum* and *Eremophila* spp. offered to them, but *E. freelingii* was not among the samples. For notes on the early stages of a W. Australian *xantharcha* population, see Mills (1954). (Preserved = 1–7, 8h ex egg; photos = 2.)

• *Anthela* sp. (det. IC)—An.14. (1) N.QLD., ± 9 mi. W of Mareeba (J. Wrigley): Larva (3 June 72) on mature lvs. of a poisonous tree, Cooktown ironwood, *Erythrophloeum chlorostachys* (F. Muell.)—FABACEAE (det. BH). The resulting ♂ adult (H. 23 Sept. 72) and its cocoon and pupal shell are in the A.N.I.C. (Canberra). (Preserved = 1, 4, 6, 7, 9.) (2) N.QLD., 16 mi. SW of Conjuboy Homestead (± 2400' el.), N of Hughenden (D. & NM): Nearly fullgrown larva (21 June 72), identical to the above, at rest among mature lvs. of *E. chlorostachys*, ± 12 feet up in the tree. (Preserved = 5.)

• *Munychryia periclyta* Common & McFarland (1970) and *M. senicula* Walk. (det. IC)—"N."109. Larvae of both are feeders upon the foliage of various *Casuarina*

spp. and are described in detail (including life history photos of all stages of *M. senicula*) by Common & McFarland (1970). "N."109 refers only to *senicula* (in S. A. Museum). Adults of *senicula* (Belair district, S.AUST.) fly in spring-summer. See also Common (1970: 850) for ♂ adult photo. (*M. senicula* only: Preserved = 1-7, 9; photos = 1, 2, 4-7.)

● *Pterolocera* sp., close to *amplicornis* Walk. (det. NM)—An.6 & 6A. (1) S.AUST., Hallett Cove, coastal bluffs ± 10 mi. S of Adelaide (D. & NM & K. D. Fairey): Larvae (June-Aug.) extremely common locally, most often on (or very near) the ground, concentrated in suitable habitats, sunning and feeding (diurnal only) on low-growing plants, primarily on tender naturalized (annual) and tough wiry (perennial) native grasses—POACEAE; also seen feeding (occasionally) on the very tough-wiry lvs. of *Gahnia lanigera* (R. Br.) Benth.—CYPERACEAE (dets. NM). These larvae drink (dew or rain) copiously at times, and they also require plenty of fresh air, as well as sun (periodically); if any of these needs are totally ignored they will not thrive in captivity. Adults (♂♂ only) have a brief but concentrated flight in autumn (± April), when they search for the wingless ♀♀. Sexual dimorphism is spectacular. See Common (1966b: 241 or 1970: 850) for ♂ adult photo of *amplicornis*; McFarland (1970: 349 & 1972b: 223) for egg photos. (Preserved = 1, 2, 4-7, 8ddd, 9; photos = ♂ 1, 2, 5, ♂ ♀ 6, 7.) (2) S.AUST., S. coast of Kangaroo Is., at Seal Bay (NM, M. Pate, & G. D. Seton): Larvae (16 Oct. 66) abundant, wandering over the sand in association with larvae of my Ar.34A (Arctiidae), and the even more abundant Lp.12 (Lymantriidae); seen feeding (diurnal) on various small herbaceous spring ephemerals, as follows: *Crassula* sp.—CRASSULACEAE; *Daucus glochidiatus* (Labill.) Fisch., Mey., & Avé-Lall., and *Hydrocotyle* sp.—both APIACEAE; also one eating (perennial) **Poa bulbosa* L.—POACEAE (dets. MK). (Preserved = 1, 5, 6, 8d, 9.)

● *Pterolocera* sp. (det. IC)—An.2 & 2A. (1) S.AUST., Mt. Lofty Range, in Belair Nat. Park, just S of Sheoak Rd. (NM): Larvae (July-Oct.) feeding both at night and diurnally, on many unrelated plants, both woody shrubs and tough, wiry perennial bunch-grasses. Specific records: Older larvae (in this locality) seem to show a preference for nocturnal feeding on the tough, needle-like, sclerophyll old lvs. of *Hakea rostrata*; one seen feeding (mid Aug.; day) on *Casuarina striata* Macklin. (dets. MK). Adults (♂♂ only) have a brief but concentrated flight in autumn (mid March-April or May), when they search for the wingless ♀♀. Sexual dimorphism is spectacular. (Preserved = 4, 5, 9.) (2) S.AUST., Kangaroo Is., 2½ mi. S of Mt. Taylor (± 10 mi. W of Vivonne Bay), on land of G. D. Seton (NM): Larvae (mid Oct.) abundant, but widely-scattered throughout the native (sclerophyll) scrub of this locality; in daytime usually up in various bushes, not on the ground (unlike An.6 & An.6A); feeding both day and night on the tough, mature lvs. of their foodplants. Specific feeding records (based on field observations): *Casuarina striata* Macklin.; *Hakea ?muelleriana* Black; *Daviesia brevifolia* Lindl. and *Platylobium obtusangulum* Hook.—both FABACEAE; *Choretrum spicatum* FvM.—SANTALACEAE (dets. MK). Larvae brought back to Blackwood readily switched over to *Acacia pycnantha* as a substitute foodplant. (Sun not imperative for this species in captivity, but ample ventilation is desirable—also an occasional sprinkling.) See McFarland (1970: 349 & 1972b: 223) for egg photos. (Preserved = 1-7, 8h, 9; photos = ♀ 1, 2, ♂ ♀ 6.)

● *Pterolocera* sp. (det. IC)—An.10. W.AUST., Stirling Range, along roadside nr. Toolbrunup Peak, ± 200 mi. SE of Perth (NM & N. B. Tindale): Small larvae (19 Nov. 68) fairly common on young lvs. of (only) the low shrub, *Banksia sphaerocarpa* R. Br. (det. RR). Readily accepted young lvs. of *B. marginata* as a substitute foodplant, when taken 1200 mi. E to Blackwood; grew to full size, in excellent condition, on the latter. (No apparent urgent need for sun in captivity, but ample ventilation and a light sprinkling every day or two are desirable.) The adult ♀ is wingless; sexual dimorphism is spectacular. This sp. shows a kinship with my An.2, in the

general appearance of adults, the egg shape (profile), and the larval behavior, but it is easily separated and is probably a distinct species.

Mites: I have never seen any lepidopterous larvae more heavily mite-infested than were some of the younger individuals of this sp. when first collected! (See also remarks under Carthageidae.) These vivid red mites were later det. by Dr. R. V. Southcott (Adelaide) as *Charletonia feideri* Southcott, 1966 (ref. *Aust. J. Zool.* 14: 752) of the Erythraeidae, Sbf. Callidosomatinae, Tribe Charletoniini. (Preserved = 1-7, 8m, 9; photos = 2, 5.)

• *Pterolocera* sp. (det. NM)—An.20. W.AUST., Moresby Range, ± 19 mi. NNE of Geraldton, at Howatharra Hill Reserve, especially in Zones 5 and 10 (D. & NM): Larvae (Aug.-Oct.) abundant most years, usually seen feeding, sunning or at rest on grasses or sedges, esp. *Lepidosperma*. The short middorsal setae form a conspicuous pinkish-white line in this population; I have not as yet reared or collected any adults. These larvae are clearly distinct from An.10, but might prove to be a ssp. of An.6 or An.2. (None preserved at time of writing.)

General remarks on the foregoing Pterolocera spp.: These 4 incomplete determinations were included in the list because of the good differences in larval appearance, morphology, coloration, behavior, and foodplant preferences; also, the eggs are easily separated by differences in the coloration, maculation, and measurements (proportions). The ♂ adult moths, however, are of rather similar appearance, somewhat variable in coloration, and sometimes inclined to overlap in this variability; the species are very often mixed up in collection series. All four are univoltine.

ARCTIIDAE

(A) SUBFAMILY ARCTIINAE

• *Amsacta marginata* (Don.) (det. IC)—Ar.46. W.AUST., Northampton (NM): Larvae (July-Sept.) wandering rapidly over ground in open, grassy-weedy areas; on numerous low-growing, herbaceous plants, including **Arctotheca calendula* and **Echium lycopsis*, etc. (dets. NM). These larvae are fairly common here, but far less abundant than those of *S. glatignyi*, which occur in exactly the same places at the same season. The *Amsacta* larvae are quickly identified by their more rapid locomotion and less-dense setae; univoltine here, with adults emerging in autumn (±). See Common (1966b: 72, 111) for color illus. and photo (B. & W.) of adult. (Preserved = 1, 5, 6.)

Ardices—see *Spilosoma*.

• *Spilosoma canescens* Butl. (det. NM)—Ar.41. S.AUST., higher parts of the Mt. Lofty Range, Aldgate district (NM): Captive larvae (Jan.) readily accepted numerous offered plants (both herbaceous and woody). Three woody plants for which they showed a great liking were lvs. of ash, **Fraxinus* sp.—OLEACEAE; apple, **Malus* sp.—ROSACEAE; pine, **Pinus* sp.—PINACEAE (dets. NM). *Pinus*, in particular, was eaten avidly! Adults (local; B-) fly Nov.-Jan.; in 5 yrs. never recorded at Blackwood or other lower elevations near Adelaide. Probably univoltine. See Common (1970: 857) for adult photo. (Preserved = 1-4, 9.)

• *Spilosoma glatignyi* (LeGuill.) (det. IC)—Ar.34 & 34A. (1) S.AUST., Blackwood-Belair-Eden Hills (NM): Larvae (June-mid Oct.) exceedingly common most years, primarily on various low-growing herbaceous plants or shrubs, often becoming pests in gardens. Some of the "primary" foodplants: **Echium lycopsis*, **Genista maderensis*, *Pultenaea largiflorens* var. *latifolia*, **Arctotheca calendula*, **Chrysanthemoides monilifera*, *Olearia ramulosa*, and **Plantago lanceolata* (dets. MK). Of the above, the first two listed are perhaps the most important foodplants of this moth around Blackwood. In addition to the above-listed, I have seen them feeding on numerous other plants, both native and naturalized; univoltine. Adults (A+) fly mid Jan.-mid May (peak April); the majority come to uv. light mostly after 2300 hrs. See Common (1966b: 111) or Tillyard (1926: Pl. 33) for adult photo. (Pre-

served = 1, 4-6, 8dd, 9; photos = 1c, 6.) (2) S.AUST., S coast of Kangaroo Is., at Seal Bay (NM, M. Pate, & G. D. Seton): Fullgrown larvae (16 Oct. 66) crawling over the sand, in association with larvae of my An.6A (Anthelidae) and Lp.12 (Lymantriidae); seen eating the same herbaceous plants as listed for the latter.

● *Utetheisa lotrix* (Cram.) (det. NM)—Ar.36. N.TERR., 15 mi. S of Mataranka, at Warlock Ponds (NM): Larvae (9 April 66) on lvs. and floral parts of *Crotalaria trifolioliatum* Willd.—FABACEAE (det. NM). See Common (1966b: 111) for adult photo. (Preserved = 4-6, 9.)

● *Utetheisa pulchelloides* Hamps. (det. SF)—Ar.35, 35A, & 35B. (1) S.AUST., Blackwood and Eden Hills, on open & dry-grassy slopes (NM & J. Herridge): Larvae (9 Jan. 66) commonly feeding on floral parts of **Echium lycopsis* (det. NM). Adults (A+) fly Sept.—mid May (peaks Dec.—Feb. & April). (Preserved = 1, 4-6, 8d, 9.) (2) S.AUST., 4 mi. E of Two Wells, in dry, weedy-grassy paddocks and at roadsides (NM, TN, & G. Furness): Larvae (19 March 67) exceedingly common on potato weed, **Heliotropium europaeum* L.—BORAGINACEAE (det. MK). (3) S. AUST., Adelaide suburb of Heathpool (R. Edwards): Larvae (30 April 67) in a garden, defoliating the ornamental forget-me-not, **Myosotis* sp.—BORAGINACEAE (det. NM).

(B) SUBFAMILY LITHOSIINAE

● *Palaeosia bicosta* (Walk.) (det. SF)—Ar.43. S.AUST., Mt. Lofty Range, Belair Nat. Park, nr. Waverley Lodge (NM & D. Bakker): Larvae (13 Sept. 69) on stems or branches of various woody native shrubs, especially *Acacia pycnantha*, feeding on LICHENS (and other minute plant growths, probably algae) that grow on the often rain-wet stem surfaces in winter and early spring. See Common (1966b: 111) for adult photo. (Preserved = 1, 4-7.)

● *Scoliacma bicolora* (Bdv.) (det. NM)—Ar.37. S.AUST., Blackwood, Hannaford Rd. (NM): Larvae (July—early Oct.) on the open or bare ground of trails through thickets of *Acacia pycnantha* and *Eucalyptus odorata*, or on ± bare patches of firm ground, where they wander slowly over the winter-damp surface “grazing” on an abundant MOSS (!), *Pottia* sp.—POTTIACEAE (det. A. Mitchell). They are diurnal and especially *crepuscular* feeders, active on mild or warm days, either cloudy or sunny (if the sun is not intense or constant). Occasional individuals have also been seen eating one of the lichens, especially where these are growing on large rocks, in open but densely grass-covered paddocks (Belair district). But this common moss appears to be by far the primary foodplant around Blackwood. One larva (in captivity) was also seen eating an unidentified liverwort. Adults (B+) fly Oct.—Nov. (peak); again (B-) from Jan.—mid April. Individuals of the summer—autumn brood are generally of smaller size and less intense coloration. See Common (1966b: 72) or Tillyard (1926: Pl. 27) for adult in color; McFarland (1970: 350 & 1972b: 229) for egg photos. (Preserved = 1-7, 8dd, 9; photos = 1, 2, 5-7.)

Thallarcha—see *Xanthodule*.

● *Xanthodule ombrophanes* (Meyr.) (det. IC)—Ar.38. S.AUST., Blackwood-Belair districts (NM): Larvae (Sept.—March) on stems or branches of numerous woody plants, where they feed along the stem surfaces, probably on lichens and/or algae (exact food sources not positively identified). They are most often collected by searching over the branches of *Bursaria spinosa* and *Casuarina stricta*, or by beating *C. muelleriana* and *Exocarpos cupressiformis*; also generally encountered when beating most of the other medium-sized or larger native shrubs of this habitat. In no instance has a captive larva of this moth ever been observed feeding upon the leaves (or floral parts) of any of the numerous plants upon which they have been collected. The newly-hatched larvae have first instar dispersal behavior (see McFarland, 1973: 205-207). Adults (♂♂ only; B+) fly Oct.—June (peaks Oct.—Nov.; late Jan.—early Feb.; April—May), coming to uv. light esp. after 2300 hrs. Sexual dimorphism is stupendous! The flightless (brachypterous) ♀ waits on its cocoon

for arrival of the ♂ (as in N. American lymantriids: *Hemerocampa*); after mating, all its eggs are deposited, *without* any type of covering, on the cocoon surface. For adult ♀, cocoon, and egg photos of this sp., see McFarland (1970: 350 & 1972b: 229); also Common (1966b: 109) for larval photo of a related sp. (Preserved = ♂ ♀ 1, 2-7, 9; photos = ♂ ♀ 1, ♀ 1c, 2, 2c, ♀ 6c, 7, 7c.)

(C) SUBFAMILY NYCTEMERINAE

- *Nyctemera amica* (White) (det. IC)—Ar.39 & 39A. (1) S.AUST., Blackwood (NM): Larvae (especially summer) on the S. African herbaceous, perennial vine, Cape "ivy," **Senecio mikanioides* Otto ex Walp.—ASTERACEAE (det. NM). Adults (B) recorded for all months, with peaks in Jan.–March & May–June; both diurnal and nocturnal activity, coming to uv. light esp. after 2300 hrs. See Common (1966b: 113 or 1970: 857) for ♂ adult photo; McFarland (1970: 350 & 1972b: 229) for egg photos. (Preserved = 1-6, 8dh, 9; photos = 1 pair in cop., 2, 4-6.) (2) S. AUST., nr. tip of Yorke Peninsula, ± 2 mi. NW of Jim Brown's Well (NM, N. B. Tindale, & P. Aitken): Larvae (3 Nov. 65) on the native *Senecio* aff. *lautus* Forst. f. ex Willd. (det. MK). (Preserved = 5.)
- *Nyctemera baulus* (Bdv.)—see Supplement on Fiji (following Zygaenidae).
- *Nyctemera secundiana* Lucas (det. IC)—Ar.40A. N.QLD., Atherton Tableland, 12 mi. NE of Atherton, at Tinaroo Pines Caravan Park (± 2500') (D. & NM): Larvae (April–May 72) on the soft, rank-growing Asian weed, known as thick-head, **Crassocephalum crepidioides* (Benth.) J. Moore—ASTERACEAE (det. NM). Adults both diurnal and nocturnal. (Preserved = 1-6, 9.)

CARTHAEIDAE

- *Carthaea saturnioides* Walker (det. NM)—Ca.1, 1A, 1B, 1C, & 1D. (1) W. AUST., Stirling Range, along roadside, nr. Toolbrunup Peak, ± 200 mi. SE of Perth (NM & N. B. Tindale): Larvae abundant (19 Nov. 68), along with a few unhatched eggs, on young lvs. of the low sclerophyll shrub, *Banksia sphaerocarpa* R. Br. (det. WAH). None of the vivid red mites, found so abundantly on my An.10 (Anthelidae), were seen on these larvae, although they were often closely associated, on the same bushes, with the (less numerous) An.10 larvae. Adults in this locality probably fly from Oct.–early Dec.; one fairly worn ♂ was taken at uv. light betw. 0300–0400 hrs on 20 Nov. 68; although the light was running all night, none arrived before 0300 hrs; univoltine. Duplicate copies (8 pp.) of detailed field and larval behavioral notes on this superb moth were deposited in the Lepidoptera Section of the A.N.I.C. (1968). See Common (1966a; 1970: 850, 858) for illus. of adult, larva, & pupa; McFarland (1970: 349 & 1972b: 225) for egg photos. (Preserved = 2-4, 9; photos = 1, 1c, 2, 4, 4c, 5, 5c, 6.) (2) W.AUST., 1 mi. W of Needilup (NM & N. B. Tindale): Larvae, mostly last instar & penult. (22 Nov. 68), abundant on young lvs. of the tough-sclerophyll shrubs, *Dryandra cirsioides* Meisn. and (to a much lesser extent) *Banksia caleyi* R. Br.—both PROTEACEAE (dets. WAH); the former appears to be the primary foodplant in this locality. (Preserved = 1, 5, 6, 9; photos = 1, 1c, 5, 5c, 6.) (3) W.AUST., 10 mi. E of Jerramungup (NM & N. B. Tindale): One 1st instar larva (24 Nov. 68) found feeding on the brown-pubescent young lvs. of *Dryandra pteridifolia* R. Br. (det. WAH). (There was no *D. cirsioides* anywhere nearby.) (Preserved = 3.) (4) W.AUST., 49 mi. E of Ravensthorpe, 1 mi. W of Munglinup (NM & N. B. Tindale): Last instar larvae (24 Nov. 68) feeding on young lvs. of *D. pteridifolia* and on one other unidentified, low-growing *Dryandra* sp., close to (but smaller than) *pteridifolia*. (*D. cirsioides* was common here but no larvae, or their unmistakable pinkish frass, could be found on it during a 30 min search by both of us.) (5) W.AUST., 9 mi. S of Ravensthorpe, on road to Hope-toun (NM & N. B. Tindale); Two 3rd instar larvae found (25 Nov. 68), on two widely-separated individuals of the linear-leaved sclerophyll shrub, *Grevillea concinna*

R. Br. (det. WAH), eating young lvs. only. This plant was in bloom at the time (deep red fls.). *Dryandra cirsioides* was more abundant than *G. concinna* at this location, but no larvae, frass, or evidence of feeding could be located on the *D. cirsioides* bushes. (6) W.AUST., Moresby Ranges, Ooakajee-Howatharra-Nanson district, between 15–25 mi. NE of Geraldton; esp. in and nr. Howatharra Hill Reserve (McFarland, 1977: 19): Larvae fairly common some years (Sept.–mid Oct.) on tender new lvs. (only) of *Dryandra fraseri* R. Br. (det. WAH); this is a dense, low-growing, extremely sclerophyll sp. with very tough and prickly mature lvs.; it grows mostly on brown lateritic gravel. Adults probably fly from about mid Aug.–early Oct. here.

COCHYLIDAE (PHALONIIDAE)

• *Hyperxena* sp. (det. IC)—46(M). W.AUST., Moresby Range, Red Peak district, ± 13 mi. NE of Geraldton (D. & NM): Larvae (2 Aug. 73) extremely abundant on the small, pink fls. & fl. buds of the large shrub, *Scholtzia ?parviflora* F. Muell.—MYRTACEAE (det. NM). The habits and behavior of these larvae are strongly reminiscent of lycaenids, as is their general appearance at first glance. The maculation is a colorful blending of pink and white, which is superbly cryptic on the foodplant inflorescences. They usually rest tightly curled around the fls. and bud clusters, almost invisible if not moving, but are easily discovered by beating if present. Adults emerged mid June 74. (Preserved = 1, 4–7, 8h, 9.)

COSSIDAE

• *Ptilomacra senex* Walk. (det. NM)—Co.29(M). S.AUST., Mt. Lofty Range, in Belair Nat. Park nr. Sheoak Rd., 1 mi. E of Belair railway station; also around Montacute, and in other localities from NE to S of Adelaide (NM): Egg masses (mid Aug.–Nov.) often found attached to the stems of various low-growing plants or bushes, including the long lvs. of *Xanthorrhoea semiplana* FvM. (det. NM), which I strongly suspect is the Belair locality foodplant. (The larvae are presumably borers.) This highly-conspicuous egg mass could not be mistaken for any other; it is composed of large numbers of very large, grayish-black eggs, tightly glued to each other with a shiny adhesive, and usually deposited in long encircling-bands. Adult sexual dimorphism and first instar larval dispersal are notable in this species. See Common (1966b: 27) for ♂ adult photo. (Preserved = 2, 3.)

GEOMETRIDAE

Among the geometrids listed here (particularly ennomines), reference is frequently made to a "rain-hatching tendency" in the eggs of certain species, or to "first instar dispersal." These phenomena were described and discussed at some length earlier (McFarland, 1973: 203–206), so will not be repeated here. That paper was intended to directly follow a series of egg photographs published earlier (1972b), to which it frequently refers, but publication was unexpectedly delayed and several items were accidentally omitted after correction of the proofs; these are included as annotations in the list that follows.

(A) SUBFAMILY ENNOMINAE (SYNONYM = BOARMIINAE)

Amelora—see also *Diastictis* and *Loweria*.

• *Amelora crypsigramma* Lower (det. IC, NM). W.VIC., 5 mi. S of Kiata, Lowan Reserve (NM, collector): Larva (28 Sept. 67) on the woody shrub, *Baekkea behrii* (Schldl.) FvM.—MYRTACEAE (det. MK). Adult ♀ emerged 3 April 68. (Preserved = 1, 6.)

- *Amelora fucosa* Turner (det. IC)—G.183 & 183A. (1) S.AUST., nr. Port Wakefield, on top of Hummock Mt. in dense scrub (H. M. Cooper): Larvae (31 Aug. 67) on *Beyeria* sp.—EUPHORBIACEAE (det. NM). (Preserved = 5, 9; photos = 5.) (2) S.AUST., just W of Alawoona, at roadside (D. & NM): Larvae (late July 71) on the low, woody shrub, *Beyeria opaca* FvM.—(det. NM). 4 adults (all ♂♂) emerged late March—mid April 72; probably univoltine. Considerable variation is shown in forewing groundcolor, but not in maculation. (Preserved = 1, 4, 5, 6, 9; photos = 5.)
- *Amelora leucaniata* Gn. (det. SF)—G.171. S.AUST., Mt. Lofty Range, Blackwood (NM): Captive larvae (June–Aug.) readily accepted lush young lvs., buds, & fls. of the annual weed, **Polygonum aviculare* L.—POLYGONACEAE (det. NM); a preference was shown for the large-leaved, luxuriant young seedlings of this plant, which are well started (2" high ±) by early July. Adults (C) fly March–April; those reared in captivity emerged in Dec. (possibly not true to natural conditions here or possibly representing an early summer brood?) The eggs are rain-hatched. (Preserved = 1–6, 9; photos = 1, 2, 5, 5c, 6.)
- *Amelora macarta* Turner (det. IC)—G.151, 151A, 151B, & 151C (under *A. petrochroa* Guest and *A. poliophara* Turner, in some collections). (1) S.AUST., ± 8 mi. NE of Two Wells, at edge of sandhills (NM & TN): Larvae (20, 27 Aug. 66) only on the twining parasite, *Cassytha pubescens*, which was growing in shrubs of *Calytrix ? involucrata* J. M. Black (dets. MK). Four adults emerged April 67. (Preserved = 1, 4–6, 9; photos = 1, 5c.) (2) S.AUST., Mt. Lofty Range, Belair National Park, ¾–1 mi. E of Belair railway station (NM); also, 4 mi. S of Ashbourne (J. O. Wilson & NM): Larvae (July–Aug. 68) only on *Cassytha pubescens*, which was (in these localities) mostly parasitizing *Leptospermum myrsinoides*, *Casuarina muelleriana*, and *Olearia ramulosa* (dets. NM); also, in one instance, parasitizing *Exocarpos cupressiformis* and harbouring many larvae of *A. macarta*. The last instar larvae show various maculation-phases, one being very strongly marked with 9 or 10 dark, oblique dorso-lateral lines, and the others partially or even totally lacking these prominent marks; all forms were regularly encountered in Belair Nat. Park. Adults emerged March–April 69; univoltine. (Preserved = 1, 5, 6, 9; photos = 1, 5, 6.) (3) W.AUST., ± 16 mi. N of Geraldton, nr. Oakajee (D. & NM): 2 last instar larvae (28 July 72) on *Cassytha* sp., nr. *glabella* R. Br., which was parasitizing *Casuarina campestris* Diels. (dets. NM). Adults emerged mid–late April 73. This may represent a distinct subspecies. Also common at Drummond Cove, W. A.; larvae on *Cassytha* sp., nr. *pubescens* R. Br., during June and July. (G.151C: Preserved = 1–6, 9.)
- *Amelora milvaria* Gn. (det. IC, NM)—G.114. S.AUST., Blackwood-Belair district (NM): Larvae (July–Sept.) primarily on lvs. of *Pultenaea largiflorens* var. *latifolia*, young lvs. of *Acacia pycnantha*, and mature (tough) lvs. of *Leptospermum myrsinoides*; also (less often) seen feeding on young lvs. of *Acacia myrtifolia* (Sm.) Willd., fls. of *Hakea rugosa* R. Br., foliage of *Exocarpos cupressiformis*, lvs. of *Calytrix tetragona*, young lvs. of **Eucalyptus ficifolia* F. Muell. (in a garden), lvs. of *Olearia ramulosa*, and new lvs.-buds-fls. of **Chrysanthemoides monilifera* (dets. NM). Adults (A) fly mid March—early May. The eggs are rain-hatched. (Preserved = 1–6, 8h, 9; photos = 1, 5c.)
- ?*Amelora* sp. (det. NM)—S.AUST., Mt. Lofty Range, ± 4 mi. S of Ashbourne (J. O. Wilson): 2 larvae (23 Aug. 68) on the dense-shrubby *Casuarina muelleriana* (det. NM). Adults emerged 4 April (♂), and 6 April 69 (♀). This uncertain determination is included because of the very distinctive adults and the interesting foodplant record; it is hoped that more specimens may eventually be taken. The 2 reared adults are in the A.N.I.C., where the late J. O. Wilson placed his collection before he died in 1972. (Preserved = 1, 6; photos = 1.)

Angelia—see *Loweria*.

- *Boarmia cognata* Walk. (det. IC, SF)—G.91. S.AUST., Blackwood-Belair district (NM): Larvae (most months) common on foliage of the shrubby root-parasite, *Exocarpos cupressiformis* (det. NM). Adults (B+) recorded for every month (peaks in Dec.–Jan. & April). (Preserved = 1, 4–6, 8h, 9; photos = 1, 1c, 2, 5.)
- *Boarmia ?loxographa* Turner (det. SF, NM)—G.115. (1) S.AUST., Blackwood-Belair district (NM): Larvae (July–Oct.) on many native shrubs, including (particularly) *Pultenaea largiflorens* var. *latifolia* and *Bursaria spinosa* (dets. MK); also seen feeding on young lvs. of *Acacia pycnantha*, *Exocarpos cupressiformis*, *Olearia ramulosa*, and **Chrysanthemoides monilifera* (dets. MK). Adults (A) fly spring–autumn (peak March–April); sexual dimorphism is fairly pronounced. (Preserved = 1, 5, 6, 9; photos = 1, 2.) (2) S.AUST., Hallett Cove, on coastal bluffs S of Adelaide (NM): Larvae (July–Oct.) fairly common on the dominant low-woody shrub, *Beyeria leschenaultii* var. *latifolia* Grüning—EUPHORBIACEAE and the woody shrub, *Alyxia buxifolia* R. Br.—APOCYNACEAE (dets. MK). No adults were reared, so identification is not absolutely certain; these larvae appeared identical to those of the Blackwood population, however. (Preserved = 5, 8hh, 9; photos = 5.)
- *Boarmia penthearia* Gn. (det. NM)—G.211 (syn. = *rupicolor* Butl.). (1) S.AUST., Blackwood (NM): Captive larvae (March 70) readily accepted young phyllodes of *Acacia pycnantha* (det. NM). Adults (C) fly summer–autumn. First instar larval dispersal is notable in this species. (Preserved = 1–6, 9; photos = 1, 2.) (2) W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (NM): Larvae (spring–summer) on *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). Adults (B) fly most months.
- *Boarmia suasaria* Gn. (det. IC, SF)—G.78. S.AUST., Blackwood-Belair district (NM): Larvae (most months, with a peak in summer) on foliage of *only* the tree, *Casuarina stricta* (det. NM); never found on other (shrubby) *Casuarina* spp. frequently beaten in this locality. Adults (B+) fly Dec.–mid July (peaks Jan. & late March–April). First instar larval dispersal is notable in this species. (Preserved = 1–6, 9; photos = 1, 2, 5.)
- *Boarmia* sp. (det. NM)—G.215. S.AUST., 4 mi. E of Two Wells, Lewiston Park (NM & D. Bakker): Larvae (4 Sept. 69) on the tree, *Callitris preissii* Miq.—CUPRESSACEAE (det. MK). This incomplete determination is included because of the interesting foodplant record; the adult is distinct from all foregoing spp. (Preserved = 1, 5, 6.)
- “*Capusa*” *chionopleura* Turner (det. IC, NM)—G.230. (This unique moth is in no sense referable to *Capusa*, but apparently no other genus is available for it at present; *nor* does it show close kinship with either G.231 or 237.) W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Captive larvae (July–Aug. 72) readily accepted only the (orange) fls. and fl. buds of the leafless intricate shrub, *Daviesia divaricata* Benth.—FABACEAE (det. NM). Adults (D) fly June–July; more common inland, or further north in more arid localities; univoltine. (Preserved = 1–6, 9; photos = 1, 5, 5c, 6.)
- *Capusa senilis* Walk. (det. IC)—G.235. W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Captive larvae (July–Aug.) readily accepted phyllodes of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin); also one record (10 Sept. 76) of a healthy last instar feeding on lvs. of the edible garden pea, **Pisum*—FABACEAE. The latter had probably been on the pea vine all its life, as much evidence of past and recent feeding surrounded the area where it was at rest, and no other possible foodplant was growing anywhere nearby. It was collected and it continued to feed well (for several more days) on the pea leaves, until the pre-pupal wandering stage arrived. *A. ligulata* is undoubtedly the usual foodplant in this locality; new growth is preferred if available. These larvae (and the eggs) show much closer affinities with G.105 than with G.231 or 237; clearly, neither of the latter belong in the same genus with *senilis* and *stenophara*. Adults (B+) fly May–

July (peak late June–early July); univoltine. Regarding adult *Capusa* spp. resting position, see p. 13. (Preserved = 1–6, 9; photos = 1, 5, 5c.)

● *Capusa stenophara* Turner (det. IC)—G.105. (This is a synonym of *cuculloides* Felder according to evidence from genitalic slides prepared and studied by SF, April 71.) (1) S.AUST., Blackwood (NM): Captive larvae (Aug.–Sept.) readily accepted young lvs. of *Eucalyptus odorata*; larvae (in the field) often found on young lvs., fl. buds, and fls. of *Acacia pycnantha*, as well as *Eucalyptus odorata* (dets. NM). Adults (B) fly late May–July (peak mid June); activity primarily from dusk to \pm 2100 hrs (rarely later), often on cold (38–45°F) and clear nights when almost nothing else is on the wing; univoltine. First instar larval dispersal is notable in this species. See McFarland (1972b: 239) for egg photos. (Preserved = 1–6, 9; photos = 1, 2, 5, 5c, 6.) (2) S.AUST., Happy Valley and Aldinga scrub, S of Adelaide (Mr. and Mrs. J. O. Wilson): Larvae (Aug.–Sept. 67) on fl. buds & fls. of *Acacia pycnantha* (det. NM). (3) W.VIC., 5 mi. S of Kiata, Lowan Reserve (NM): Young larvae (28 Sept. 67), of an unidentified *Capusa* sp., beaten from the upright woody shrub, *Melaleuca uncinata* R. Br. ex Ait., in close assoc. with *Baeckea behrii* (Schldl.) FvM.—both MYRTACEAE (dets. MK); the circumstances indicated the former as the probable plant from which these larvae fell.

● “*Capusa*” sp. (det. NM)—G.231 & 231A. (This moth is probably undescribed; it is fairly near *Capusa*, but clearly belongs in another genus; the larvae show closer affinities with G.237 than with typical *Capusa* larvae.) (1) W.AUST., SE of Onslow, at Nanutarra (D. & NM): Original ♀ moth collected at light; eggs obtained. Captive larvae (July–Aug. 72) reared at Drummond Cove, W.AUST., where they readily accepted young phyllodes of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). (Preserved = 1–6, 9.) (2) W.AUST., Drummond Cove, \pm 7 mi. N of Geraldton (D. & NM): Captive larvae (June–July) readily accepted young phyllodes of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). Adults (A) fly late May–early Aug. (peak late June–early July); univoltine. (Preserved = 1–6, 9; photos = 1, 5, 5c.)

● “*Capusa*” sp. (det. NM)—G.237. (This distinctive moth is probably undescribed; it is fairly near *Capusa*, but clearly belongs in another genus; the larvae show closer affinities with G.231 than with typical *Capusa* larvae.) W.AUST., Drummond Cove, \pm 7 mi. N of Geraldton (D. & NM): Captive larvae (mid July–mid Sept.) readily accepted fl. buds & fls. (only) of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin); these larvae are clearly adapted, both in behavior and coloration, specifically to blossom-feeding on acacias. Adults (B-) fly June–July (peak late June). (Preserved = 1–6, 9; photos = 1, 5, 5c.)

● *Casbia lithodora* Meyr. (det. SF, NM)—G.160. (1) S.AUST., Yorke Peninsula, \pm 2 mi. S of Kainton (NM, N. B. Tindale, & P. Aitken): Single larva (4 Nov. 65) on the open-airy shrub, *Pomaderris paniculosa* FvM. ex Reisseck—RHAMNACEAE (det. MK), along with many larvae of G.131; adult ♀ emerged Dec. 65. (Preserved = 1, 6.) (2) S.AUST., at base of Black Hill, Athelstone (Addison Ave.), E of Adelaide (NM & TN): Larvae (22 Oct. 66) common on young and mature lvs. of the woody dwarf shrub, *Cryptandra tomentosa* Lindl.—RHAMNACEAE (det. MK). Adults fly late spring–summer; they are easily alarmed to flight in the daytime (observation of TN, 15 Jan. 67), but are probably not truly diurnal. (Preserved = 1, 4–7, 8h, 9; photos = 1, 5c.) (3) W.AUST., 5 mi. N of Geraldton (Glenfield district), Beatie Rd., Lot 131, in an *Acacia-Banksia* association (D. & NM): One larva (mid Nov. 72) on *Cryptandra* sp. (det. NM); died in last instar (not preserved), but identical to well-marked larvae of the Black Hill population. (SF, in a letter of 8 July 1971, stated that there are “several from Geraldton and one from Perth” in the B.M.(N.H.) series of adult specimens.)

● *Casbia ?rhodina* Turner (det. IC)—G.131. S.AUST., Yorke Pen., \pm 2 mi. S of Kainton (NM, N. B. Tindale, & P. Aitken): Larvae (4 Nov. 65) fairly common on *Pomaderris paniculosa* FvM. ex Reisseck—RHAMNACEAE (det. MK); they match

to perfection (in color and maculation) the undersides of the foodplant lvs. Adults emerged late spring-summer. (Preserved = 1, 5-7, 8h, 9.)

Ceratucha—see *Ciampa*.

"*Chlenias*"—see also *Ciampa* and "Miscellaneous Unidentified Ennominae" at end of this subfamily.

● "*Chlenias*" *melanoxyta* Meyr. (det. IC & NM)—G.221 (The type-specimen is *Chlenias melanoxyta* Meyr., in the S. Aust. Museum; an apparent synonym is the oenochromine, *Cycloprorodes apalama* Turner. Clearly, *melanoxyta* does not belong in *Chlenias*.) S.AUST., Belair, at 129 Gloucester Ave.; rarely taken at Blackwood; probably more common between Kalyra Rd. and Windy Point, where *Dodonaea* is abundant (?) (D. & NM): Captive larvae (June-July 71) readily accepted lvs. of (only) *Dodonaea viscosa* (det. NM), esp. the new growth. These larvae are difficult to rear, needing abundant daily moisture combined with excellent ventilation and low temperatures. They show not the remotest kinship with *Chlenias* larvae. Adults (C) fly only mid May-mid June (peak late May); univoltine. The eggs seem to be on the borderline of a rain-hatching tendency. (Preserved = 1-4, 6, 9; photos = 1, 1c, 2, 5.)

● *Chlenias* ?*pachymela* Lower (det. NM)—G.106 & 106A. S.AUST., Blackwood-Belair district (NM): Larvae (July-Oct.) on a wide range of native and introduced woody plants, some specific examples being: *Bursaria spinosa*, *Dodonaea viscosa*, young lvs. of *Acacia pycnantha*, *Pultenaea largiflorens* var. *latifolia*; one record on a plum tree, **Prunus* sp., and one on young lvs. of loquat, **Eriobotrya* sp.—both ROASACEAE; and one feeding well on fl. buds of **Camellia* sp.—THEACEAE (dets. NM). Of the native flora in this locality, the first 3 plants listed appear to be preferred, particularly *Bursaria*. These larvae always have a distinctive raspberry-red blotch (which fades out completely in alcohol) near the base of the A6 proleg; the head is notably bulbous, light golden-brown, and only faintly-marked. Disturbed fullgrown larvae are usually reluctant to release hold or drop; if dropping, usually on a tough silk thread. Adults (B+) fly mid May-July, and are the largest (and "heaviest") of the *Chlenias* spp. in this locality; univoltine. The eggs are rain-hatched. (Preserved = 1-7, 9; photos = 1.)

● "*Chlenias*" *rhynchophora* Lower (det. SF, NM)—G.127 & 127A. (The ♀ type specimen is *Chlenias rhynchophora* Lower, in the S.Aust. Museum. This moth clearly has no kinship with *Chlenias*; it appears to belong in the genus *Rhynchopsota*.) S.AUST., Belair Nat. Park, 1 mi. E of Belair railway station; also the Eden Hills-Blackwood district (NM & TN; G. Furness): In the first locality larvae (Oct.-early March) are mostly on the locally-abundant shrub, *Casuarina muelleriana*, but also on the tree, *C. stricta* (dets. MK). In the two latter localities, they are mostly on *C. stricta*, as *C. muelleriana* is extremely rare here. There is a major population of this sp. below 5 Yalanda St., Eden Hills. In common with a number of Australian oenochromine genera (many *Dichromodes* spp., *Monoctenia*, and *Phallaria* are examples), the larval growth-rate in *rhynchophora* is very slow under natural conditions; interestingly, they are on the plants throughout the hottest and driest months of the year (Nov.-March), a time when most univoltine spp. are in pupal diapause here. The eggs take 6-7 weeks to hatch, and the larval stage lasts a full 8 months (about mid July-mid March)! This is altogether an aberrant species in several respects. The larvae (also the eggs and pupae) show no affinities with *Chlenias* spp., but do appear to be fairly close to the *Dichromodes* larval type with regard to general appearance, profile, growth-rate, habits, and behavior. Adults (A, nr. 5 Yalanda St., Eden Hills; B±, in most parts of Blackwood) fly mid May-mid July (peak only late May-mid June); univoltine. See McFarland (1972b: 237) for egg photo. (Preserved = 1-6, 9; photos = 1, 2, 4-6.)

● *Chlenias seminigra* Rosenstock (det. NM)—(G.220 ?). S.AUST., Mt. Lofty Range, Aldgate (Heather Rd.) (NM & D. Bakker): (a) Mature larva coll. by K. Sandery (Sept. 70) on the parasitic twiner, *Cassytha* sp. (det. K. Sandery); ♂ adult emerged 1 June 71. (b) Mature larva (13 Sept. 69) on fl. buds and fls.

of the dwarf shrub, *Dillwynia hispida* (det. NM). I suspect that the single larva collected by Sandery (a), which I never saw, and my single larva (b), for which no adult was reared, are one and the same species. The fullgrown larva (b), my G.220, is deposited in the S. Aust. Museum, and the reared adult (a) is in the K. J. Sandery collection. The G.220 larva shows strong affinities with my G.111, but is somewhat larger and is more extensively and colorfully-marked. These incomplete records are included because of the apparent rarity (or very localized occurrence) of *C. seminigra* in this part of South Australia. The dark brown to sooty-tinged adult is quite unlike any other *Chlenias* here discussed. Probably univoltine. (Preserved = ♂1, (5?), 6; photos = ♂1.)

• *Chlenias* sp., near *stenosticha* Turner (det. IC, NM)—G.111, 111A, & 239. (1) S.AUST., Blackwood-Belair district (NM): Larvae conspicuous (July–Sept.) on fl. buds, fls., and young growth of various native woody shrubs, esp. *Cryptandra tomentosa* Lindl.—RHAMNACEAE and *Grevillea lavandulacea*; sometimes on buds of *Dillwynia hispida* and young lvs. of *Calytrix tetragona* (dets. MK). These larvae appear to be primarily bud and flower feeders in this locality, if allowed their preference. Very colorful: among the distinctive markings are two intense reddish-brown lateral spots, one each on T2 and T3, just above the broad and prominent yellow-cream spiracular line, which extends the full length of the body. Fullgrown larvae are quick to curl up and fall free (never on a silk thread) if disturbed. Adults (B-) fly April–May (univoltine); they are rather frail when compared to other *Chlenias* spp. occurring here, and are the smallest sp. around Blackwood; although uncommon at my lights, the larvae of this sp. were more frequently encountered here (1965–1970) than were those of G.112. (Preserved = 1–6, 9; photos = 1, 5.) (2) S.AUST., nr. Hallett Cove railway station (NM): 2 small larvae (6 Aug. 67) on fl. buds and fls. of *Acacia rotundifolia* Hook. (det. NM). (3) W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Captive larvae (June–early Aug. 73) readily accepted new and semi-mature phyllodes of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). Growth was rapid and disease-free on this plant. Although initially code-numbered G.239, it became evident by last instar that these larvae merely represented a western population of my South Australian G.111 material. (Preserved = 1–6, 9.) (4) W.AUST., in Spalding Park, Bluff Point district, N of Geraldton (D. & NM): Larvae (July, 1973) on fls. and new lvs. of *Grevillea pinaster* Meisn. (det. WAH). (Preserved = 5.)

• *Chlenias* ?*umbraticaria* Gn. (det. SF, NM)—G.112. (1) S.AUST., Blackwood-Belair district (NM): Larvae conspicuous (July–Sept.) on fl. buds, fls., and young growth of various native woody shrubs, quite often in association with larvae of the foregoing sp. (G.111). Favoured foodplants here are fls. of *Hakea rostrata* and fls. of *Cryptandra tomentosa* Lindl.—RHAMNACEAE; also (less often) on fls. of *Grevillea lavandulacea*, fls. of *Pultenaea largiflorens* var. *latifolia*, or on *Cassyltha pubescens* (dets. MK). Fullgrown larvae of this moth are similar, in both habits and behavior, to those of G.111, but are entirely different in details of color-maculation; they are also “heavier” (more massive) in the whole body. Very colorful: some of the distinctive marking are about 10 well-separated brick-red (or orange-brown) elongate lateral marks, one per segment, on the white spiracular line (from T2–A8); dorsum and sides (above spiracular line) entirely without other major stripes, the whole area being reticulate-speckled in a pattern of dark gray-brown rings, surrounding whitish dots, which creates an overall effect of being heavily and uniformly “salted” on a dark background. Adults (B) fly late March–April (univoltine); they are quite unlike any of the other *Chlenias* spp. here listed, and (atypically for this genus) show only minor individual variation in color and maculation. The eggs are rain-hatched. (Preserved = 1–6, 8h, 9; photos = 1, 2, 5, 5c, 6.) (2) W.AUST., ± 5 mi. N of Geraldton (Glenfield dist.), along Beatie Rd. (D. & NM): One larva (20 July 73), of what is almost certainly this sp., found among low shrubs at roadside, resting in full view, head downward; foodplant unidentified. (Preserved = 5.)

- *Chlenias* sp. nov., near *banksiaria* LeGuill. (det. SF)—G.103, 103A & 103B. S. AUST., Blackwood-Belair district and Hallett Cove (NM): Larvae (June–Sept.) on several native woody shrubs; by far the preferred foodplant (of the Blackwood population) appears to be *Olearia ramulosa*, which bushes they nearly defoliated in some years during the winter (along Hannaford Rd.); they were often abundant on both *Dodonaea viscosa* and *O. ramulosa* at Windy Point (Belair); along Gloucester Ave. (Belair), and in parts of Blackwood, they were sometimes common on *Bursaria spinosa*; occasionally also on **Chrysanthemoides monilifera* and **Genista maderensis* (dets. NM). At Hallett Cove, I found them only on *Olearia ramulosa* (fairly common, but never in the great numbers sometimes seen at Blackwood). Although colorful, they blend in fairly well with the “intricate confusion” of shadows and thin (linear) *O. ramulosa* lvs.; the overall pattern on the larva (dorsolaterally) is of many fine parallel lines of black, white, and yellow to orange. The single strong middorsal line is pale to deep orange in living larvae of this species, and on that alone it is separated from all other *Chlenias* spp. listed here, except G.188. (Head notably less bulbous than in G.188 or G.106, and strongly-marked with dark brown longitudinal lines on a pale pinkish-tan ground color.) Disturbed fullgrown larvae are quick to curl inward; if dropping from the plant they fall free, never on a silk thread. Adults (A) fly March–July (peak June); univoltine. (Preserved = 1–6, 8hh, 9; photos = 1, 5, 5c, 6.)
- *Chlenias* sp. nov. (det. SF)—G.120. S.AUST., Blackwood (NM): Larvae scarce (Sept. 65) on *Pultenaea largiflorens* var. *latifolia* (only); readily accepted young lvs. of *Acacia pycnantha* as a substitute (dets. NM): These *Chlenias* larvae show a confusing mixture of the characteristics of my G.106 and G.103, with respect to color, maculation, morphology, and behavior. The few adults seen were hard to separate from G.106, but slightly smaller. Could this be a natural hybrid of G.103 × G.106? (Preserved = 1, 5, 6, 9.)
- *Chlenias* sp. nov. (det. SF)—G.148. S.AUST., ± 8 mi. NE of Two Wells, at edges of sandhills (NM & TN): Larvae (20 Aug. 66) abundant on oldman saltbush, *Rhagodia parabolica* R. Br.—CHENOPODIACEAE (det. MK) which is apparently the preferred foodplant of this population; also encountered, in far lower numbers on a few other unrelated native woody plants in this and nearby localities. In general appearance, maculation, and behavior, these larvae show strong affinities with my G.103, but are easily separated and almost certainly another species (or a subspecies at the least). Two adults emerged: 9 May 67 (♂) and 13 May 67 (♀); probably univoltine. (Preserved = 1, 4, 5, 6, 9; photos = 1.)
- *Chlenias* sp. nov. (det. SF)—G.188 & 188A. (1) W.VIC., 5 mi. S of Kiata, Lowan Reserve, nr. the designated camping area (NM): Larvae (28 Sept. 67) on the woody shrub, *Baeckea behrii* (Schldl.) FvM.—MYRTACEAE (det. MK). These larvae are very colorful and fairly conspicuous on the foodplants; general appearance (build), bulbous head, and behavior show affinities with my G.106. All colors and markings on these larvae are gaudy, rich, and intense—more so than in any of the other *Chlenias* larvae here listed (with the possible exceptions of G.111 and G.220, which look nothing like this one). Two distinctive features: the true legs are vivid reddish-purple, and there are 6 black dots in a semi-circle directly behind the head (cervical area). (Preserved = 5, 8h, 9.) (2) S.AUST., 1.2 mi. S of Monarto South railway crossing, ± 10 mi. W of Murray Bridge (NM & TN): Larvae fairly common (8 Oct. 67) on *Baeckea behrii* (det. NM). Two ♂ adults emerged: 19, 21 May 68; probably univoltine. (Preserved = ♂ 1, 6, 9; photos = 1 ♂.)
- *Chlenias* sp. (det. NM)—G.206 & 206A. (1) W.AUST., 13 mi. E of Tambellup (NM & N. B. Tindale): Larvae (21 Nov. 68) on a woody shrub, *Melaleuca uncinata* R. Br. ex Ait.—MYRTACEAE (det. NM). (Preserved = 5, 6.) (2) W.AUST., at Wave Rock, nr. Hyden (D. & NM): Larvae (28 Oct. 71) common on a tall *Leptospermum* sp. (det. NM); the foodplant was growing abundantly around the parking area (nr. base of Wave Rock) and was in bloom on this date (petals pinkish-tinged white). These larvae show affinities with my G.106, and even more

with G.188, but are quite distinct. Pupae were obtained but all died later; no adults have been seen thus far, but the distinctive larvae are clearly different from all the foregoing spp. and warrant mention here. Probably univoltine.

General remarks on the foregoing *Chlenias* spp. (with the exception of G.127 and G.221, which probably belong in the Oenochrominae): The several incomplete determinations are included here primarily because of the excellent and consistent larval differences and the diverse (but sometimes specific) foodplant preferences; these records could be of great immediate assistance to future workers attempting to study this difficult genus. It took me 5 years and countless field-trips to gather the information here recorded, all of which is documented by extensive notes, preserved larvae and pupae, and the associated reared adults; these have been deposited in the institutions listed in the Introduction. The adults are (in most of the spp.) of rather similar appearance, somewhat variable, and often tend to overlap in certain features of the maculation. They are regularly and thoroughly mixed up in most collections!

Most *Chlenias* larvae make little or no attempt to hide by day and are not cryptically-colored—thus usually conspicuous on their foodplants. Good differences (and affinities) can be seen in the larval head capsules of the various species. Eggs were not obtained from 5 of the above spp., so little can be said here of their comparative or taxonomic value. The eggs would certainly warrant close examination in any future study of this complex and fascinating genus, which is so well-represented across southern Australia.

• *Ciampa arietaria* (Gn.) (det. IC)—G.93. (1) S.AUST., Adelaide city suburbs; also Blackwood-Belair district (NM): The rather noctuiform larvae (June–Aug.) are often locally abundant on the weedy South African annual, **Arctotheca calendula* (det. NM). It would be interesting to know what was the primary foodplant here prior to the introduction of the now exceedingly abundant Cape weed; this moth may have been considerably less abundant long ago. Adults (A+) fly mid March–early June; univoltine. The eggs are rain-hatched. See Common (1966b: 81 and 1970: 844) for ♂ adult photos. (Preserved = 1–6, 9; photos = 1, 2, 5.) (2) W. AUST., Moresby Range, Howatharra Hill Reserve, ± 19 mi. NNE of Geraldton (see McFarland, 1977): One last instar larva (26 Aug. 78) feeding on inflorescence of **Zaluzianskya divaricata* (Thunb.) Walp.—SCROPHULARIACEAE (det. NM), at edge of paddock S of Zone 4 (NM & Lisa Green). This sp. also comes commonly to uv. light at Drummond Cove, ± 7 mi. N of Geraldton, W. Aust., (± mid April–July).

• *Cleora bitaeniaria* (LeGuillou) (det. IC)—G.86. S.AUST., Blackwood (NM): Captive larvae (April–May) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM); larvae are probably present on eucalypts during most months of the year in this locality. Adults (B+) recorded for every month (peaks Sept., Dec., & Feb.–June). See McFarland (1972b: 239, 245) for egg photos. (Preserved = 1–6, 9; photos = 1, 1c, 2, 5, 6.)

• *Cleora displicata* Walk. (det. SF)—G.165. (1) S.AUST., Blackwood (NM): Captive larvae (March) readily accepted young lvs. of *Acacia pycnantha* (det. NM). Adults (B) fly Oct.–April (peak Jan.–March). First instar larval dispersal is notable in this species. See McFarland (1972b: 239) for egg photos. (Preserved = 1–6, 9; photos = 1, 2, 6.) (2) S.AUST., 4 & 5 mi. E of Two Wells, at Lewiston Park and along roadside (NM & TN): Larvae (19 March 67), of what is probably this sp., fairly common on *Acacia salicina* Lindl., *A. ligulata* A. Cunn. ex Benth. and *Cassia nemophila* Cunn. ex Vogel—MIMOSACEAE & CAESALPINIACEAE (dets. MK).

• "*Cleora*" *repetita* Butl. (det. IC)—N.QLD., 14 mi. N of Cairns, at Clifton Beach (D. & NM): Larva (9 May 72) on buds, fls., and lvs. of the shrub, *Fenzlia obtusa* Endl.—MYRTACEAE (det. BH). The adult (a large ♀) emerged 19 June 72; deposited in A.N.I.C., Canberra. (Preserved = 1, 6.)

• *Corula geometroides* Walk. (det. SF)—G.170 & 170A. (1) S.AUST., ± 4 mi. E of Two Wells, Lewiston Park (NM & TN; NM & C. N. Smithers): Larvae (19 March

67; 4 May 67; Sept.–Oct. 69) on native "pine," *Callitris preissii* Miq.—CUPRESSACEAE (det. MK); regularly obtained by beating. Probably multiple-brooded; some adults emerged Jan.–Feb. 1970. (Preserved = 1, 4–6, 9; photos = 1, 5, 6.) (2) VIC., Grampians Mts., S of Hall's Gap, at Mirrantawa Gap (NM & E. C. Jaeger): Larvae (26 Sept. 67) on *Callitris rhomboidea* R. Br. ex Rich. (det. MK). (Preserved = 5, 8h.)

Criomacha—see *Fisera*.

• "*Diastictis*" *goniota* Lower (det. NM)—G.214. S.AUST., Hallett Cove, S of Adelaide (D. & NM): Larvae (2 June 71) abundant on the woody, perennial vine (not a parasite), *Muehlenbeckia gunnii* (Hook. f.) Walp.—POLYGONACEAE, which was growing in tangles over shrubs of *Olearia axillaris* (DC.) FvM (dets. NM), just back from the beach. This tentative record has yet to be positively verified by reared adults, but is probably correct; it is included here because of the distinctive foodplant which might provide a useful clue toward further investigations of this moth. The generic placement is doubtful, but the type of *goniota* is in the S. Aust. Museum (Adelaide). Adults fly (?) July–Sept.; probably univoltine. (Preserved = 1–5, 9; photos = 1.)

• *Didymoctenia exsuperata* Walk. (det. SF)—G.122. S.AUST., Blackwood (NM): Captive larvae (Sept.–Oct.) readily accepted young lvs. of *Eucalyptus odorata* (det. NM); larvae are probably present on young lvs. of eucalypts during most months of the year in this locality. Adults (A) fly Sept.–July (peaks Oct.–Dec. & May–June) with by far the majority coming to uv. light only after 2300 hrs. (Preserved = 1–7, 9; photos = 1, 2.)

• *Ectropis excursaria* (Gn.) (det. IC, SF)—G.75, 75A, 75B, & 75C. (1) S.AUST., N Adelaide city parklands (NM): Larvae (Jan.–Feb. 65) common on tender young sucker-growth at the base of an old pepper tree, *Schinus molle* L.—ANACARDIACEAE (det. NM). (2) S.AUST., Belair (F. J. Mitchell): Larvae (Aug.–Oct.) abundant on young and semi-mature lvs. of the perennial native vine, *Hardenbergia violacea* (det. NM); almost defoliating this plant which was being grown against a garden wall. (3) S.AUST., Blackwood-Belair-Eden Hills district (NM): Larvae (spring–autumn) on numerous unrelated woody and herbaceous plants (both native and introduced). Some specific records: In gardens on an ornamental ivy, *Hedera* sp.—ARALIACEAE; *Pelargonium* sp.—GERANIACEAE; orange tree (young lvs. of sucker-growth), *Citrus*—RUTACEAE; *Polygonum aviculare* L.—POLYGONACEAE; young lvs. of *Eucalyptus cladocalyx* FvM.; also (in the natural scrub) often on *Pultenaea largiflorens* var. *latifolia*, new lvs. of *Acacia pycnantha*, *Exocarpos cupressiformis*, *Bursaria spinosa*, and etc. (dets. NM). Adults (B+) fly all months (peaks Sept.–Oct., April–June); sexual dimorphism is evident. First instar larval dispersal is notable in this species. (Preserved = 1, 2, 5, 6, 8h, 9; photos = 1, 2, 5, 6.) (4) S.AUST., 5 mi. E of Two Wells, along roadside (NM & TN): Larvae (19 March 67) fairly common on *Acacia ligulata* A. Cunn. ex Benth. and *Cassia nemophila* Cunn. ex Vogel—MIMOSACEAE & CAESALPINIACEAE (dets. MK). (5) W.AUST., Perth, in the California Section of the Botanic Gardens at King's Park (D. & NM): Larvae (16 Oct. 72), probably of this sp., feeding (and thriving) on California sagebrush, *Artemisia californica* Less.—ASTERACEAE and also on deerweed, *Lotus scoparius* (Nutt. in T. & G.) Ottley—FABACEAE (dets. NM); both of these plants are abundant natives in the sage scrub and chaparral (evergreen sclerophyll) associations of southern California, at lower elevations near the coast.

• *Ectropis odontocrossa* Turner (det. NM)—G.153. S.AUST., ± 8 mi. NE of Two Wells, on white sandhills (NM & TN): Larvae (27 Aug. 66) common on the woody shrubs, *Bertya mitchellii* (Sond.) Arg.—EUPHORBIACEAE and *Dodonaea bursariifolia* FvM. (dets. MK), but not found on any other shrubs beaten in this habitat. A ♂ adult emerged 9 June 67. (Preserved = 1, 4–6, 9; photos = 1, 5c.)

• *Ectropis pristis* Meyr. (det. NM)—W.VIC., 5 mi. S of Kiata, at the Lowan Reserve (Sanctuary), nr. the designated camping area (NM): Larvae (28 Sept. 67)

on *Baeckea behrii* (Schldl.) FvM.—MYRTACEAE (det. MK). ♂ and ♀ adults emerged, but hatching-date was not recorded. (Preserved = 1, 6.)

• *Ectropis* sp., close to *aganopa* Meyr. (det. IC)—(1) S.AUST., Yorke Peninsula, nr. S end of Formby Bay (NM, N. B. Tindale & P. Aitken): Larva (2 Nov. 65) on *Acacia calamifolia* Sweet ex Lindl. (det. MK). A ♂ adult emerged late Nov. 65. (Preserved = 1, 6.) (2) S.AUST., ± 4 mi. S of Ashbourne (J. O. Wilson): Larva (31 March 69) beaten from the twining parasite, *Cassytha pubescens* (det. J. O. Wilson). An adult emerged 3 May 69; in Wilson Collection, A.N.I.C., Canberra.

Fisera—see also remarks under *Mnesampela fucata* and *Stathmorrhopa macroptila*.

• *Fisera eribola* (Guest) (det. IC)—G.90 (possibly synonymous with *Mnesampela dictyodes* Lower). S.AUST., Blackwood (NM): Captive larvae (May–July) readily accepted mature lvs. of *Eucalyptus odorata* and *E. leucoxylon* (dets. NM). Adults (A) fly late Feb.–mid May (peak late March–early April); univoltine. They come to uv. light mostly after 2300 hrs. Only minor individual variation is shown in color and maculation. The eggs seem to be on the borderline of a rain-hatching tendency, and first instar larval dispersal occurs. The adult rests in the manner of *S. macroptila* (p. 32). (Preserved = 1–6, 9; photos = 1, 1c, 2, 4, 5, 5c.)

• *Fisera perplexata* Walk. (det. IC)—G.95 (possibly synonymous with *belidearia* Felder). S. AUST., Blackwood (NM): Larvae (July–Oct.) on mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B+) fly April–July. There may possibly be two distinct spp. involved here, although I suspect it is one moth with highly variable coloration. Three major color-maculation forms (with minor variations in each) occur consistently in the Blackwood-Belair district: (a) the earliest form to appear (April–May) has a pale tan forewing groundcolor with a prominent (darker brown) single discal dot, a fairly strong, darker brown postmedial line, and little or no speckling; (b) the next form(s) to appear (from about early May onward) are generally more-or-less heavily-speckled with darker brown, on medium brown to orange-brown or gray-brown groundcolor, and the postmedial line is non-existent or very faint; (c) the last form to appear (from about early June onward) is often a little larger and very much darker in groundcolor, which can be a deep but dull reddish- or almost purplish-brown, with little or no evidence of either the post-medial line or the heavy speckling, although a single discal dot may (or may not) be present. The flight seasons of forms (a) and (b) overlap (early–late autumn), as do forms (b) and (c), but (a) and (c) are well-separated. Further rearings, from known females of all three major forms, all from the same locality, could provide the information needed for a deeper understanding of this (or these) interesting and perplexing species! The eggs are rain-hatched. (Preserved = 1–7, 9; photos = 1 for all forms, 2 & 5 of earliest form only.)

Gastrinodes—see *Cleora*.

• *Gastrinopa xylistis* Lower (det. NM)—G.137. S.AUST., Blackwood (NM): Captive larvae (Nov.–Jan.) readily accepted only young lvs. of *Eucalyptus odorata* (det. NM). Adults (B+) fly Sept.–Feb. (peak Oct.–Dec.). First instar larval dispersal is notable in this species. (Preserved = 1–7, 9; photos = 1, 2, 5, 6.)

• *Heteroptila argoplaca* (Meyr.) (det. SF, IC)—G.108A. S.AUST., Blackwood (NM): Captive larvae (most months) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM). Adults (A) fly all months (peaks Feb.–March & May–June). (Preserved = 1–6, 9; photos = 1, 2.)

• *Idiodes apicata* Gn. (det. SF, IC)—G.147, 147A, & 147B. (1) S.AUST., Blackwood-Belair district, Highbury (E of Adelaide), and Naracoorte (TN, D. & NM, and K. J. Sandery): Larvae (most months, esp. winter–spring) on both young and old (tough) fronds of bracken-fern, *Pteridium esculentum* (det. Hj. Eichler). This is apparently the only foodplant of this moth; but see also *Metrocampa*. Adults (B) fly all months (peak June–Oct.). See Tillyard (1926: Pl. 39) for adult photo; McFarland (1972b: 237, 246) for egg photos. (Preserved = 1, 2, 5, 6, 9; photos = 1, 1c, 2.) (2) N.QLD., Atherton Tableland (± 2500' el.), nr. Tinaroo (D. & NM): Larvae (April–May 72) on *Pteridium esculentum*; also evidence of earlier feeding on

P. paquilinum (L). Kuhn (dets. BH) but no larvae found. This latter bracken is of somewhat taller and more rank growth, and has notably pubescent stems in this locality. (Both plants are growing together here.) Captive larvae readily accepted both, but appeared to prefer *P. esculentum*. (Preserved = 1-6, 9.)

- *Lophothalaina habrocosma* (Lower) (det. NM)—G.154, 154A, & 154B. S.AUST., Mt. Lofty Range, Belair Nat. Park, ± 1 mi. E of Belair railway station, just S of Sheoak Rd.; also 4 mi. S of Ashbourne (J. O. Wilson), and nr. Longwood (NM & TN): Larvae (June–Sept.) on old, mature (sclerophyll) lvs. of *Leptospermum myrsinoides* (det. NM). Adults (D, at Blackwood) recorded only for mid April 67; probably more abundant at the above-named specific localities, in close association with the foodplant (a “frail” moth and a weak flyer). Emergences in captivity were all in March or April (strictly univoltine). The J. O. Wilson Collection, now in A.N.I.C. (Canberra), contains a good series of reared adults, most of which are from larvae I collected at the above Belair locality in July–Aug. 68, a winter in which larvae were very abundant there. The eggs seem to be on the borderline of a rain-hatching tendency. See McFarland (1972b: 241) for egg photos. See p. 13 regarding adult resting-position. (Preserved = 1-7, 9; photos = 1, 2, 5, 5c, 6.)

- *Loweria platydesma* (Lower) (det. IC, NM)—G.152. S.AUST., ± 5 mi. E of Two Wells (± 25 mi. N of Adelaide) (NM & TN): Larvae (27 Aug. 66) common, in a restricted roadside strip, on buds, fls., and mature lvs. of *Cassia nemophila* Cunn. ex Vogel—CAESALPINIACEAE (det. MK). Adults emerged mid April 67 (3 ♂ ♂, 1 ♀); these 4 specimens show tremendous variation in the darker maculation of the forewings, but not in the grayish groundcolor. Probably univoltine. (Preserved = 1, 5, 6, 8h, 9; photos = 1.)

- *Melanodes anthracitaria* Gn. (det. NM)—G.161. S.AUST., Blackwood-Upper Sturt district (NM): Captive larvae (Nov.–Dec.) readily accepted only young lvs. of *Eucalyptus odorata* (det. NM); no doubt feeds on many other *Eucalyptus* spp. as well. Adults (B, at Blackwood) fly mid Sept.–Dec. (peak Nov.); they are more abundant around Upper Sturt; univoltine. First instar larval dispersal is notable in this species. See Common (1970: 849, fig. D) for a line drawing of the pupa. See McFarland (1972b: 241) for egg photos. (Preserved = 1-7, 9; photos = 1, 1c, 2, 5, 5c, 6.)

- *Metrocampa ada* (Butl.) (det. IC)—G.136. S.AUST., Naracoorte, 13 Lochiel Ave. (TN): Larvae (July–Aug.) common on mature lvs. of bracken, *Pteridium esculentum* (det. Hj. Eichler). These larvae are quickly separated from the two other South Australian bracken-feeding geometrids (*Idiodes apicata* and *Metrocampa biplaga*) by their much smaller size when fullgrown, and by the strong, dark brown, dorsal chevron markings (= “herring-bone” maculation). Like *M. biplaga*, the larvae of *ada* are notably sluggish in behavior, in contrast to the active larvae of *Idiodes*. (Preserved = deformed 1, 5, 6, 8h, 9; photos = 5.)

- *Metrocampa biplaga* Walk. (det. NM)—G.217 & 217A—(possibly synonymous with *glaucias* Walk.). (1) S.AUST., Naracoorte, 13 Lochiel Ave. (TN): Larvae (July–Aug.) on older (tough) lvs. of *Pteridium esculentum* (det. Hj. Eichler). These larvae, when filled out in last instar, are large and rather “heavy” in build, and are notably sedentary in behavior; these two characteristics alone will quickly separate them from larvae of the more common *Idiodes apicata* (my G.147) which also occur on the same foodplant, often together with larvae of both *Metrocampa* spp. Adults fly March–April (little data available for Naracoorte). (Preserved = 5, 6, 9; photos = 5, 6.) (2) S.AUST., Belair Nat. Park, nr. Long Gully (NM): Larvae (Sept.–Oct. 69) of *M. biplaga* in company with larvae of *I. apicata*, both feeding primarily on the older lvs. of *P. esculentum*. *Idiodes* was more abundant at the time. (Preserved = 1, 2, 9; photos = ♂ 1 from Aldinga, S. Aust.)

Mnesampela—see also *Fisera*.

- *Mnesampela fucata* (Felder) (det. NM)—G.109. S.AUST., Blackwood (NM): Larvae (June–Aug.) on mature (tough) lvs. of *Eucalyptus odorata* (det. NM); the unique last instar larva rests outstretched on a strong silken mat, usually on the

upper (or more exposed) surface of a leaf, always aligned \pm parallel to the midrib, in a manner reminiscent of many *Papilio* larvae. (The same habits are also seen in the mature larvae of *Fisera eribola* and *F. perplexata*, but the *perplexata* larva is more often inclined to rest on a leaf margin, especially when smaller.) Adults (A+) fly mid March–late June (peak mid April–May), with predominantly $\delta\delta$ coming to uv. light in the earlier part of the flight season and ♀♀ mostly appearing from May onward; $\delta\delta$ to light mostly after 2300 hrs, and ♀♀ mostly before that time; univoltine. The adult forewing shows considerable variation in 2 features: (1) The groundcolor can vary from pale cream (fresh, unfaded $\delta\delta$ only), to light golden-tan ($\delta\text{♀}$), to deep tan with a faint pinkish tinge (♀♀ only), to rich rust or orange-brown (♀♀ only); (2) the degree of speckling (small darker dots) can vary from heavy and intense to nil, and is primarily a feature of the ♀♀ . The eggs are rain-hatched and first instar larval dispersal is notable. This species provides a splendid example to illustrate both of these phenomena, which are described at some length in an earlier paper (McFarland, 1973). See McFarland (1972b: 239) for egg photos. (Preserved = 1–7, 9; photos = 1, 2, 5, 5c.)

• *Mnesampela lenaea* Meyr. (det. IC)—G.118 & 118A (probably synonymous with *comarcha* Meyr.). (1) S.AUST., Blackwood (NM): Larvae (July–Sept.) usually on saplings (eating only old lvs.) of *Eucalyptus odorata* or *E. leucoxyton*. I also have one record (10 Sept. 66), of a single last instar larva thriving on **E. ficifolia* F. Muell. (W. Aust. native) in a Blackwood garden; this larva had a deep reddish-pink groundcolor, and was eating only the young (red) lvs. of that highly sclerophyll eucalypt (dets. NM). These larvae are semi-gregarious when small, but unlike *M. privata* have no nest-building habit whatsoever in any of the instars; usually solitary when fullgrown. They tend to sit exposed on brown or tan (dead) parts of partially-damaged lvs. in full view, but they are well protected by their close resemblance to brown bits of dead and curled leaf. Adults (B+) fly late March–June (peak May); univoltine. The eggs are rain-hatched. (Preserved = 1–7, 9; photos = 1, 2, 5, 5c, 6.) (2) S.AUST., nr. Mt. Lofty Summit (Cleland Park): Larva (19 Aug. 69) on mature lvs. of a *Eucalyptus viminalis* sapling (det. MK). (3) S.AUST., Kangaroo Island, 10 mi. W of Vivonne Bay (NM): Larva (3 Sept. 67) on one of the mallee eucalypts, *E. diversifolia* Bonpl. (det. MK).

• *Mnesampela privata* (Gn.) (det. IC)—G.82. S.AUST., Blackwood (NM): Larvae (May–July) often conspicuous when defoliating small saplings, especially stunted or “struggling” individuals (eating old, mature lvs.) of *Eucalyptus odorata* and *E. leucoxyton* (det. NM). The larval habits are unusual in the Geometridae, as they are semi-gregarious even when fullgrown, more so when smaller; they make tough silk nests in partially-curved lvs., in which several rest (half-curved and close together) by day, coming out to feed on nearby foliage after dark. Adults (A) fly late Feb.–May (peak April); univoltine. See Common (1966b: 83) for a δ adult photo; Common (1970: 849, fig. A) for a line drawing of the final instar larva. (Preserved = 1–7, 8hh, 9; photos = 1, 5, 6.)

• *Niceteria macrocosma* (Lower) (det. NM)—G.200. S.AUST., Blackwood (NM): Captive larvae (April–June) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B–) fly Feb.–early April, mostly coming to uv. light after 2300 hrs (even by 0300–0400 hrs they are still coming in); univoltine. This is one of the largest and most colorful geometrids occurring here. See Common (1966b: 72) for a good watercolor painting of the adult. See McFarland (1972b: 241) for egg photo. (Preserved = 1–7, 9; photos = 1, 1c, 2, 4, 5, 5c, 6.)

• *Osteodes ?fictilaria* (Gn.) (det. IC)—G.107. S.AUST., Blackwood (NM): Larvae (March–July–?) on *Dodonaea viscosa* Jacq.—SAPINDACEAE (det. NM). Adults (B) fly March–May–? Probably univoltine. (Preserved = 1, 2, 4–6, 8h, 9; photos = 1, 2, 5.)

Paralaea—see *Fisera*, *Mnesampela*, *Stathmorrhopa*.

Paramelora—see “*Diastictis*” *goniota*.

Parosteodes—see *Osteodes*.

"*Protamelora*" (Aust. Museum, Sydney)—see "*Diastictis*" *goniota*.

"*Pseudopanteria*"—see *Lophothalaina*.

Rhynchopsota—see "*Chlenias*" *rhyncophora* Lower.

● *Smyriodes aplectaria* Gn., 1857 (det. SF)—G.140 & 140A (possibly synonymous with *notodontaria* Walk., 1860). (1) S.AUST., Blackwood-Belair district (NM): Larvae (Aug.–Oct.) are primarily fl. and fl. bud-feeders (if allowed their preference), but will also eat the young lvs. of some of the plants involved. Around Blackwood, by far the preferred foodplant appears to be *Pultenaea largiflorens* var. *latifolia*; they also readily accepted young lvs. of *Acacia pycnantha* (dets. NM) in captivity, but I have no field records of larvae on the latter. In Belair Nat. Park (just S of Sheoak Rd.), I have found them feeding (in about equal numbers) on 3 unrelated plants: *P. largiflorens latifolia*; buds & fls. of the parasitic twiner, *Cassytha pubescens*; swelling fl. buds of *Leptospermum myrsinoides* (dets. NM). Adults (B) fly mid May–mid July (peak very short, only late May–early June), and they come to uv. light primarily after 2300 hrs, which may explain their relative scarcity in collections; univoltine. The eggs are rain-hatched. (Preserved = 1–7, 9; photos = 1–5, 5c, 6.) (2) S.AUST., Black Hill, at end of Addison Ave., Athelstone, E of Adelaide (TN): Several larvae (Aug.–Sept. 67) beaten from *Cassytha pubescens* which was parasitizing the shrubby *Casuarina muelleriana* (dets. TN); the larvae were definitely eating the *Cassytha*, not its host, according to Mr. Newbery. (3) S.AUST., S coast of Kangaroo Island, ± 10 mi. W of Vivonne Bay (NM & G. D. Seton): Larvae (9–16 Oct. 66) on fls. and tender young seed capsules of the spiny-intricate shrub, *Daviesia brevifolia* Lindl.—FABACEAE (det. MK). (Preserved = 5.)

● *Smyriodes serrata* (Walk.), 9 May 1857 (det. SF)—G.110 & 110A (possibly synonymous with *carburaria* Gn., 31 Dec. 1857). (1) S.AUST., Blackwood (NM): Larvae (Aug.–Oct.) on young lvs. of *Acacia pycnantha* (det. NM). Adults (A) fly late May–early Nov. (peak mid June–early Sept.) almost entirely ♂♂ coming to uv. light in the first few weeks of the season, with ♀♀ mostly later. However, the ♂♂ continue right through, with both sexes occurring in approximately equal numbers (at uv. light) during Sept.; univoltine. (Preserved = 1–6, 9; photos = 1, 2, 4, 4c, 5, 5c, 6.) (2) S.AUST., ± 3 mi. S of Monarto South railway station (NM & D. Bakker): Larva (afternoon of 6 Oct. 69) found crawling among lvs. on *Acacia calamifolia* Sweet ex Lindl. (det. MK). (Preserved = 5.)

Stathmorrhopa—see also *Fisera* and *Mnesampela*.

● *Stathmorrhopa macroptila* (Turner) (det. IC)—G.99. S.AUST., Blackwood (NM): Larvae (June–Sept.) on young and mature lvs. of *Eucalyptus leucoxylon* and *E. odorata* (dets. NM). Adults (A+) fly April–June (peak late April–May); the majority come to uv. light after 2300 hrs; univoltine. In fresh specimens, the uniformly dark sooty-brown of the forewings, thorax, and head, plus the almost total lack of maculation (but for an obscure dark discal dot in most males) will serve to distinguish this sp. from *Fisera eribola*, the only other geometrid with which it might be confused in this locality. See p. 13 regarding the adult resting-position. The eggs are rain-hatched. (Preserved = 1–6, 9; photos = 1, 2, 5, 6.)

Note: Higher up in the Mt. Lofty Range (Aldgate district) occurs what is probably a distinct but very closely-related species, never seen during six seasons at Blackwood: This moth flies during late Feb.–April, coming to uv. light mostly after 2300 hrs; the general appearance is close to *S. macroptila*, but the major forewing veins are traced with a soft brick-red, and the brown forewing groundcolor of fresh specimens is not as dark or sooty as in *macroptila*.

● *Stibaroma melanotoxa* Guest (det. IC)—G.81. S.AUST., Blackwood (NM): Larvae (May–Sept.) on mature lvs. of *Eucalyptus odorata* (det. NM); in later instars they are strictly nocturnal feeders, resting by day outstretched ("catocaline style") on bark or on other rough, brown areas of the branches and trunk. Adults (A+) fly late Feb.–early July (peak mid March–early June); the majority come to uv. light after 2300 hrs; univoltine. There may possibly be 2 spp. involved here but I suspect this is only one highly variable species with respect to both color and

maculation. First instar larval dispersal is notable. See McFarland (1972b: 237) for egg photos. (Preserved = 1-6, 9; photos = 1, 2, 5, 6.)

• *Stibaroma trigramma* Lower (det. IC)—G.104 (synonymous with *Cleora dolichoptila* Turner (det. NM); type ♂ in Qld. Museum, Brisbane). S.AUST., Blackwood (NM): Larvae (July-Sept.) on mature lvs. of *Eucalyptus odorata* (det. NM). Adults (A) fly mid March-early July (peak mid April-May) with the majority coming to uv. light after 2300 hrs; univoltine. They are quite variable in forewing maculation (and to a lesser extent in coloration), but do not approach the great variability seen in *S. melanotoxa*. The eggs are rain-hatched, and first instar larval dispersal is notable. (Preserved = 1-7, 9; photos = 1, 2, 5, 5c, 6.)

• *Symmetroctena ?eutheta* Turner (det. NM)—G.134. S.AUST., SW Yorke Pen., S end of Formby Bay, ± 5 mi. SW of Carribie Homestead, on beach sandhills (NM, N. B. Tindale, & P. Aitken): Larvae (2 Nov. 65) common on the small shrubby root-parasite, *Exocarpos syrticolus* (FvM. ex Miq.) Stauffer (det. MK); feeding mostly on young growing tips of stems. Adults emerged late Nov. 65. (Preserved = 1, 4, 5, 6, 8dh, 9; photos = 1.)

• *Symmetroctena exprimataria* Walk. (det. SF)—G.135 & 135A. S.AUST., upper Yorke Peninsula, nr. Cunliffe (NM & N. B. Tindale); also, 4 mi. E of Two Wells, at Lewiston Park (NM, TN, & G. Furness): Larvae (most months) abundant on the large shrubby root-parasite, *Exocarpos aphyllus* R. Br. (det. MK), feeding primarily on floral parts and young tips. Adults fly most months. (Preserved = 1, 4, 5, 6, 8hhh, 9; photos = 1, 5.)

• *Symmetroctena exprimataria* Walk. (det. IC)—G.233. W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Captive larvae (Jan. 73) readily accepted floral parts and new growth of *Exocarpos sparteus* R. Br. (det. WAH). Adults (B-) are multiple-brooded here. (Preserved = 1-6, 9.)

• *Symmetroctena leucoprosopa* Turner (det. IC, NM)—S.AUST., ± 4 mi. E of Two Wells, Lewiston Park (NM & TN): Larvae (19 March 67) on the tree, *Melaleuca lanceolata* Otto—MYRTACEAE (det. NM). Adults emerged April 67. (Preserved = 1, 6.)

Symmiges—see *Smyriodes*.

• *Syneora leucanthes* Turner (det. IC)—G.186. S.AUST., ± 1 mi. N of Grange, on the coast W of Adelaide, along Military Rd. (NM): Larvae (8 Aug. 67) abundant on the large shrub, *Melaleuca halmaturorum* FvM. ex Miq.—MYRTACEAE (det. MK). Adults emerged Sept.-Oct. 67. (Preserved = 1, 4-6, 9; photos = 1, 5.)

• *Syneora* sp., close to *lygdina* Turner (det. NM)—S.AUST., N. Flinders Range, nr. Arkaroola Homestead, in a dry-rocky gully (NM): Larvae (Oct. 69) on the large shrub, *Melaleuca glomerata* FvM. (det. MK). Adult ♀ emerged Nov. 69. (Preserved = 1, 6.)

• *Syneora* sp., close to *mundifera* Walk. (det. NM)—S.AUST., S coast of Kangaroo Is., ± 10 mi. W of Vivonne Bay, around borders of a small, freshwater lagoon (NM & G. D. Seton): Larvae (mid Oct. 66) on the dense shrub, *Melaleuca oraria* J. M. Black (det. MK). Adults (♂, ♀) emerged 5, 8 Nov. 66. (Preserved = 1, 6.)

• *Thalaina angulosa* Walk. (det. SF, IC)—G.100 & 100A. (1) S.AUST., Blackwood-Belair district (NM): Larvae (July-Sept.) regularly on young lvs. of *Acacia pycnantha*; captive larvae readily accepted the eastern Cootamundra wattle, **A. baileyana* FvM. (dets. NM). Adults (A) fly mid March-mid June (peak April-early May) with very few ♀♀ appearing prior to early May; univoltine. This is the only member of the genus I have taken at Blackwood. The eggs are rain-hatched. See McFarland (1972b: 241) for egg photos. (Preserved = 1-7, 9; photos = 1, 1c, 2, 5, 5c, 6.) (2) S.AUST., ± 3 mi. NE of Woodchester, nr. Hartley (NM): Larvae (6 July 68) common on *Acacia brachybotrya* Benth. (det. MK), and on *Cassia* sp. CAESALPINIACEAE (det. NM). (Preserved = 5; photos = 5, 5c.) (3) S.AUST., ± 5 mi. E of Two Wells, along roadside (NM & TN): Larvae (27 Aug. 66) common on *Cassia nemophila* Cunn. ex Vogel (det. NM).

- *Thalaina clara* Walk. (det. NM)—G.128. S.AUST., Naracoorte (eggs through TN): Captive larvae (May–June 70) readily accepted mature lvs. (only) of *Acacia mearnsii* DeWilld. (syn. = *A. mollissima* Black) (det. NM). Based on the larval maculation, it is apparent that *T. clara* larvae (unlike *T. angulosa* or *T. selenoea*) are adapted for living on acacias having finely-bipinnate (“feathery”) lvs., although they might conceivably accept certain of the other *Acacia* spp. as “forced” substitutes in captivity. Adults fly \pm April–May at Naracoorte (TN records); univoltine. The eggs are rain-hatched. See Common (1966b: 83) and Tillyard (1926: Pl. 33) for ♀ adult photos. (Preserved = 2–7, 9; photos = 2, 5, 6.)
- *Thalaina selenoea* Dbldy. (det. NM)—G.119 (almost certainly synonymous with *punctilinea* Walk.). S.AUST., Naracoorte (eggs through TN): Captive larvae (June–July 69) readily accepted mature lvs. (phyllodes) of the shrubby **Acacia iteaphylla* FvM. ex Benth. (det. MK); also casually accepted young lvs. of *A. pycnantha* and *A. mearnsii*, but much preferred the first species. Adults fly \pm April–May at Naracoorte (TN records); univoltine. The eggs are rain-hatched. See Common (1970: 844) for ♂ adult photo. (Preserved = 1, 2, 5–7, 9; photos = 2, 5, 6.)
- *Thalainodes macfarlandi* Wilson (det. J. O. Wilson)—G.180. N.TERR., 12 mi. E of Alice Springs (NM & TN): Captive larvae (June–Sept. 67) readily accepted mature (tough) phyllodes of *Acacia pycnantha* (det. NM) as a substitute foodplant at Blackwood, S.AUST. Adults (B \pm) fly April–June, probably widespread through many inland, semi-desert localities between Coober Pedy and Alice Springs; almost certainly univoltine. The eggs seem to be on the borderline of a rain-hatching tendency. For the original description and photos of this moth, see Wilson (1972). (Preserved = 1–6, 9; photos = 1, 1c, 2, 5.)
- *Zermizinga indocillisaria* Walk. (det. IC, SF)—G.185. S.AUST., Blackwood, and many other districts around Adelaide (NM): Larvae (winter–spring) are widespread through many natural habitat types here, feeding on a wide range of unrelated plants, mostly shrubs or dwarf shrubs; they are never (or rarely) common in any given locality, but are regularly encountered almost everywhere during bush-beating. They look rather like small larvae of *Ectropis excursaria* at first glance. A few specific foodplant records: *Bertya mitchellii* (Sond.) Muell, Arg. (S.AUST., \pm 3 mi. S of Monarto South, 6 Oct. 69), and *Beyeria leschenaultii* var. *latifolia* Grüning (S.AUST., Hallett Cove, Aug. 67)—both EUPHORBIACEAE (dets. MK); *Cassia nemophila* Cunn. ex Vogel—CAESALPINIACEAE (det. NM) (\pm 5 mi. W of Two Wells, S.AUST., 27 Aug. 66); *Exocarpos cupressiformis* and *Pultenaea largiflorens* var. *latifolia* (dets. NM) (Blackwood-Belair district, S.AUST., Aug.–Sept.). Adult ♂♂ (B+, at Blackwood) fly \pm May–Sept. (peak June), coming to uv. light mostly after 2300 hrs; the ♀♀ are brachypterous, most peculiar, and unable to fly. See Common (1966b: 83) for excellent ♂ & ♀ adult photos. I would expect first instar larval dispersal in this species. (Preserved = ♂ ♀ 1, 6; photos = ♀ 1, alive.)

Miscellaneous Unidentified *Ennominae*

- *Genus ? sp. ?* (probably undescribed) (det. SF, NM)—G.242. (This sp. may be fairly close to *Chlenias*, but it appears to warrant generic separation.) W.AUST., Geraldton district, in Spalding Park at Bluff Point, S side of Chapman R. (D. & NM): Larvae extremely abundant (July–Aug. 73) on new lvs. of *Grevillea pinaster* Meisn. (det. WAH). The situation here was very reminiscent of the periodic extreme abundance of my G.103 (*Chlenias*) larvae in Blackwood, S. AUST., where *Olearia ramulosa* was nearly stripped of foliage some years in certain localized areas. The way the colorful G.242 larvae blend with the intricate tangle of linear lvs. on their foodplant is also parallel to the situation in G.103. However, the prominent pair of shiny, black, subdorsal chazae on abdominal segment 2 (A-2), repeated again on A-8, separate these otherwise very “*Chlenias*-like” larvae from all *Chlenias* spp.

listed earlier; some individuals also have a similar (but smaller) pair of chalzae on A-3, but in others they are totally missing on that segment. The highly variable adults fly \pm May–July; univoltine. (Preserved = 1, 4–6, 9; photos = 1, 5, 5c, 6.)

(B) SUBFAMILY GEOMETRINAE (SYNONYM = HEMITHEINAE)

Aelochroma—see *Terpna*.

• *Agathia* sp.? (det. NM)—Gm.421. N.QLD., \pm 14 mi. N of Cairns, Clifton Beach (D. & NM): Larva (8 May 72) on semi-mature lvs. (on fast-growing stems) of the sprawling shrub-vine, *Alyxia spicata* R. Br.—APOCYNACEAE (det. BH). The single half-grown larva was killed by a parasite. This tentative larval determination is based on illustrations and foodplant data from Singh (1953). See Tillyard (1926: Pl. 27) for *A. laetata* adult in color. (Preserved = 3rd instar larval head capsule and 8h.)

• *Austroterpna idiographa* Goldfinch (det. NM)—Gm.412. S.AUST., Highbury East, at 1136 Lower Northeast Rd. (E of Adelaide) (eggs through K. J. Sandery): Captive larvae (April–May 70) readily accepted young lvs. of *Acacia pycnantha* (det. NM). Adults (B–) fly March–early May & Sept.–Oct. (records from Sandery Coll., Highbury); extremely rare at Blackwood, where only one worn ♀ (early May 65) was taken in 6 consecutive years. (Preserved = 1–6, 9; photos = 1, 2, 5, 6.)

• *Austroterpna ?paratorna* (Meyr.) (det. IC)—Gm.405. S.AUST., N. Flinders Ranges, 21–23 mi. E of Copley (NM, P. & A. Taverna): Larvae (25 Oct. 69) on young lvs. of *Acacia rivalis* J. M. Black—MIMOSACEAE (det. S. A. Herbarium). Adults emerged mid Nov.–Dec. 69. I suspect that my Gm.412 and Gm.405 are one and the same species, but they have been recorded separately in my larval collection and notes. Gm.405 is somewhat less strongly-marked than 412, with a pale gray-frosted effect over the ♂ forewing. Both Gm.412 and 405 show a considerable size difference between the sexes, the males usually being notably smaller. (Preserved = 1, 2, 4–7, 9; photos = 1, 1c, 5, 5c, 6.)

• *Chlorocoma ?assimilis* (Lucas) (det. IC)—Gm.76. S.AUST., Blackwood-Belair district (NM): Larvae (July–Sept.; also autumn) frequent on young lvs. and growing tips of *Acacia pycnantha* (det. NM); also on new growth and fls. of *Acacia myrtifolia* (records of J. O. Wilson, Aug. 67, Aldinga, S.Aust.; NM & K. J. Sandery, 4 Sept. 71, Aldgate, S.Aust.). Adults (A) fly Sept.–June (peaks Nov. & Jan.–April) at Blackwood. See Common (1970: 849, fig. C) for final instar larva of this or a closely-related sp. (Preserved = 1–6, 8h, 9; photos = 1, 1c, 2, 5, 5c, 6.)

• *Chlorocoma cadmaria* (Gn.) (det. IC, SF)—Gm.130 & 130A. (1) S.AUST., 3½ mi. SE of Blackwood P.O. (NM): Larvae (Sept.–Oct. 65) on the slender woody shrub, *Leptospermum myrsinoides* (det. NM). Adults (C) fly Nov.–March at Blackwood; rare here, but probably more common near the scattered and localized patches of their foodplant. (Preserved = 1, 5, 6, 9; photos = 1.) (2) S.AUST., S coast of Kangaroo Island, \pm 10 mi. W of Vivonne Bay, around edge of a small, freshwater lagoon (NM & G. D. Seton): Larvae (1 Jan. 66) on *Darwinia micropetala* (FvM.) Benth.; also (mid Oct. 66) on *Melaleuca oraria* J. M. Black and young lvs. of *M. gibbosa* Labill.—all MYRTACEAE (dets. MK). See Tillyard (1926: Pl. 27) for adult in color. (Preserved = 1, 4–6, 9; photos = 1.)

• *Chlorocoma* sp., close to *cadmaria* (Gn.) (det. NM)—Gm.411. VIC., Red Hill (S of Melbourne) (eggs through D. R. Holmes): Captive larvae (Feb.–April 70) accepted mature lvs. of *Leptospermum myrsinoides* (det. NM), at Blackwood, S. Aust. (Preserved = 1–6, 9; photos = 5, 5c.)

• *Chlorocoma carenaria* Gn. (det. IC)—Gm.407. VIC., Red Hill (S of Melbourne) (eggs through D. R. Holmes): Captive larvae (April–May) readily accepted young

lvs. of *Acacia pycnantha* (det. NM), at Blackwood, S.Aust. Adults emerged mid-late June. (Preserved = 1-6; photos = 1, 5, 6.)

● *Chlorocoma dichloraria* Gn. (det. SF)—Gm.401. S.AUST., Naracoorte, at 13 Lochiel Ave. (NM & TN): Captive larvae (Jan. 69) readily accepted young lvs. of *Acacia pycnantha* (det. NM), at Blackwood. (Preserved = 1-3, 9; photos = 2.)

● *Chlorocoma externa* Walk. (det. SF)—Gm.155 (in part; see also the following *Chlorocoma* sp.). S.AUST., Blackwood-Belair district (NM): These larvae (most months, especially winter-spring) are the commoner of 2 closely-related *Chlorocomas* feeding on *Exocarpos cupressiformis* (det. NM). Adults (B+) fly Sept.-May (peaks Nov. & April), coming to uv. light esp. after 2300 hrs. This sp. is distinguished by the presence of small, dark discal dots on all wings, and by the lack of any middorsal, thoracic-abdominal stripe; the darker spots in the fringe (all wings) are a variable feature. (Preserved = 1, 4-6, 8h, 9; photos = 1, 2, 5, 6.)

● *Chlorocoma* sp., close to *externa* Walk. (det. SF)—Gm.155 (in part; see also the preceding *Chlorocoma*). S.AUST., Blackwood-Belair district (NM): Larvae (most months) on *Exocarpos cupressiformis* (det. NM). Adults (B-) fly Sept.-May, coming to uv. light esp. after 2300 hrs. This moth is distinguished from the preceding by the lack of any dark discal dots, by the presence of a light reddish, middorsal, thoracic-abdominal stripe, and by a more prominent pale cream border on the outer margins of both forewings and hindwings, just inside the fringe; darker spots in the fringe (all wings) are a variable feature. The two spp. are essentially identical in size (which varies). The genitalia of this moth and the preceding were found to be distinct (SF and K. Brookes, Nov. 70). It could be of great interest for a future lepidopterist to rear several long series of adults from eggs obtained in captivity from known females of both this form (middorsal stripe) and the preceding (discal dots; no stripe); I had hoped to do this when living at Blackwood, but never got around to it. (It is possible that, among my field-collected preserved larvae coded under Gm.155, both forms may be present, so I would caution anyone who might borrow this material to have this possibility in mind. It is, however, probable that most or all of the preserved alcoholic material is referable to the preceding sp., if these two forms are distinct.) (Preserved = ?, 9; photos = 1, 1c.)

● *Chlorocoma m. melocrossa* Meyr. (det. SF)—Gm.113. (1) S.AUST., Blackwood-Belair district (NM): Larvae (Sept.-Oct.) fairly common on the dwarf shrub, *Pultenaea largiflorens* var. *latifolia* (det. NM). Adults (B-) fly Oct.-Nov. & mid March-mid April (peak Oct.). The vivid green adult cannot be mistaken for any other "emerald" occurring here, if careful note is taken of the head and fringe coloration. (Preserved = 1, 4-7, 8h, 9; photos = 1, 5, 5c, 6, 6c.) (2) S.AUST., Mt. Lofty Range, nr. Upper Sturt (TN): Larvae (24 Sept. 67) not uncommon on the dwarf shrub, *Dillwynia hispida* (det. TN).

● "*Chlorocoma*" sp. (det. SF, NM)—Gm.168. (This sp. may warrant generic separation from *Chlorocoma*.) S.AUST., ± 5 mi. E of Two Wells, along roadside (NM & TN): Larvae (Dec.-March) common on *Acacia ligulata* A. Cunn. ex Benth.; a few also on a single *A. salicina* Lindl. (dets. MK). Adults emerged April-May 67. The ♂ is the smallest immaculate, soft green geometrid occurring near Adelaide and could be mistaken for no other; the larval head capsules are also quite distinctive in this sp. (Preserved = 1, 5, 6, 9; photos = 1.)

● *Chlorocoma ?vertumnaria* Gn. (det. NM)—Gm.191. S.AUST., ± 4 mi. S of Monarto South (NM & TN): Larvae (Sept.-Oct. 67) on *Acacia* sp. with long, ± strap-like and rather thick phyllodes; stems purplish-tinged. Captive larvae (from eggs of a confined ♀) readily accepted young lvs. of *A. pycnantha* at Blackwood. Adults fly Oct.-Nov. and possibly other months as well. (Preserved = 1-6, 9; photos = 1, 2, 5, 6.)

● "*Crypsiphona*" *eremnopis* Turner (det. NM, IC)—Gm.190. (A synonym is *Lophothorax alamphodes* Turner, with type ♀ in A.N.I.C.; the type ♂ of *C. eremnopis* is also in A.N.I.C. Clearly this moth does not belong in *Crypsiphona*.) S. AUST., ± 10

mi. W of Murray Bridge, at 2½–3 mi. S of Monarto South railway crossing (NM & TN): Larvae (8 Oct. 67) fairly common on the low-spreading and dense dwarf shrub, *Dodonaea bursariifolia* FvM.—SAPINDACEAE. This unique habitat, formerly rich in a great variety of native plant spp. (which are not well represented anywhere else near Adelaide), is now (1973) totally obliterated; it was on private farmland. There possibly remains some similar scrub country still intact, a little farther south along the same road (where "Progress" has not yet blossomed), but I do not recall ever seeing *D. bursariifolia* in that area. Adults emerged Nov. 67. (Preserved = 1, 5–7, 8dh, 9; photos = 1, 5, 6.)

• *Crypsiphona oculitaria* (Donovan) (det. SF; correct spelling of specific name has only one "c")—Gm.84, 84A, & 84B. (1) S.AUST., Blackwood (NM): Larvae (most months; especially May–June) on either mature or young lvs. of *Eucalyptus odorata* (det. NM). Adults (A+) fly Aug.–June (peak Nov.–April, especially Feb.). See Common (1966b: 85) for ♀ adult photo; Tillyard (1926: Pl. 39) for ♂. (Preserved = 1–7, 9; photos = 1, 1c, 2, 5–7.) (2) S.AUST., Coorong district, 2 mi. SSE of Salt Creek (J. J. H. Szent-Ivany): Larva (14 Nov. 67) on a mallee eucalypt, *Eucalyptus diversifolia* Bonpl. (det. MK). (Preserved = 5.)

• *Cyneoterpa wilsoni* Felder (det. SF, IC)—Gm.162. S.AUST., Blackwood (NM): Captive larvae (Jan.–Feb.) readily accepted young lvs. (only) of *Eucalyptus odorata* (det. NM). Adults (B–) fly Aug.–April (peak Dec.–Feb.); the majority come to u.v. light after 2300 hrs; see McFarland (1972b: 233) for egg photos. ♀♀ rarely seen. (Preserved = 1–7, 9; photos = 1, 2, 5, 6.)

• *Eucyclodes buprestaria* Gn. (det. NM)—Gm.175, 175A, 175B, & 175C. (1) S. AUST., Mt. Lofty Range, Upper Sturt district (Ironbank Rd.) to Aldgate (Heather Rd.) (NM, D. Bakker, TN; K. J. Sandery; A. Smith): Larvae (Mar.–April 67; Aug.–Sept. 69 & 71) fairly common on young, growing (reddish) tips, fls., fl. buds, and frs. of the slender-wiry parasitic twiner, *Cassytha glabella* (det. NM), which was mostly parasitizing sedges (Cyperaceae) and grasses (Poaceae) here, with a few parasitizing *Exocarpos cupressiformis* and *Leptospermum myrsinoides*. The larvae were found in all 3 situations, but primarily near the ground, where the supporting hosts of their foodplant were low, clump-forming perennial sedges and/or native grasses. Adults (B–) fly spring–early autumn (peaks Nov. & March); extremely rare at Blackwood. See McFarland (1972b: 233) for egg photos. (Preserved = 1–7, 9; photos = 1, 1c, 2, 5, 5c, 6, 7.) (2) S.AUST., Belair Nat. Park, ¾ mi. E of Belair railway station (NM & D. Bakker): Larva (14 Sept. 69) on *Cassytha pubescens* which was parasitizing *Leptospermum myrsinoides* (dets. NM); larvae apparently rare here. (3) S. AUST., Aldinga scrub, ± 3 mi. S of Port Willunga (P. & K. Sandery): Larva (20 Feb. 72) on fl. buds of *Cassytha* sp. (det. Sandery); this was probably *C. glabella* R. Br. (Preserved = 8d) (4) W.AUST., ± 16 mi. N of Geraldton, nr. Oakajee (D. & NM): Half-grown larva (28 July 72) on *Cassytha* sp. (close to *glabella* R. Br.) which was parasitizing shrubby *Casuarina campestris* Diels. (dets. NM). This moth is fairly common (B) at Drummond Cove, W.Aust., with by far the majority coming to u.v. light after 2300 hrs; multiple-brooded here (spring–autumn, with peaks in Sept.–Oct. and mid April–early May).

• *Eucyclodes pieroides* Walk. (det. IC)—Gm.420. N.QLD., ± 14 mi. N of Cairns, at Clifton Beach (D. & NM): Half-grown larva (9 May 72) on fls. & fl. buds of the shrub, *Fenzlia obtusa* Endl.—MYRTACEAE (det. BH); also one fresh ♂ adult (same date) was discovered at rest on one of these bushes (collected). Sexual dimorphism is striking in this species. Adult ♀ emerged 29 June 72. See Common (1970: Pl. 8, fig. L) for excellent color painting of ♂ adult; Tillyard (1926: Pl. 33, 39) for poor photos of both sexes. (Preserved = ♂ ♀ 1, 6, 7, 9; photos = 5.)

• *Eucyclodes* sp. (det. NM)—Gm.413. N.S.W., Oxford Falls (D. Sands): Larvae (July–Aug. 70) on lvs. of *Dodonaea triquetra* Andr. (det. Sands). These larvae are distinct from either of the foregoing *Eucyclodes* spp., but show a closer kinship with

E. pieroides. Unfortunately no adults were successfully reared. (Preserved = presumed 5; photos = presumed 5.)

• *Euloxia fugitivaria* (Gn.) (det. NM)—Gm.403 & 403A (possibly synonymous with *isadelpha* Turner; type from Waroona, W.AUST.). S.AUST., Highbury East, nr. 1136 Lower Northeast Rd., and Athelstone (Addison Ave.), at base of Black Hill (D. & NM, P. & K. J. Sandery); Larvae (Oct.–March) on the flimsy but upright dwarf shrub, *Pimelea stricta* Meisn.—THYMELAEACEAE (det. MK). Adults (B–) fly late Aug.–Sept.; unlike most Geometrinae here, this sp. is strictly univoltine. (Preserved = 1–7, 8hh, 9; photos = 1, 1c, 2, 5, 5c, 6, 6c.)

• *Euloxia meracula* Turner (det. NM)—Gm.400. S.AUST., Port Lincoln, SE of town center (Torrens St.), along beach (TN; D. & NM): Larvae (Sept.–Oct. 68 & 71) common on the “soft” lvs. of the dense and compact low shrub, *Pimelea serpyllifolia* R. Br.—THYMELAEACEAE (det. MK). Adults fly ± May–June; strictly univoltine. (Preserved = 1–6, 8h, 9; photos = 1, 2, 5, 6.)

• *Gelasma centrophylla* (Meyr.) (det. NM)—Gm.406. VIC., Red Hill, S of Melbourne (eggs through D. R. Holmes): Captive larvae (Jan.–Feb. 70) reared at Blackwood, where they casually accepted *Leptospermum myrsinoides* (det. NM), but all died by 2nd–3rd instar; this could have been due to unsuitable foodplant, wrong rearing conditions, and/or disease, which of these was not clear. The record is included only because it could provide a useful clue; these larvae were growing well, up to a point! Adults fly summer–? (Preserved = 1–4.)

• *Gelasma rhodocosma* Meyr. (det. IC)—Gm.416. N.QLD., Atherton Tableland (± 2500' el.), 12 mi. NE of Atherton, nr. Tinaroo Pines Caravan Park (D. & NM): Eggs and larvae (April–June 72) on young and semi-mature lvs. of *Eucalyptus alba* Reinw. ex Blum and *E. polycarpa* FvM. (dets. BH). Adults emerged April–May 72. (Preserved = 1, 2, 5, 6, 8d, 9.)

• *Gelasma semicrocea* (Walk.) (det. IC, SF)—Gm.89 & 89A. (A synonym is *Chlorocoma ipomopsis* Lower, in S.A.M., det. NM). (1) S.AUST., Blackwood (NM): Larvae (most months) on young lvs. of *Eucalyptus odorata* (det. NM). Adults (A+) fly Sept.–July (peaks Nov.–Jan., March–April, & June); the majority of individuals come to uv. light after 2300 hrs. (Preserved = 1–6, 9; photos = 1, 1c, 2, 5, 6.) (2) VIC., Red Hill, S of Melbourne (eggs through D. R. Holmes): Captive larvae (Dec. 69) readily accepted young lvs. of *E. odorata* at Blackwood, S. Aust. (3). This sp. also appears to be widespread in the forested SW of W.AUST.

• *Heliomystis electrica* Meyr. (det. NM)—Gm.409, 409A, & 409B. (1) S.AUST., higher elevations of the Mt. Lofty Range, especially Upper Sturt district to Aldgate (P. Taverna, A. Smith, & NM): Adults (B–) fly late Oct.–March, with the majority coming to uv. light only after 2300 hrs and even up to dawn. Never seen at Blackwood in 6 years. (2) VIC., Red Hill, S of Melbourne (eggs through D. R. Holmes): Captive larvae (April–May 70; reared at Blackwood) readily accepted luxuriant and soft young lvs. (from recently-burned trunk resprouts) of (only) *Eucalyptus obliqua* (det. MK). Also offered were young, semi-mature, and old lvs. of *E. odorata*, *E. leucoxydon*, and *E. fasciculosa*; the first two were absolutely refused, but *fasciculosa* was at first casually accepted; then they became “sickly” on it and were only saved by switching them over to *obliqua*, which was the last eucalypt tried. Upon the latter they soon regained excellent health, feeding avidly, reaching full size, and eventually forming large and perfect pupae and adults. It seems probable that the distribution of *electrica*, at least in the Mt. Lofty Range, may closely follow that of *E. obliqua*; this eucalypt does not grow at elevations as low as Blackwood, although it is well represented in the higher parts of Belair Nat. Park (several miles to the east), and thence on to Upper Sturt, Aldgate, and Mt. Lofty, etc. See Common (1966b: 85) for ♂ adult photo. (Preserved = 1–7, 9; photos = 1, 2, 5, 5c, 6.) (3) An interesting locality record: 2 ♂ adults came to uv. light in Oct. 71, nr. Hopetoun, W. AUST. (S of Ravensthorpe). Forewings (upperside) were a deep sooty-brown, with the maculation rather obscured.

• *Hypobapta barnardi* Goldfinch (det. IC, NM)—Gm.402. N.S.W., Como West,

suburb of Sydney (eggs through L. S. Willan & K. D. Fairey): Captive larvae (Nov. 69) readily accepted young and semi-mature lvs. of *Eucalyptus odorata* (det. NM), at Blackwood, S.Aust. Adults emerged Dec. 69. (Preserved = 1-7; photos = 1.)

● *Hypobapta eugramma* (Lower, 1892) (det. IC)—Gm. 125 & 125A. (It is quite possible that *diffundens* Lucas, 1891, will prove to be a synonym; if so, this name would have priority.) S.AUST., Blackwood (NM): Larvae (late spring–autumn) on young and semi-mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B+) fly late Oct.–early April (peak Jan.–Feb.), especially on hot nights. Sexual dimorphism is fairly noticeable, primarily in the size difference (δ often much smaller). See Common (1966b: 85 and 1970: 849, fig. P) for δ adult photos; McFarland (1972b: 233, 245) for egg photos. (Preserved = 1-7, 8d, 9; photos = 1, 2, 5, 6.)

● *Hypobapta percomptaria* (Gn.) (det. IC)—Gm. 88 & 88A. S.AUST., Blackwood (NM): Larvae (spring–autumn) on young and mature lvs. of *Eucalyptus odorata* and *E. leucoxylon* (dets. NM). Adults (B-) fly late Sept.–early May (peak Jan.–April). An aberrant melanic δ of this sp. was taken at uv. light in Belair Nat. Park, 1 April 71, R. Fisher, collector. (Preserved = 1-7, 9; photos = 1, 1c, 2, 3, 5, 5c, 6.)

Lophothorax—see “*Crypsiphona*” *eremnopis*.

● *Metallochloa militaris* (Lucas) (det. IC)—Gm. 422. N.QLD., Freshwater (N of Cairns), at Limerlost Nursery (D. & NM with L. Abell): Distinctive larva (9 May 72) on fls. & fl. buds of the tree, “star-fruit” or “five-corner” (edible), **Averrhoa carambola* L.—OXALIDACEAE (det. at nursery). Adult ♀ emerged 1 June 72. (Preserved = 1, 6, 9.)

● *Pingasa chlora* (Stoll) (det. IC)—Gm. 417. N.QLD., Atherton Tableland ($\pm 2500'$), 12 mi. NE of Atherton, at Tinaroo Pines Caravan Park (D. & NM): Captive larvae (May–June 72) accepted young and semi-mature lvs. of the rainforest tree, *Euroschinus falcata* Hook. f.—ANACARDIACEAE (det. A. Irvine). Adults emerged early July 72. (Preserved = 1-7, 9; photos = 5.)

● “*Pingasa*” *emiliaria* (Gn.) (det. IC)—Gm. 419. (The quotation marks around *Pingasa* are mine; *emiliaria* does not appear to belong in this genus.) N.QLD., Atherton Tableland ($\pm 2500'$ el.), nr. Tinaroo Pines Caravan Park (D. & NM): Eggs and larvae (May–June 72) on young and mature lvs. of *Eucalyptus ?polycarpa* FvM. and *E. ?drepanophylla*—MYRTACEAE (dets. BH); by far the majority were on small saplings of the former eucalypt, in a grassy-roadside situation (the saplings were re-sprouts, in response to cutting back about a year before). The mature larvae have a surprisingly close (superficial) resemblance to the larvae of *Crypsiphona oculitaria*. Adults emerged June–early July 72. (Preserved = 1-7, 8h, 9; photos = 5.)

Prasinocyma—see also *Gelasma*.

● *Prasinocyma ocyptera* Meyr. (det. SF)—Gm. 169, 169A, 169B, & 169C. (1) S. AUST., ± 5 mi. E of Two Wells (NM & TN): Larvae (19 March 67) mostly on a single tree of *Acacia salicina* Lindl., and a few on *A. ligulata* A. Cunn. ex Benth. (dets. MK). An adult ♀ emerged late March 67. (Preserved = 1, 5, 6; photos = 1.) (2) S.AUST., ± 47 mi. N of Hawker, at Commodore Swamp (NM, A. & P. Taverna): Adults freshly-emerged (24 Oct. 69), coming to uv. light in a dense thicket of *Acacia victoriae* Benth. (det. MK); larvae obtained from a confined ♀ taken here readily accepted the soft new growth (lvs., frs., and buds) of this acacia. (Preserved = 1-3, 5; photos = 1, 6.) (3) S.AUST., Flinders Ranges, at foot of Aroona Dam, SSW of Copley (NM): Larvae (3 Nov. 69) on young lvs. of *A. salicina* (det. NM). (Preserved = 1, 5; photos = 1, 5) (4) S.AUST., Leigh Creek (NM & G. Gregory): Adults (2 Nov. 69) at light; confined for eggs. Resulting larvae reared at Blackwood, S.Aust., where they readily accepted young lvs. of *Acacia pycnantha* (det. NM). (Preserved = 1, 5, 6; photos = 2.)

● *Sterictopsis argyraspis* (Lower) (det. IC)—Gm. 79. S.AUST., Blackwood (NM): Larvae (most months) on young and mature lvs. of *Eucalyptus odorata* (det. NM).

Adults (A) fly Oct.—early May (peaks Nov.—Dec. & March). (Preserved = 1–7, 9; photos = 1, 2, 4, 4c, 5, 6.)

• *Terpna* sp. nov. (det. SF, IC)—Gm.156, 156A, & 156B. (Adult appearance is quite close to *mnitaria* Goldfinch, but it is clearly not that species; for illus. of *mnitaria*, see Common, 1966b: 85.) S.AUST., coastal bluffs at Hallett Cove, S of Adelaide (D. & NM, TN, K. Sandery); also nr. American River and Kingscote, Kangaroo Island (NM): Larvae (peaks June–Sept. & Jan.–March) on the low and dense shrub, *Beyeria leschenaultii* var. *latifolia* Grüning—EUPHORBIACEAE (det. MK); they match the mature lvs. of their foodplant to perfection, in respect to both dorsal and ventral color-maculation. Adults (B) fly late Sept.—March (peak Oct.—early Nov.). We have seen them in diurnal flight (1100–1200 hrs \pm) on several occasions (NM and Sandery); this was not in response to disturbance. They sometimes rest conspicuously on tops of bushes (usually the foodplant); they may also rest on the lichen-covered cliffs and rocks of the Hallett Cove habitat, where they would blend in exceedingly well. (The ♀♀ match the pale green lichen patches beautifully, but the ♂♂ are a much darker and richer shade of green. The greens of both sexes change and fade rapidly in the collection, even when specimens are kept in the dark.) (Preserved = 1–7, 8d, 9; photos = 1, 1c, 2, 5, 5c, 6, 7.)

• *Thalassodes pilaria* Gn. (det. SF)—Gm.418. N.QLD., Atherton Tableland (\pm 2500' el.), 12 mi. NE of Atherton, at Tinaroo Pines Caravan Park (D. & NM): Captive larvae (May—early June 72) readily accepted young and semi-mature lvs. of *Eucalyptus polycarpa* FvM. (det. BH). Many adults emerged mid—late June 72. (Preserved = 1–7, 9; photos = 5.)

Miscellaneous Unidentified Geometrinae

• *Genus?* sp.?—Gm.174. S.AUST., \pm 4 mi. E of Two Wells, Lewiston Park (D. & NM; TN); also 1 mi. S of Monarto South railway station (NM & TN): Larvae (May–Nov.) on native “pine,” *Callitris preissii* Miq.—CUPRESSACEAE (det. MK); often obtained by beating but never common. Adults have not been seen in the field, nor were any ever successfully reared, even after several attempts. This record is included here in order to draw attention to the existence of this small emerald, in hopes that some future worker will eventually succeed in rearing it, and thus learn its identity. (Should this ever occur, I would be most interested to hear about it!) This larva should not be mistaken for that of my G.170 (see *Corula*, under Ennominae). The green larvae of both these spp. are present on the same trees, in the same localities, at the same seasons of the year. However, those of Gm.174 show one of the typical geometrine larval body-profiles (and head shapes), and are also typically geometrine in all details of behavior. Their growth-rate is exceedingly slow; larval mortality is high in captivity if conditions are not suitable in every detail. (Preserved = 4–6, 8h, 9; photos = 4 or 5.)

• *Genus?* sp.? (det. IC, SF, NM)—Gm.404 (fairly close to *Chlorocoma* in superficial appearance, but probably belongs in another genus). S.AUST., N. Flinders Ranges, 21–23 mi. E of Copley (NM, P. & A. Taverna): Larvae (25 Oct. 69) on young and mature lvs. of *Acacia rivalis* J. M. Black (det. S. A. Herbarium); at Blackwood, S. Aust., where this rearing was completed, they readily switched over to young lvs. of *A. pycnantha* for a substitute foodplant. Many adults emerged Nov.—Dec. 69. The wing shapes (especially of the ♂) are unique among the South Australian emeralds; this alone will separate them from all other immaculate green geometrines here. (An adult series, representing this same sp., is in the A.N.I.C., collected by I. F. B. Common, at 28 mi. W of Madura, W.AUST., 30 April 1968.) (Preserved = 1, 5, 6, 9; photos = 1, 2, 5, 6.)

(C) SUBFAMILY LARENTIINAE (SYNONYM = HYDRIOMENINAE)

• *Chloroclystis destructata* Walk. (det. SF)—G.87 & 87A; G.123 (syn. = *catastrepes* Meyr.; det. SF). S.AUST., 3 mi. S of Monarto South, 4 mi. SE of Wistow, and in

the Blackwood-Belair district (NM): Larvae (autumn–winter–spring) on fls. and fl. buds of various unrelated plants, including goldenrod, **Solidago* sp.—ASTERACEAE (in a garden); the native *Clematis microphylla* DC.—RANUNCULACEAE; *Acacia* spp.; *Bertya mitchellii* (Sond.) Muell. Arg.—EUPHORBIACEAE (dets. MK, NM). Adults (B+) fly most months (Blackwood). (Preserved = 1, 4–6, 9; photos = only *Clematis* in habitat.)

• *Chloroclystis* sp., either *anaspila* Meyr. or *filata* Gn. (det. NM)—G.216. S.AUST., Blackwood (NM): Larvae (28 Sept. 69) on lvs. & buds of *Pultenaea largiflorens* var. *latifolia* (det. NM). Adult emerged 13 Nov. 69. (Preserved = 1, 5, 6.)

• *Cidaria uncinata* (Gn.) (det. IC)—G.96. S.AUST., Blackwood (NM): Larvae (autumn–winter–spring) on young lvs. and fl. buds of *Hibbertia stricta* (det. NM). Adults (B–) April & late Aug.–Oct. See Common (1966b: 83) for ♂ adult photo. (Preserved = 1–6, 9; photos = 1, 2, 5.)

• *Cidaria* ?sp. nov. (det. SF)—G.149. S.AUST., ± 8 mi. NE of Two Wells, on white sand hills (NM & TN): Larvae (20, 27 Aug. 66) on fl. buds & fls. of *Hibbertia virgata* R. Br. ex DC. (det. MK). Emerged 18, 23 Sept. 66. Genitalia studied indicate that this slightly larger *Cidaria* is distinct from *uncinata*; larval differences lend additional support to this conclusion. More specimens are needed. (Preserved = 1, 5, 6; photos = 1, 5c.)

• *Euchoeca rubropunctaria* Dbldy. (det. IC, SF)—G.121 (a synonym is *risata* Gn.). S.AUST., Blackwood (NM): Captive larvae (Sept.–Oct.) readily accepted *Haloragis heterophylla* (det. NM). I am certain *Haloragis* is the usual foodplant here. Adults (A) recorded for all months (peaks Sept. & Nov.); very scarce from May–July. (Preserved = 1–6, 9; photos = 2.)

• “*Euphyia*” *actinipha* (Lower) (det. IC)—G.98. (The quotation marks around *Euphyia* are mine.) S.AUST., Blackwood (NM): Captive larvae (June 65) readily accepted **Medicago polymorpha* var. *vulgaris* (Benth.) Shimmers—FABACEAE (det. NM). Adults (D) fly April–May. (Preserved = 1–6, 9; photos = 1, 5.)

• “*Euphyia*” *squamulata* Warren (det. SF)—G.85. S.AUST., Blackwood (NM): Captive larvae (May–June) casually accepted fls. and young growth of *Olearia ramulosa* (det. NM). Adults (B+) fly mid Feb.–June; probably univoltine. (Preserved = 1–4, ?5, 9; photos = 2, 2c.)

• “*Euphyia*” sp.? (det. IC, SF, NM)—G.196. S.AUST., ± 4 mi. S of Ashbourne, nr. “Tooperang Scrub” (Mr. & Mrs. J. O. Wilson): One larva (6 Aug. 68) on young growing tips of *Casuarina paludosa* var. *robusta* Macklin. (det. MK). Adult (♂) emerged 20 Sept. 68. Only one adult (a fresh ♂) was ever taken in 6 years at Blackwood, on 26 Oct. 65, at u.v. light; probably univoltine. The latter specimen is deposited in the B.M.(N.H.). This moth could be mistaken for no other sp.; I could find nothing to compare with it in any of the major Australian collections visited. The prominent eyes, particularly in the pupa, are one of its notable features. (Preserved = ♂ 1, 4, 6, 7, 9; photos = ♂ 1, 5, 6.)

Hydrelia—see *Euchoeca*.

• *Microdes orichares* Turner (det. NM)—S.AUST., Blackwood (NM): Larva (12 Sept. 65) on lvs. of *Olearia ramulosa* (det. NM). Adult (♀) emerged 12 Oct. 65. (Preserved = 1.)

• *Microdes squamulata* (Gn.) (det. IC, SF)—G.102; ?G.117. S.AUST., Blackwood (NM): Larvae (winter–early spring) on young lvs., fls., and buds of several *Acacia* spp.; in a garden common every winter on tender young lvs. of *A. baileyana* FvM. (det. NM). Adults (A) fly Oct.–July (peaks Nov. & May–June). (Preserved = 1, 5, 6, 9; photos = 1, 5.)

• *Poecilasthena ischnophrica* Turner (det. NM)—G.173 (closely matches a specimen labelled “type” in Qld. Museum, Brisbane). S.AUST., Belair Nat. Park, 1 mi. E of Belair railway station (NM & D. Bakker): Larvae (mid Sept. 69) abundant, feeding on tough, mature lvs. of *Leptospermum myrsinoides* (det. NM). Adults never taken at Blackwood; probably restricted to limited areas where the foodplant grows,

as it is a weak flier. I had never before encountered these larvae on this plant, although I had been collecting in the same locality every winter-spring (and frequently beating *Leptospermum*) since 1965; probably univoltine and cyclic. (Preserved = 1, 5, 6.)

● *Poecilasthena pulchraria* Dbldy. (det. IC, SF)—G.144. S.AUST., Blackwood-Belair district (NM): Captive larvae (June-early Aug.) readily accepted mature lvs., fls., and green fruits of the semi-woody, mat-forming "native cranberry," *Astroloma humifusum* (det. MK). From a vast array of native plants and weeds offered (to two different batches of these larvae), only *A. humifusum* proved acceptable, and it was taken avidly; rapid and healthy growth resulted. This is very probably a correct interpretation of the "preferred" or "true" foodplant of this moth, in the locality named. Adults (C, at Blackwood) recorded for most months (peak Nov.-Dec.). (Preserved = 1-6, 9; photos = 1, 5, 6.)

● *Xanthorhoe sodaliata* Walk. (det. SF)—G.139. S.AUST., Glenelg (J. O. Wilson): Captive larvae (Sept. 71) readily accepted lvs., salmon-pink fls., and buds of scarlet pimpernel, a small annual weed, **Anagallis arvensis* L.—PRIMULACEAE (det. NM). I had previously attempted to rear this sp. at Blackwood without success, having offered the captive larvae various low-weedy, herbaceous plants, but *Anagallis* was not among them; other plants, such as clovers, *Plantago*, etc., were refused. The larvae reared by Wilson (on *Anagallis*) were clearly on a preferred foodplant and were thriving in last instar when I saw them. Adults (B+, at Blackwood) fly Sept.-Dec.; univoltine. (Preserved = 1.)

● *Xanthorhoe subidaria* Gn. (det. SF, IC)—G.138. S.AUST., Blackwood (NM): Captive larvae (July-Aug.) readily accepted a bur clover, **Medicago polymorpha* var. *vulgaris* (Benth.) Shinnars (= *M. denticulata*)—FABACEAE (det. NM). Adults (A) recorded for all months (peak Sept.-Nov.). (Preserved = 1-6, 9; photos = 5c.)

● *Xanthorhoe vacuaria* Gn. (det. SF)—G.213 (a synonym = *solutata* Walk.). S. AUST., Blackwood (NM): Captive larvae (April-May 69) readily accepted **Medicago polymorpha* var. *vulgaris* (Benth.) Shinnars—FABACEAE (det. NM). I have no records of adult abundance or flight season for this species. (Preserved = 1-5, 9; photos = 2.)

● *Xanthorhoe vicissata* (Gn.) (det. IC, SF)—G.92. S.AUST., Blackwood (NM): Captive larvae (May-June) accepted a wide range of unrelated herbaceous plants (and also one semi-woody dwarf-shrub), as follows: **Centaurium* sp.—GENTIANA-CEAE; **Chenopodium* sp.—CHENOPODIACEAE; *Hibbertia* sp.; *Lythrum hyssopifolia* L.—LYTHRACEAE; a weedy *Malva* sp.—MALVACEAE; **Medicago polymorpha* var. *vulgaris* (Benth.) Shinnars—FABACEAE; **Mentha* sp.—LAMIACEAE; **Plantago lanceolata* L.—PLANTAGINACEAE; **Polygonum* sp.—POLYGONACEAE; fls. of goldenrod, **Solidago* sp.—ASTERACEAE; and chickweed, **Stellaria* sp.—CARYOPHYLLACEAE (dets. NM); after 1st instar, they were reared to maturity on a combination of *Medicago* and *Plantago* lvs. (both common lawn weeds here) which they ate avidly. Adults (A) fly March-April (peak late March); univoltine. The eggs seem to be on the borderline of a rain-hatching tendency. (Preserved = 1-6, 9; photos = 1, 1c, 2, 5).

(D) SUBFAMILY OENOCHROMINAE (OENOCHROMATINAE)

● *Arhodia lasiocamparia* Gn. (det. IC, SF)—G.124. S.AUST., Blackwood (NM): Captive larvae (Nov.-Dec.) readily accepted young lvs. of *Eucalyptus odorata* (det. NM); I also have 3 field-records of larvae collected on 3 different (unidentified) *Eucalyptus* spp., in the Blackwood-Belair district and at Black Hill, E of Adelaide (NM & TN). Adults (B+) fly Sept.-mid March (peak late Oct.-Dec.); the majority come to u.v. light only after 2300 hrs (♀ rarely seen); univoltine. Color forms vary considerably; a pale pinkish-tinged form (rarely seen at Blackwood) was often taken at Upper Sturt. First instar larval dispersal is notable in this species. See McFarland (1972b: 233) for egg photos. (Preserved = 1-6, 9; photos = 1, 1c, 2, 5, 5c, 6.)

• *Arhodia ?retractaria* Walker (det. SF)—G.163 (clearly distinct from *lasiocamparia*). S.AUST., ± 5 mi. W of Springton (NE of Adelaide) (TN): A single, long, encircling-band type of egg mass was found attached to a thin stem of a *Casuarina* sp. at roadside (late Dec. 66). Resulting larvae (Jan.) reared at Blackwood; they absolutely refused *Casuarina* spp. offered, but readily accepted young lvs. of *Eucalyptus odorata* (det. NM). Adults (3 ♂♂, 1 ♀) emerged late Nov.—early Dec. 68, after 22 months in the pupal stage. (I did not attempt to break the diapause between Sept.—Dec. 67, as I was away at the time; the pupae thus passed through a second summer and winter in diapause. Moisture applied from Sept.—Nov. 68 brought out the adults.) First instar larval dispersal was observed in this species. Probably univoltine. (Preserved = 1-6, 9; photos = 1, 5, 6.)

Cycloproderes—see "*Chlenias*" *melanoxysta* Meyr. (Ennominae).

Descoreba—see *Arhodia*.

• *Dichromodes anelictis* Meyr. (det. NM)—W.VIC., Lowan Reserve, ± 5 mi. S of Kiata (NM): Larvae (28 Sept. 67) on *Baeckea behrii* (Schldl.) FvM.—MYRTACEAE (det. MK). (Preserved = ♂ 1, 6.)

• *Dichromodes atosignata* Walk. (det. NM)—G.187. W.VIC., Lowan Reserve, ± 5 mi. S of Kiata (NM): Larvae (28 Sept. 67) very abundant on *Baeckea behrii* (det. MK). Adults emerged Oct.—Nov.; highly variable in coloring and maculation. (Preserved = 1, 4-6.)

• *Dichromodes* sp., close to *eurupatrix* Prout & *exsignata* Walk. (det. SF, NM)—G.164. (1) S.AUST., 3½ mi. SE of Blackwood P.O. and Belair Nat. Park, 1 mi. E of Belair railway station (NM & TN): Larvae (Oct.—Dec. 66) abundant in the first locality, on tough, mature lvs. of *Leptospermum myrsinoides* (det. NM); scarce in the second locality although the foodplant was common there. Adults emerged early Oct. 67, after 9 months in pupal diapause; univoltine. (Preserved = 1, 4-7, 9; photos = 1, 4-6.) (2) S.AUST., ± 1 mi. N of Coonalpyn (NM): Larvae (28 Dec. 68) on *Leptospermum coriaceum* (FvM. ex Miq.) Cheel; also present on *Leptospermum* sp. at ± 4 mi. E of Lucindale, S.AUST., 26 Dec. 68 (NM & TN).

• *Dichromodes explanata* Walk. (det. NM)—G.150 & 150A. (1) S.AUST., ± 8 mi. NE of Two Wells, on white sandhills (NM & TN): Larvae (20, 27 Aug. 66) on young lvs. of the erect shrub, *Calytrix involucrata* J. M. Black (det. MK). Adults emerged mid Oct. 66; little variation was evident in the specimens seen. (Preserved = 1, 4-6, 9; photos = 1, 5, 5c.) (2) S.AUST., Athelstone, at foot of Black Hill (end of Addison Ave.) (NM): Larvae (15 June 68), mostly half-grown, abundant on *Calytrix tetragona* (det. NM). (3) S.AUST., S coast of Kangaroo Island, ± 10 mi. W of Vivonne Bay (NM & G. D. Seton): Larva (12 Oct. 66) on the dwarf shrub, *Lhotskya* sp. (= *Calytrix*)—MYRTACEAE (det. MK). (Preserved = 5.)

• *Dichromodes limosa* Turner (det. IC)—G.227. N.QLD., Clifton Beach, ± 14 mi. N of Cairns (D. & NM): Larvae (9 May 72) abundant on fls., buds, & young lvs. of the shrub, *Fenzlia obtusa* Endl.—MYRTACEAE (det. BH). Adults emerged early-mid June 72. (Preserved = 1, 5, 6, 8h, 9.)

• *Dichromodes partitaria* Walk. (det. NM)—G.158. S.AUST., S coast of Kangaroo Is., ± 10 mi. W of Vivonne Bay (NM & G. D. Seton): Larvae (mid Oct. 66) primarily on lvs. of *Melaleuca oraria* J. M. Black; a few also beaten from *M. gibbosa* Labill.—MYRTACEAE (dets. MK), but the former appears to be preferred here. (Preserved = 1, 4-6, 9.)

A comment on adults of the genus *Dichromodes*: These geometrids appear to occupy much the same ecological niches in Australia as do adults of *Semiothisa* spp. (Ennominae) in North America. They are highly variable as to coloration, but grays, tans, browns, and red-browns predominate, with nearly all spp. being cryptically colored and marked to match the soil, rock surfaces, leaf litter, or small dead leaves, etc. Although essentially nocturnal in activity, they are easily alarmed to flight in the daytime; the characteristic behavior is to fly up before the walker, only

to land again on the ground a short distance away, with wings pressed flat against the ground and the hindwings totally covering the forewings (planniform position).

Dinophalus—see also *Lissomma* and “Miscellaneous Unidentified Oenochrominae” (end of this section).

• *Dinophalus drakei* (Prout) (det. IC, SF)—G.194. S.AUST., Athelstone, nr. foot of Black Hill (end of Addison Ave., E of Adelaide) (TN): The original ♀ adult (15 Oct. 67) came to uv. light; it was given to me and eggs were obtained. Captive larvae (Nov. 67) readily accepted only the tender young linear lvs. of the dense, tough-sclerophyll shrub, *Hakea rostrata* (det. NM). Adults emerged late Oct. 68; univoltine. See McFarland (1972b: 235) for egg photo. (Preserved = 1–6, 9; photos = 1, 2, 6.)

• *Dinophalus serpentaria* (Gn.) (det. IC, NM)—G.193 & 193A (a synonym = *undulifera* Walk.). (1) S.AUST., 3.3 mi. S of Monarto South railway station (NM & TN): The original ♀ adult (8 Oct. 67) came to uv. light and was confined for eggs. The resulting larvae were reared at Blackwood, where they readily accepted tender young lvs. (only) of *Hakea rostrata* (det. NM); univoltine. (Preserved = 1, 2, 5, 9; photos = 1, 2, 5.) (2) W.AUST., nr. Red Bluff, ± 3 mi. S of Kalbarri (D. & NM): One larva, identical to the above (late Nov.–early Dec. 71), on tender young lvs. of *Grevillea ?trachytheca* FvM. (det. NM). A deformed adult ♂ emerged 13 Jan. 72. (Preserved = 1, 6; photos = 5.)

• *Hypographa aristarcha* Prout (det. IC, SF)—G.184. (1) S.AUST., S coast of Kangaroo Island, ± 10 mi. W of Vivonne Bay (NM & E. C. Jaeger): The original ♀ adult (6 Sept. 67) came to uv. light and was confined for eggs. The resulting larvae were reared at Blackwood, where they readily accepted fls. and young lvs. (only) of *Hakea rostrata* (det. NM); they also accepted tender young lvs. of the highly-sclerophyll and spiny low shrub, *Isopogon ceratophyllus*, but the rearing was completed using only *Hakea*, upon which they thrived. Adults of this most peculiar, large geometrid (with a veliform resting position) fly from late winter–spring; univoltine. See McFarland (1972b: 235) for egg photos. (Preserved = 1–6, 9; photos = 1, 2, 4–6.) (2) I know of two recent mainland S. AUST. records as follows: (a) Athelstone, at 39 Addison Ave., nr. foot of Black Hill, 13 Oct. 67, a fresh adult ♀ at uv. light (J. J. H. Szent-Ivany); (b) nr. Kingston, 29 Aug. 72, a fresh ♀ at uv. light (TN). (3) I collected 13 mostly fresh adults (12 ♂, 1 ♀) of what appears to be a very closely-related sp. (if it is not, in fact, a ssp. of *aristarcha*), in W.AUST., in the Stirling Ranges, nr. Toolbrunup Peak, 19 Nov. 68, at uv. light. (Preserved = 1; photos = 1.) See p. 13 regarding the adult resting-position.

• “*Hypographa*” *epiodes* Turner (det. NM)—G.205. (1) W.AUST., Stirling Ranges, nr. Toolbrunup Peak, in a roadside gravel-quarry (NM & N. B. Tindale): Larvae (19 Nov. 68) feeding at night on young lvs. of *Banksia sphaerocarpa* R. Br. (det. WAH). An adult ♂ emerged 13 Oct. 69, after over 10 months in pupal diapause. (Preserved = 1, 5, 6; photos = 1, 1c.) (2) W.AUST., Moresby Range, Howatharra Hill Reserve, ± 19 mi. NNE of Geraldton (NM): Larvae (Sept.–Oct.) on young lvs. (only) of *Dryandra fraseri* R. Br. (det. WAH).

• *Hypographa hircopsis* Meyr. (det. SF)—G.240. W.AUST., Geraldton-Drummond Cove district (NM): Captive larvae (July–early Aug.) readily accepted the youngest new leaves (only) of *Grevillea pinaster* Meisn.—PROTEACEAE (det. NM); nocturnal feeders. Adults (B–) fly mid May–late June; univoltine. (Preserved = 1–6, 9; photos = 2, 5.)

• *Lissomma ampycteria* Turner (det. IC)—G.223. W.AUST., ± 2½ mi. S of Kalbarri, at Red Bluff Caravan Park (D. & NM): Larvae (mid–late Nov. 71) nocturnal feeders on tender young lvs. of the common “smoke bush,” *Conospermum stoechadis* Endl.—PROTEACEAE (det. NM). An adult ♂ emerged Jan. 72. (Preserved = 1, 5, 6, 8d; photos = 5, 5c.)

• *Macrotentia ochripennata* (Walk.) (det. IC)—G.222. W.AUST., on the south coast at East Mt. Barren, ± 6 mi. W of Hopetoun (D. & NM): The original ♀ adult (23 Oct. 71) came to uv. light and was confined for eggs. The resulting larvae were reared at Red Bluff, nearly 700 mi. to the NW of the collection-site, where they accepted

young lvs. of *Conospermum stoechadis* Endl.—PROTEACEAE (det. NM). These larvae appear to have a fairly close kinship with *Oenochroma* spp. Adults fly Sept.–Nov.–?; probably univoltine. (Preserved = 1–5; photos = 4.)

• *Mictodoca ?toxeuta* Meyr. (det. IC)—W.VIC., Lowan Reserve, ± 5 mi. S of Kiata (NM): Larvae (28 Sept. 67) on *Baeckea behrii* (Schldl.) FvM.—MYRTACEAE (det. MK). Adults (1 ♂, 3 ♀♀) emerged early–mid April 68; probably univoltine. (Preserved = 1, 6.)

• *Monoctenia falernaria* Gn. (det. IC, SF)—G.167. S.AUST., Blackwood (NM): Captive larvae (May–Sept.) readily accepted old and semi-mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B) fly March–April (peak mid–late March); univoltine. They come to uv. light almost without exception after 2300 hrs; ♀♀ hardly ever seen at lights. There is considerable variation in groundcolor and forewing maculation; the usual form here is predominantly light brown or tan, not pink-tinged. A photograph of a living adult ♂ of this sp., in its usual resting position, appears on the cover of *J. Res. Lepid.* 12(4), with data inside back cover. This moth and *Phallaria ophiusaria* (p. 46) are the two largest geometrids at Blackwood; a close third and fourth would be *Nicteria* (Ennominae) and *M. smerintharia* respectively. See McFarland (1972b: 235) for egg photos. (Preserved = 1–6, 9; photos = 1, 1c, 2, 4–6.)

• *Monoctenia smerintharia* Felder (det. IC, SF)—G.94 (a synonym is probably *calladelpha* Lower; type in S.A. Museum). S.AUST., Blackwood (NM): Captive larvae (May–Sept.) readily accepted mature (old) lvs. of *Eucalyptus leucoxylon* and *E. odorata* (dets. NM); reared on the latter. Adults (A) fly mid Feb.–early May (peak late March–early April); univoltine. The majority of ♀♀ (rarely seen at light) come in before 2300 hrs; most of the ♂♂ come in after 2300 hrs and are abundant at uv. light here. Differences in the ♂ & ♀ forewing coloration and maculation are notable in this sp.; most ♂♂ here are almost immaculate on the forewings and thorax. See McFarland (1972b: 235) for egg photos. (Preserved = 1–6, 9; photos = 1, ♂1c, 2, 5, 5c, 6.)

Nigasa—see *Arhodia*.

Oenochroma—see also *Macrotenia*.

• *Oenochroma vinaria* Gn. (det. IC, SF)—G.77, 77A, 77B, & 77C. (1) S.AUST., Blackwood–Belair district and Adelaide city and other suburbs (NM): Larvae (winter–early summer) on various eastern **Grevillea* spp. used commonly in gardens as ornamental shrubs and hedges; among these is also included the tree, silky-oak, **G. robusta* A. Cunn.—PROTEACEAE (det. NM). The “wild” populations in native scrub areas of the Belair district (as opposed to those in the city and suburban gardens), feed almost exclusively on tough-sclerophyll *Hakea* spp. (needle-bushes), esp. *H. rostrata* (det. NM), eating both old and young lvs., but preferring the latter when available. (I have never found them on the only native *Grevillea* of the Belair district, *G. lavandulacea*.) The older larvae often rest outstretched (lasiocampid or catocaline-style) along the lower woody or brown parts of stems, coming up to feed after dark. Adults (B+) recorded for all months (peaks Oct.–Dec., March–May, & late July); the majority (both sexes) come to uv. light after 2300 hrs. Both sexes are highly variable in ground color; less so in maculation. A washed-out print showing the usual resting position of an adult ♂ of this sp. as viewed from two different angles appears on the cover of *J. Res. Lepid.* 14(1), with comments on p. 60. See also Common (1966b: 81) and Tillyard (1926: Pl. 39) for ♂ adult photos; Common (1970: 849, fig. B) for illus. of final instar larva. (Preserved = 1–6, 9; photos = 1, 1c, 2, 5, 6.) (2) S.AUST., ± 8 mi. NE of Two Wells, on whitish sandhills (NM & TN): Larvae (20 Aug. 66) on *Grevillea ilicifolia* R. Br. (det. MK). (3) S.AUST., south coast of Kangaroo Is., ± 10 mi. W of Vivonne Bay (NM & G. D. Seton): Larva (10 Oct. 66) on the very tough old lvs. of *Hakea muelleriana* Black (det. MK); no new growth was present anywhere on the plant. (4) W.AUST., on the west coast, 21 mi. S of Lancelin (NM & N. B. Tindale): Larvae (9 Nov. 68) common, feeding on young lvs. and fls. of the common and widespread *Hakea trifurcata* (Sm.) R. Br. (det.

WAH). (5) W.AUST., ± 2 mi. NNE of Howatharra Hill Reserve, or ± 21 mi. NNE of Geraldton (D. & NM): Mature larvae (6 Oct. 74) on the fully-open fls. of *Hakea auriculata* Meisn. (det. WAH), very plump and feeding avidly; a few were also eating tender new lvs. where present, but the fls. were clearly preferred. (6) W.AUST., Moresby Ranges, Oakajee district, ± 16 mi. NNE of Geraldton (NM): Larvae (13 Oct. 74) on tender new lvs. of *Hakea lissocarpha* R. Br. (det. WAH).

• *Onychopsis lutosaria* (Felder) (det. NM)—G.219. VIC., Red Hill, south of Melbourne (eggs through D. R. Holmes; orig. ♀ 14 Feb. 70): Captive larvae (March–April 70) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM) at Blackwood, S. Aust. To my knowledge, this sp. has never been collected in the Mt. Lofty Range. Sexual dimorphism is notable; a good color illustration of the ♀ is given by Common (1966b: 72). (Preserved = 1–6, 9; photos = ♂ ♀ 1, ♂ 1c, 5, ♂ 6.)

Ophiographa—see *Dinophalus* and *Lissomma*.

• *Parepisparis* sp. (det. IC)—G.226. N.QLD., Atherton Tableland ($\pm 2500'$ el.), at Tinaroo Pines Caravan Park (NM & N. B. Tindale): The original ♀ adult (10 May 72) came to uv. light; eggs obtained. Captive larvae (late May–June 72) readily accepted young and semi-mature lvs. of *Eucalyptus ?polycarpa* FvM. (det. BH). Unfortunately, this rearing could not be completed, as we were leaving the locality in late June; the larvae refused other offered eucalypt lvs. that were encountered in transit, thus dying. (Preserved = 1–5.)

• *Phallaria ophiusaria* Gn. (det. IC, SF)—G.80. S.AUST., Blackwood-Belair district (NM): Captive larvae (June–Oct.) accepted mature lvs. of *Dodonaea viscosa*; I was told (by an eastern correspondent) that this was the only foodplant of *P. ophiusaria*, and so did not bother to offer them any of the other local native plants. They grew fairly well on the *Dodonaea*, but I have no evidence that they prefer it (or are ever to be found on it) in this habitat. On several subsequent occasions, however, larvae were collected at night (Sept., at Blackwood), feeding on tough mature lvs. of *Acacia pycnantha*, and during diurnal beating (July–Sept., at Belair) on tough mature lvs. (no new growth present on the shrubs) of *Hakea rostrata* (dets. NM). Relatively few of the "Macro" spp. normally feeding on *A. pycnantha* or *H. rostrata* will eat the very tough oldest lvs., a point of interest in the case of this moth. New lvs., in fact, do not normally begin to appear on *A. pycnantha* or *H. rostrata* until early spring (Sept.–Oct. \pm), by which time the *Phallaria* larvae have already been feeding and growing (very slowly) for 4–5 months. They are mostly in last instar by Sept.–Oct. in this locality. Adults (B) fly mid Feb.–late March (short peak in early–mid March only); univoltine. By far the majority of individuals come to uv. light after 2300 hrs; both sexes are about equally represented at light; if anything, ♀ ♀ come in more often than ♂ ♂ (the reverse of the usual situation). A moderate degree of variation is seen in the wing groundcolors (from ashy-gray to brown to pale tan). See McFarland (1972b: 237) for egg photos. (Preserved = 1–6, 9; photos = 1, 2, 5, 5c.)

• *Phrixocomes* sp., nr. *ptilomacra* Lower (det. NM)—G.157. S.AUST., south coast of Kangaroo Is., ± 10 mi. W of Vivonne Bay (NM & G. D. Seton): Larvae (19 Oct. 66) on *Melaleuca oraria* J. M. Black and *M. gibbosa* Labill.—MYRTACEAE (dets. MK); the former appears to be preferred in this locality. An adult ♂ emerged 4 Dec. 66. (Preserved = ♂ 1, ♀ 4, ♀ 5, 6; photos = ♂ 1.)

Rhynchopsota—see "*Chlenias*" *rhyncophora* Lower (Ennominae).

Miscellaneous Unidentified Oenochrominae

• ?*Dinophalus* sp. (det. NM)—G.224. W.AUST., on the west coast ± 3 mi. S of Kalbarri, nr. Red Bluff Caravan Park (D. & NM): Larvae (late Nov.–mid Dec. 71) feeding both day and night on young lvs. of *Grevillea ?trachytheca* (det. NM), and resting among the lvs. close to areas of feeding. No adults were successfully reared. (Preserved = 5, 6, 9; photos = 5.)

(E) SUBFAMILY STERRHINAE (SYN. = ACIDALIINAE)

- *Chrysocraspeda cruoraria* (Warren) (det. IC)—G.228. N.QLD., Atherton Tableland ($\pm 2500'$ el.), 12 mi. NE of Atherton, nr. Tinaroo Pines Caravan Park. (D. & NM): Captive larvae (June 72) readily accepted young and semi-mature lvs. of *Eucalyptus ?polycarpa* FvM. (det. BH). Completion of this rearing was not possible, as it was necessary to leave the locality in late June; the larvae died in transit. They were, however, thriving on the above eucalypt prior to departure. See Tillyard (1926: Pl. 39) for a ♂ adult photo of the closely-related *C. aurimargo* Warr. (Preserved = 1-4, 9.)
- *Eois (Idaea) costaria* (Walk.) (det. SF)—G.83; ?G.209. S.AUST., Blackwood (NM): Captive larvae (May-June) readily accepted buds and fls. of wireweed, **Polygonum ?aviculare* L.—POLYGONACEAE (det. NM); the lvs. were also accepted after about 3rd instar. Adults (A) fly \pm Oct.-May (peak Nov.-April). (Preserved = 1-6, 9; photos = 2, 5.)
- *Eois (Idaea) philocosma* (Meyr.) (det. SF)—G.197. S.AUST., Blackwood (NM): Captive larvae (Jan.-March 69) readily accepted lvs. and floral parts of **Polygonum ?aviculare* L. (det. NM). Adults (A) fly spring-autumn (peak Jan.). (Preserved = 1-6, 9; photos = 1, 2, 5, 6.)
- *Scopula (Acidalia) optivata* (Walk.) (det. SF)—G.198. S.AUST., Blackwood (NM): Captive larvae (Jan.-Feb. 69) readily accepted lvs. of **Polygonum ?aviculare* L. and bur clover, **Medicago polymorpha* var. *vulgaris* (Benth.) Shinnars (dets. NM); of the two, the former was preferred. Adults (A) fly spring-autumn (peak Jan.). (Preserved = 1-6, 9; photos = 1, 2.)
- *Scopula (Acidalia) rubraria* (Dbldy.) (det. IC)—G.97. S.AUST., Blackwood (NM): Captive larvae (May-June) avidly accepted lvs. of the common lawn weed, plantain or ribwort, **Plantago lanceolata*—PLANTAGINACEAE (det. NM). Adults (A+) recorded for every month (peak Dec.-March); they rest by day among weeds and grasses, hanging from stems, etc., and are particularly common around weedy, uncut lawns. They are quick to take flight if approached in the daytime (flying low and only short distances), but could not really be considered diurnal in habit. (Preserved = 1-6, 9; photos = 1c, 5.)

Miscellaneous Unidentified Sterrhinae

- *Genus? sp.?*—G.229. N.QLD., Atherton Tableland, 16 mi. ESE of Mareeba, on a rocky ridge-top 6 mi. up Davies Creek Rd. (D. & NM): A single larva (4 June 72) on fl. buds of the shrubby *Acacia leptostachya* Benth. (det. L. Pedley). This most distinctive small larva could be mistaken for no other; unfortunately it died in the pupal stage. (Preserved = dry skin of 5, dried and shrunken 6, 7; photos = 5.)

IMMIDAE

- *Imma vaticina* Meyr. (det. IC)—N.QLD., Clifton Beach, ± 14 mi. N of Cairns (D. & NM): Larvae (9 May 72) on lvs. of the shrub, *Fenzlia obtusa* Endl.—MYRTACEAE (det. BH). Adults (♂, ♀) emerged 22 May 72; in A.N.I.C., Canberra. See also Common (1979: 36). (Preserved = 1, 6, 7.)

LASIOCAMPIDAE

- *Crexa acedesta* Turner (det. IC)—La.20. S.AUST., Blackwood-Belair district (NM): Captive larvae (March) readily accepted the pendulous mistletoe, *Amyema miquelii*, parasitizing *Eucalyptus odorata*; never on *Exocarpos* here (det. NM). Adults fly Feb.-March; rarely seen at uv. light. Sexual dimorphism is fairly notable. See Common (1966b: 89) for ♂ & ♀ adult photos. (Preserved = 1-7, 9; photos = 2, 2c, 3.)

- *Crexa punctigera* Walk. (det. IC)—La.16 (a synonym may be *Sitina anthraxoides* Walk., in B.M.N.H.). S.AUST., Blackwood-Belair district (NM): Larvae (Aug.–April) fairly common on the shrubby root-parasite, *Exocarpos cupressiformis* (det. NM). Adults fly spring–summer; rarely seen at uv. light here. Sexual dimorphism is notable. See Common (1966b: 89) for larval photo of this sp. at rest on *Exocarpos*. (Preserved = 1, 4–7, 8h, 9; photos = 6.)
- *Digglesia australasiae* (Fab.) (det. IC)—La.15. S.AUST., Blackwood-Belair district (NM): Larvae (most months of the year) on various shrubs, including *Acacia* spp. and (especially) *Exocarpos cupressiformis* (det. NM). Adults (A) fly most months, with peaks in March–April & July; both sexes frequent at u.v. light (especially after 2300 hrs). See Common (1966b: 91) or Tillyard (1926: Pl. 30) for ♂ adult photo. (Preserved = 1–6, 9; photos = 1, 2, 5c, 6.)
- *Digglesia rufescens* (Walk.) (det. SF)—La.18. S.AUST., Blackwood (NM): Captive larvae (Aug. & Jan.) readily accepted young lvs. of *Eucalyptus odorata* (det. NM). Adults (B) fly Dec.–Feb. & May–July, with peaks in Dec., Feb., & late June–early July; both sexes frequent at uv. light. See McFarland (1970: 349 & 1972b: 223) for egg photos. (Preserved = 1–7, 9; photos = 2, 5, 6.)
- *Entometa* sp. (det. NM)—La.14. S.AUST., Blackwood-Belair districts (NM): Larvae (spring–summer) on *Eucalyptus leucoxydon* and *E. odorata* (dets. NM). Adults (B) fly March–April (univoltine), esp. after 2300 hrs; both sexes come to uv. light. Coloration of ♂ & ♀ nearly identical in this species; forewings are pale tan and hindwings are pale orange. A distinguishing feature of this (very large) sp. is its dense and tough elliptical cocoon, the smooth outer surface of which is “dyed” bright green (by a fluid injected into the silk by the larva, during the early phases of cocoon-construction); inner cocoon-lining of silk is pure white, however. Regarding the “?” preceding the reared hymenopterous parasites cited below: These are presumed from another closely-related *Entometa* sp., which is the common one in the Adelaide city area, where these parasite cocoons were collected from a moribund mature larva at Collinswood, S.AUST., in a city garden (8 Dec. 66, Mrs. R. Smith). See Common (1966b: 91) for ♂ & ♀ adult photos probably of this sp.; see also Common (1970: 850). (Preserved = 1–7, ?8h, 9; photos = 7.)
- Opsirhina*—see *Digglesia*.
- *Perna exposita* (Lewin) (det. IC)—La.19. S.AUST., Blackwood-Belair-Eden Hills district (NM): Larvae (most months; peak Dec.–Feb.) on mature foliage of *Casuarina stricta* (det. NM). These larvae have only been collected on the tree, *C. stricta* in this locality, never on the shrubby *C. muelleriana* which I have beaten extensively (all seasons) in search of various larvae. Adults (B) fly spring–autumn; both sexes frequent at uv. light. See Common (1966b: 91) for ♂ adult photo. (Preserved = 1–7, 9; photos = 2, 5.)
- *Perna* sp. nov. (det. IC)—La.23. S.AUST., N. Flinders Ranges, 3½ mi. S of Arkaroola Homestead, at roadside (NM): Larvae (30 Oct. 69) on *Casuarina* sp. (a tree). The adult is somewhat larger than *P. exposita* and very much paler, with only faint (pale tan) maculation on the whitish forewings. (Preserved = 1, 5.)
- *Pinara ?cana* Walk. (det. SF)—La.22. S.AUST., Belair, Gloucester Ave. at Ralph St. (A. Kowanko): Captive larvae (Sept. 69) readily accepted young lvs. of *Eucalyptus odorata* (det. NM). Adults fly late winter–autumn; rarely seen at uv. light here. Sexual dimorphism is notable. See Common (1970: 850) for ♂ adult photo of *P. cana*. (Preserved = 1–7; photos = 2, 6.)
- *Porela galactodes* (Lower) (det. IC)—N.QLD., Atherton Tableland, 12 mi. NE of Atherton, nr. Tinaroo Pines Caravan Park (± 2500') (D. & NM): Larva (late March 72) on small sapling of the tree, *Casuarina littoralis* Salisb. (syn. = *C. suberosa*) (det. BH). A deformed adult ♂ emerged 16 June 72; in A.N.I.C., Canberra. (Preserved = ♂ 1, 5 head capsule only, 6, 7.)

Sitina—see *Crexa*.

LIMACODIDAE

- *Calcarifera ordinata* (Butl.) (det. IC)—Lm.7. (1) W.AUST., Moresby Range, \pm 15–20 mi. NNE of Geraldton, in the Oakajee-Howatharra district: Gaudy larvae (Aug.–mid Oct.) abundant (most years) on 3 spp. of small, low-growing shrubby acacias here: *Acacia ericifolia* Benth., *A. oxyclada* F. Muell. ex Benth., and *A. ulicina* Meisn. (dets. B. R. Maslin). These acacias all have small, narrow (linear) phyllodes. *C. ordinata* larvae are sometimes so common (locally) as to defoliate their foodplants; they make no attempt to hide at any time and are most conspicuous. Adults fly mid Feb.–early April (\pm); sexes similar in appearance; univoltine. (2) W.AUST., Moresby Range, Howatharra Hill Reserve, \pm 19 mi. NNE of Geraldton (McFarland, 1977: 19): The preferred foodplant, in this specific locality, seems to be *Acacia ulicina*, but *A. ericifolia* is also frequently eaten; *A. oxyclada* is not present on the reserve. (Preserved = 1, 4–7, 9.) Other records from Howatharra Hill Reserve: 25 Aug. 77 (NM), one last instar seen feeding on tough, mature stems(!) of *Brachysema aphyllum* Hook.—FABACEAE (det. NM); 17 Sept. 77 (NM), 2 last instars feeding on old (tough) lvs. of *Gastrolobium oxylobioides* Benth. (Champion Bay Poison Bush!)—FABACEAE (det. NM), in Zone 3 (SW); 25 Aug. 77 (NM), 2 last instars on mature (tough) phyllodes of *Acacia acuminata* in Zone 5 (WC) and 2 feeding on a low, shrubby, “broom-like” *Jacksonia* sp. (NM.1175)—FABACEAE, in Zone 4 (C); 28 Sept. 77 (NM), one last instar feeding on leathery, mature phyllodes of *Acacia ?saligna* Wendl. (det. NM), in Zone 5 (NE). (3) W.AUST., Northampton, on Lot 351 (Wannereenooka Rd.). Larvae (L5–1 Sept. 77) abundant on *Acacia tetragonophylla* F. Muell. (det. NM).
- *Doratifera oxleyi* (Newman) (det. IC)—Lm.5. S.AUST., Blackwood (NM): Larvae (July–Oct.) abundant on mature lvs. of *Eucalyptus odorata* (det. NM); young larvae scar the lf. surfaces with their characteristic “feeding-grooves.” (But see also the zygaenid, *H. tricolor*.) Adults (A+) fly March–April only; ♀♀ abundant at uv. light, but ♂♂ rarely come to uv. light; univoltine. Peak of ♂ activity probably diurnal (from \pm 1000–1500 hrs). Sexual dimorphism is striking in this moth. See Common (1966b: 67) for ♂ & ♀ adult photos; Tillyard (1926: Pl. 30) for ♂. See McFarland (1970: 349 & 1972b: 219) for egg photos. (Preserved = 1–3, 5–7, 8dhh, 9; photos = 2.)
- *Doratifera quadriguttata* Walk. (det. SF, IC)—Lm.4. S.AUST., Blackwood (NM): Larvae (Jan.–Feb.) on mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B+) fly Nov.–early Feb. (peak Dec.); sexes similar in appearance and both nocturnal; univoltine. (Preserved = 1–5, 9; photos = 2.)
- “*Parasa*” sp. (det. IC)—Lm.6. W.AUST., Drummond Cove, \pm 7 mi. N of Geraldton (NM): Captive larvae (summer) readily accepted mature and semi-mature lvs. (phyllodes) of the dominant shrub or low tree of this locality, *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). Adults (B+) fly Nov.–early April (peak Dec.–Feb.); multiple-brooded; sexes similar in appearance and both nocturnal; ♀ rarely taken at uv. light here. Egg very reminiscent of the *Pseudanapaea trigona* egg. (Preserved = 1–7, 9.)
- *Pseudanapaea trigona* (Turner) (det. IC)—Lm.3 (a synonym may be *P. dentifascia* Hering, in B.M.N.H.). S.AUST., Blackwood (NM): Larvae (early spring–autumn) on mature lvs. of *Eucalyptus odorata* (det. NM). Adults (A) fly Oct.–May (peaks Nov.–Dec. & Feb.–April); multiple-brooded; sexes similar in appearance and both nocturnal. The egg is most distinctive with a very soft and entirely transparent chorion. See McFarland (1970: 349 & 1972b: 219) for egg photos. (Preserved = 1–6, 9; photos = 1–3, 5–7.)

LYMANTRIIDAE

- *Acyphas leucomelas* (Walk.) (det. IC)—Lp.8, 8A, 8B, & 8C. (1) S.AUST., Blackwood-Belair district (NM): Larvae (Aug.–Oct.) abundant on young lvs. of

Acacia pycnantha (det. NM). Although they eat only the young lvs., they usually rest well down the stems on reddish-brown scarred (or partly-damaged and twisted) mature phyllodes, where their colorful maculation renders them surprisingly inconspicuous. Also (less often) found on a variety of other plants, some specific records being *Acacia armata*, *Pultenaea largiflorens* var. *latifolia*, *Exocarpos cupressiformis*, *Dodonaea viscosa*; also *Myoporum viscosum* R. Br.—MYOPORACEAE and *Eucalyptus odorata* (dets. NM). Adults (A) fly Oct.–Dec. & Feb.–April; sexes similar in appearance and both come to uv. light. See Common (1966b: 107) for ♂ adult photo of this or a closely-related sp. (Preserved = 1–6, 8h, 9; photos = ♀ 1c.) (2) S. AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, on land of G. D. Seton (NM): Larvae (mid Oct. 66) on the low, rounded, “broom-like” root-parasite, *Choretium glomeratum* R. Br.—SANTALACEAE (det. MK); also on new lvs. of *Platylobium obtusangulum* Hook.—FABACEAE (det. NM). (Preserved = 5.) (3) W. AUST., at Lot 68, Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Larvae (most months, but especially Aug.–March) abundant and conspicuous on *Acacia ligulata* A. Cunn. ex Benth. (det. NM); usually on rather thick mature phyllodes, rasping the surfaces, or partially eating in from the edges. Often on low, dense, windblown specimens of *A. ligulata* along the slopes and ridges of the sandhills, close to the beach. This population may be a distinct subspecies of the eastern *leucomelas*. (Lp.8C: preserved = 1, 5–7, 8ddhh, 9.)

Euproctis aliena Butler (Type in B.M.N.H.)—see synonym, *A. leucomelas* (Walk.).

• *Euproctis marginalis* (Walk.) (det. IC)—Lp.11. S.AUST., Blackwood (NM): Captive larvae (Dec.–Jan.) accepted mature lvs. of *Eucalyptus odorata* (det. NM). Nocturnal feeders, probably hiding under loose bark by day. Adults (A) fly Nov.–Jan. (♀ ♀ mostly not before late Dec.); sexes similar in appearance and both nocturnal; ♀ ♀ to uv. light mostly before 2300 hrs and ♂ ♂ mostly after; univoltine. See Common (1966b: 107) for ♀ adult photo of a closely-related sp. (Preserved = 1–5, 9; photos = 1.)

• *Habrophylla euryzona* (Lower) (det. IC)—Lp.12. (1) S.AUST., south coast of Kangaroo Is., at Seal Bay (NM, M. Pate, & G. D. Seton): Mostly fullgrown larvae (16 Oct. 66) exceedingly common, crawling over the sand in association with larvae of my An.6A (Anthelidae) and Ar.34A (Arctiidae); seen eating various low-growing annual winter herbs (ephemerals), as follows: *Crassula* sp.—CRASSULACEAE; *Daucus glochidiatus* (Labill.) Fisch., Mey., & Avé-Lall., and *Hydrocotyle* sp.—both APIACEAE (dets. MK). Adult ♂ ♂ probably fly from late Oct.–early Nov.; univoltine. The ♂ is diurnal, with a peak of activity in mid to late afternoons of sunny, still days, according to the late J. O. Wilson (pers. comm.). Sexual dimorphism in this sp. is stupendous! The ♀ is wingless and highly degenerate. (Preserved = ♂ ♀ 1, 2, 4–♂ ♀ 6, 7, 8dh, 9; photos = ♂ 1.) (2) S.AUST., on coast S of Adelaide, Normanville dunes (NM & Mr. & Mrs. J. O. Wilson): Small to half-grown larvae (26 May 69) abundant, crawling over the dune sand, mostly nr. or under shrubs, where they were resting and feeding on the small to very small (recently-germinated) seedlings of winter annuals (various unidentified plant spp. involved).

• *Orgyia anartoides* (Walk.) (det. IC)—Lp.9. S.AUST., Adelaide city & suburbs, and Blackwood (NM): Larvae (most seasons, but especially winter) on many woody plants. Specific examples: *Acacia pycnantha*, *Hardenbergia violacea*, *Exocarpos cupressiformis*, **Betula* sp. (birch)—BETULACEAE, and the semi-woody, orange-flowered **Lantana* sp.—VERBENACEAE (dets. NM). The moth is more common in city & suburbs (garden situations) than in relatively undisturbed areas where the native flora still predominates. Adult ♂ ♂ (♀ degenerate & wingless) fly in spring–summer (B– at Blackwood). Sexual dimorphism is spectacular, very similar to the North American tussock moths (*Hemerocampa*). (Preserved = 1, 4–7, 9.) See Common (1966b: 105, 107) for ♂ & ♀ adult photos and probably the larva; Tillyard (1926: Pl. 30) for ♂ adult).

NOCTUIDAE

- *Achaea janata* (L.) (det. NM)—N.125. W.AUST., Exmouth Gulf district (North West Cape), in the low, coastal sandhills immediately SE of Norcape Lodge; also in a similar situation ± 10 –12 mi. S of Exmouth P.O. (D. & NM): Eggs and larvae of various sizes (7 July 77) on 3 common, low-growing, annual euphorbias, *Chamaesyce sharköensis* (Baillon) Hassall ms., *C. australis* ssp. *glaucescens* (Boiss.), and *C. coghlanii* (F. M. Bail.) Hassall—EUPHORBIACEAE (det. D. Hassall, 1978). The locality had had one major rain about mid-late May; by early July most annuals were rapidly maturing (flowering and setting seed). These large, dark larvae made little attempt to hide and were thus very conspicuous on their foodplants when full-grown; when small, their dark frass on the fine, white sand was an obvious clue. By mid July all had pupated; adults emerged Aug. 77. See Common (1966b: 117) for adult photo. (Preserved = 1, 6.)
 - *Aedia acronyctoides* (Gn.) (det. NM)—N.96. S.AUST., Blackwood-Eden Hills district (NM): Larvae (Oct. & Jan.) on open, grassy-rocky slopes, on Australian bindweed, *Convolvulus erubescens* Sims.—CONVOLVULACEAE (det. MK). Adults (B-) fly Oct.–April (peaks Nov. & Jan.–Feb.). See Common (1966b: 119) for adult photo. (Preserved = 1, 5, 9.)
 - *Anomis flava* (Fab.) (det. IC)—N.121. N.QLD., Atherton Tableland, Atherton, at the Forestry Regional Research Station (A. Irvine): Larvae (April 72) abundant on *Hibiscus diversifolius* Jacq.—MALVACEAE (det. BH). (Preserved = 1, 5, 6, 8d.)
 - *Bucyara bipartita* Walk. (det. IC)—N.94. S.AUST., Blackwood-Belair districts (NM): Larvae (July–early Sept.) nocturnal feeders on new growth of *Hibbertia exutiacies*, *H. sericea*, and *H. stricta* (dets. MK). Adults (B+) fly late Nov.–mid May (peaks Dec. & April); coming to u.v. light mostly after 2300 hrs, rarely before. (Preserved = 1, 2, 4–7, 9; photos = 1, 2.)
 - *Calathusa ischnodes* (Turner) (det. IC)—S.AUST., Aldinga, in \pm virgin bushland area (Mr. & Mrs. J. O. Wilson): Larvae (April 67) on *Casuarina striata* Macklin. (det. J. O. Wilson). Adult (emerged Oct. 67) in the late J. O. Wilson's collection, which has recently gone to the A.N.I.C., Canberra. (Preserved = 1, 6.)
 - *Callopietria maillardi* Gn. (det. IC, SF)—N.118. N.QLD., Atherton Tableland, at Tinaroo Pines Caravan Park ($\pm 2500'$ el.) (D. & NM): Larvae (April–June 72) in garden on young and semi-mature lvs. of the ornamental fern, **Nephrolepis ?cordifolia* (var. ?)—POLYPODIACEAE (det. by Limberlost Nursery, Cairns). I am indebted to IC for the specific det. and to SF for the generic placement. (*Eriopus Treitschke*, 1825, is a junior objective synonym of *Callopietria* Hübner, 1821.) It is of interest to note that the living larvae of 3 Japanese *Callopietria* spp. are depicted (with photographs) on various ferns by Mutuura et al. (1970: Pl. 32, figs. 97–99); of the spp. they figure, *C. juvenina obscura* Butler is fairly close in appearance to *C. maillardi* (especially the adult). (Preserved = 1, 5, 6, 9.)
 - *Canthylidia zorophanes* Turner (det. IC)—N.123. W.AUST., beach areas of Drummond Cove, ± 7 mi. N of Geraldton (NM): Larvae (Sept.–Oct.) abundant, mostly on the staminate (σ) fls. of the conspicuous beach grass, *Spinifex longifolius* R. Br.—POACEAE (det. NM). Adults (A) fly autumn–spring (peak winter). (Preserved = 1, 5, 6.)
- Catephia*—see *Aedia*.
Corrha—see *Praxis*.
- *Cremnophora angasi* Walk. (det. NM)—N.116. S.AUST., ± 10 mi. NW of Tintinara, at roadside (TN): Larvae (mid Sept. 69) conspicuous on the low-growing *Halgania cyanea* Lindl.—BORAGINACEAE (det. MK). Reared adult in Newbery Collection. (Preserved = 5.)
 - *Dasypodia selenophora* Gn. (det. NM)—N.100. S.AUST., Mt. Lofty Range, Stirling West (NM): Captive larvae (Nov.) readily accepted young lvs. of *Acacia*

pycnantha (det. NM). Adults recorded for most months except winter. See Common (1966b: 119) for adult photo. (Preserved = 1-3, 5, 6, 8d, 9.)

• *Diatenes igneipicta* (Lower) (det. IC)—S.AUST., 5 mi. E of Two Wells (NM): Larva (19 March 67) beaten from *Acacia ligulata* A. Cunn. ex Benth. (det. MK). Adult emerged 12 Dec. 67. (Preserved = 1, 6, 7.)

• *Donuca spectabilis* Walk. (det. IC)—N.115. W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Captive larvae (Dec. 72) readily accepted lvs. (phyllodes) of *Acacia ligulata* A. Cunn. ex Benth. (det. B. Maslin). Adults (B-) fly spring-summer. (Preserved = 1-6, 9.)

• *Earias huegeli* Rog. (det. IC)—N.117. W.AUST., 2 mi. S of Kalbarri, Red Bluff Caravan Park (D. & NM): Larvae (early Nov. 71) on and inside buds, fls., & green seed capsules of the shrub, *Alyogyne hakeifolia* (Giord.) Alef.—MALVACEAE (det. WAH). Adults fly spring-summer. See Common (1970: 863) for adult photo. (Preserved = 1, 3-7, 8d, 9.)

Eriopus—see *Callopietria*.

• *Eublemma glaucochroa* Turn. (det. IC)—N.120. N.QLD., Atherton Tableland, nr. Tinaroo Pines Caravan Park (± 2500' el.) (NM): Larvae (April 72) in "fuzz-nests" on lvs., and in lf. buds and growing tips of the weedy-herbaceous *Pterocaulon sphacelatum* Benth. & Hook.—ASTERACEAE (det. BH). (Preserved = 1, 5, 6, 8h, 9.)

• *Euplexia dolorosa* (Walk.) (det. IC)—N.119. N.QLD., Atherton Tableland, nr. Tinaroo Pines Caravan Park (± 2500' el.) (NM): Larvae (April 72) on lvs. of *Pterocaulon sphacelatum* Benth. & Hook. (det. BH), and *P. glandulosum* Benth. & Hook. (det. NM)—ASTERACEAE. The former appears to be preferred in this locality. (Preserved = 1, 5, 6, 8d, 9.)

Istarca—see *Sandava*.

Liocola—see *Paracrama*.

Maurilia—see *Paracrama*.

• *Meyrickella torquesaria* (Lucas) (det. IC)—N.QLD., Atherton Tableland, 8 mi. E of Mareeba, along rd. to Kuranda (D. & NM): Larva (4 June 72) and pupa (in cocoon) on native "pine," *Callitris columellaris* ssp. *intratropica* R. T. Bak.—CUPRESSACEAE (det. I. Telford). The superb adult ♂ emerged 12 June 72. (Preserved = 1, 5, 6.)

• *Neumichtis saliaris* Gn. (det. SF)—N.104. S.AUST., Blackwood (NM): Captive larvae (Sept. 66) readily accepted the annual bur clover, **Medicago polymorpha* var. *vulgaris* (Benth.) Shinnars (det. NM)—FABACEAE. Adults (B) fly spring-summer. (Preserved = 1-6.)

• *Nitocris callimera* (Lower) (det. IC)—N.114. (1) W.AUST., south coast at Eucla ghost town, on white sand dunes (NM & N. B. Tindale): Larvae (Oct.-Nov. 68) always under the sand, usually under or near the bases of small woody shrubs, where they remain by day. They feed on (unidentified) plant parts, which are just under the drifting, windblown sand. Several of the common plants of this habitat probably serve as food. Undoubtedly involved are certain shrubs in the CHENOPODIACEAE; possibly also grasses. The larvae wander about at night, always sub-surface, leaving concave, meandering trails (grooves) in the sand, reminiscent of the common and conspicuous trails made by certain abundant wandering antlion larvae of this same habitat (Neuroptera: Myrmeleontidae: *Acanthaclisus* spp.). Adults emerged after a period of hot days in Jan.-Feb. 69; probably univoltine. (Preserved = 1, 4-6, 8dd, 9.) (2) S.AUST., west coast of Eyre Peninsula, nr. Elliston, on white sand dunes (D. & NM): Larvae (16 Oct. 71) abundant under conditions almost identical to above; fresh (soft), green frass was under the sand with the resting larvae. Plants involved not identified.

• *Omphaletis norologa* (Meyr.) (det. NM)—N.103. S.AUST., ± 8 mi. NE of Two Wells, around borders of sandhills; also nr. Kangaroo Flats, in similar habitat (NM & TN): Larvae (20, 27 Aug. 66) on the shrub, *Rhagodia parabolica* R. Br.—CHENO-

PODIACEAE (det. MK). Extremely abundant (by beating); preferred are more dense or compact individuals of the foodplant, especially those in close contact with the ground. (Preserved = 1, 4-7, 9.)

• *Pantylidia ?capistrata* Lucas (det. IC)—W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (NM): Larva (May 73) feeding at night on *Acacia ligulata* (det. B. R. Maslin). Adult emerged 5 Aug. 73. (Preserved = 1, 6.)

• *Pantylidia sparsa* Gn. (det. IC)—S.AUST., Yorke Peninsula, nr. Cunliffe (NM, N.B. Tindale, & P. Aitken): Larva (early Nov. 65) on the shrubby root parasite, *Exocarpos aphyllus* R. Br. (det. MK). Adult emerged late Nov. 65. See Common (1966b: 119) for adult photo. (Preserved = 1, 6, 7.)

• *Paracrama iocephala* (Turner) (det. IC, SF)—N.108. S.AUST., Adelaide city & suburbs, especially at Hurtle Square and on the Adelaide Univ. campus (NM): Larvae (Nov.-June) locally abundant on the N.S.W.-Qld. trees (planted here as ornamentals), **Lagunaria patersonii* G. Don.—MALVACEAE, and kurrajong, **Brachychiton populneum* R. Br.—STERCULIACEAE (dets. MK). Adults (B) probably fly most months, except midwinter; rare at Blackwood. (Preserved = 1, 4-7, 8h, 9; photos = 1, 6.)

• *Plusia ?argentifera* Gn. (det. SF)—N.101 (possibly = *subsidents* Walk.). S.AUST., Adelaide city, at S.A. Muscum (NM): Larvae (late May) defoliating ornamental geraniums, **Pelargonium* sp.—GERANIACEAE (det. NM), growing in window-boxes. (Preserved = 1, 4-7, 8h, 9; photos = 5, 6.)

• *Praxis alterrima* (Walk.) (det. IC)—N.102. (This may = synonym of the Lower ms. name, "*Corrha pandesma*.") S.AUST., Eden Hills, Yalanda St. (orig. ♀ from G. Furness): Captive larvae (Aug.-Sept.) readily accepted new lvs. of *Acacia pycnantha* (det. NM). Adults (B+) fly late May-Aug. (peak July); univoltine. (Preserved = 1-7, 9.)

Proteuxoa—see *Omphaletis*.

• *Sandava scitissignata* Walk. (det. SF)—N.97. (1) S.AUST., Blackwood (NM): Captive larvae (Nov. 65) readily accepted and completed growth upon fresh commercial mushrooms, **Psalliota arvensis* Schaeff. ex Secr.—AGARICACEAE, s.s. (det. MK). Adults (B-) fly late Sept.-early May (peaks Oct., March), coming to u.v. light esp. after 2300 hrs. (Preserved = 1-5, 9; photos = 1, 2.) (2) S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay (NM): One larva (1 Jan. 66) found under loose bark of a dying *Eucalyptus* sp. (probably eating fungi, or fungal mycelia, which were present on this tree trunk).

Adults of this sp. have also been taken at u.v. light at Drummond Cove, W.AUST., ± 7 mi. N of Geraldton (uncommon).

• *Spodoptera litura* (Fab.) (det. IC)—W.AUST., Geraldton (NM): Larva (Oct. 73) on tree tobacco, **Nicotiana glauca* Grah.—SOLANACEAE (det. NM); the record is of interest because nothing else has been observed feeding on this common weed here. Adult emerged 25 Nov. 73 at 2140 hrs. (Preserved = 1, 6.)

NOLIDAE

• *Aquila tactalis* (Walk.) (det. IC)—Nl.8 & 8A. (1) W.AUST., 2½ mi. S of Kalbarri, Red Bluff Caravan Park (D. & NM): Captive larvae (Nov. 71) readily accepted young lvs. of the locally abundant shrub, *Melaleuca megacephala* F. Muell.—MYRTACEAE (det. WAH). Made typical nolid cocoons of bark surface splinters chewed off the foodplant stem and woven together from the inside. Adults fly spring-summer-? (Preserved = 1-7, 9.) (2) S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, around shore of a small, freshwater lagoon (NM & G. D. Seton): Larva (mid Oct. 66) on mature lvs. of a tough, dwarfed individual of the shrub, *Melaleuca gibbosa* Labill.—MYRTACEAE (det. MK). See Common (1970: 863) for adult photo. (Preserved = 5, 9.)

Celama—see *Nola*.

Coesa—see *Uraba*.

- *Nola bifascialis* (Walk.) (det. IC)—N.QLD., Clifton Beach, \pm 14 mi. N of Cairns (D. & NM): Larva (9 May 72) on the shrub, *Fenzlia obtusa* Endl.—MYRTACEAE (det. BH). Adult (δ) emerged 30 May 72. (Preserved = 1, 6, 7.)
 - *Nola eurhyncha* Turner (det. IC)—Nl.4. S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, around shore of a small, freshwater lagoon (NM & G. D. Seton): Larvae (13 Oct. 66) on *Melaleuca gibbosa* Labill. and *M. oraria* J. M. Black—MYRTACEAE (dets. MK). The former appears to be the preferred foodplant in this locality. (Preserved = 1, 5-7, 9.)
 - *Nola ?lechriopa* Hamps. (det. IC)—Nl.6 & 6A. S.AUST., Mt. Lofty Range, nr. Upper Sturt (TN): Larva (24 Sept. 67) beaten from *Astrolooma conostephioides* (det. TN). Another record (the same species), beaten from the same foodplant, nr. Norton Summit (also Mt. Lofty Range), coll. by R. Briggs. (Preserved = 1, 5-7.)
 - *Nola ?parallacta* Meyr. (det. IC)—Nl.3 & 3A. S.AUST., Yorke Peninsula, \pm 2 mi. S of Kainton (NM, N. B. Tindale, & P. Aitken): Larvae (4 Nov. 65) on the pubescent undersides of lvs. of the small, open shrub, *Olearia pannosa* Hook. (det. MK). (Preserved = 1, 4-7, 9; photos = 1c.) (2) S.AUST., nr. Melrose, on Mt. Remarkable at 2400' el. (H. M. Cooper): Larvae (24 Sept. 66) on a broad-leaved form of *O. pannosa* (det. MK). (Preserved = 5.)
 - *Nola* sp. (det. NM)—Nl.7. S.AUST., Blackwood (NM): Larva (10 Sept. 67) on the semi-woody dwarf shrub, *Pultenaea largiflorens* var. *latifolia* (det. MK). Preserved = 5.)
 - *Nola* sp. (det. NM)—W.AUST., Moresby Range, Howatharra Hill Reserve, \pm 19 mi. NNE of Geraldton (NM): Larva (Nov. 1977) on dormant, immature fl. buds of *Astrolooma serratifolium* (DC.) Druce (det. WAH). Adult H. 2 Dec. 1977. (Preserved = 1, 6, 7.)
- Roeselia*—see *Uraba*.
- *Sorocostia hesycha* Meyr. (det. IC)—W.AUST., Drummond Cove sandhills (nr. beach), \pm 7 mi. N of Geraldton (NM): Larvae (May 73) on lvs. of *Olearia axillaris* (DC.) F. Muell. (det. WAH). Adult emerged 4 June 73. (Preserved = 1, 6.)
 - *Uraba lugens* (Walk.) (det. SF)—Nl.2. S.AUST., Blackwood (NM): Larvae (July-Oct. & Jan.-Feb.) locally abundant on mature lvs. of peppermint gum, *Eucalyptus odorata* (det. NM). The smaller larvae are gregarious and skeletonize the lvs. in a characteristic way. In some years these larvae are so abundant as to nearly defoliate some of the trees in this locality. (Also on many other *Eucalyptus* spp.). Adults (A+) fly Oct.-Dec. & late Feb.-April. This sp. deposits its eggs in groups of almost perfectly parallel, separated rows. See Tillyard (1926: Pl. 39) for δ adult photo; McFarland (1972b: 229) for egg photos. (Preserved = 1, 2, 4-7, 9; photos = 1, 2, 5, 7.)
 - *Unidentified large nolid* (det. NM)—Nl.5. S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, on the property of G. D. Seton, at the edge of a small freshwater lagoon (NM & M. Pate): 3 larvae (mid Oct. 66) on tough, dwarfed individuals (only!) of *Melaleuca gibbosa* Labill.—MYRTACEAE (det. MK). After return to the mainland, all 3 larvae died; thus no adults were obtained. This record is included primarily because of the very large size and unique appearance of these larvae. There are only one or two described nolids that it could be (due to the large size), and the larvae are most distinctive in morphology and coloration. It was apparently uncommon in this locality, as several hours of beating exclusively *M. gibbosa* were required to obtain 3 larvae. (Preserved = 5, 9.)
- Zia*—see *Aquita*.

NOTODONTIDAE

(see also Thaumetopoeidae)

- *Antimima corystes* Turner (det. IC)—Nd.18. W.AUST., in Kalbarri National Park, \pm 22 mi. E of Kalbarri township, nr. north side of road (NM & N. B. Tindale): Mature larvae (6 Nov. 68) on young tender tips of the low, rounded, intricate and spiny perennial, *Daviesia hakeoides* Meisn., s.l.—FABACEAE (det. A. Weston). This exact locality revisited 19 Nov. 71 (D. & NM); apparently too late, no larvae found

after 30 min of searching, but there were signs of fairly recent feeding on the newer stem tips and spine-lvs., which were already "hardening off" for the approaching hot and dry summer. Probably univoltine. (Preserved = 1, 5-7, 9; photos = 1.)

• *Antimima cryptica* Turner (det. IC, SF)—Nd.19, 19A, & 19B. (1) W.AUST., ± 60 mi. SW of Three Springs, on a hill nr. the Hill R. (NM & N. B. Tindale): Larvae (8 Nov. 68) on soft young lvs. and stem tips of the spiny, prostrate and sprawling, semi-woody shrub, *Jacksonia furcellata* (Bonpl.) DC.—FABACEAE (det. WAH). (Note: Specimens of this same plant det. as *J. spinosa* (Labill.) R. Br., by plant taxonomists at Kings Park, Perth). (Preserved = 1, 5, 6.) (2) W.AUST., Darling Range, ± 25 mi. ESE of Lancelin, nr. the Moore R. (NM & N. B. Tindale): Larva (9 Nov. 68) on the small, spiny, upright dwarf shrub, *Jacksonia psericea* Benth. (det. WAH). (3) W.AUST., Mt. Barren Range, ± 6 mi. W of Hopetoun, on top of a rocky ridge (NM & N. B. Tindale): Larvae (26 Nov. 68) of all sizes (mostly penult. & last instars) abundant on the upright and leafy shrub, *Jacksonia compressa* Turcz. (det. WAH). Probably univoltine. (Preserved = 1, 2, 5, 6, 9; photos = 1, 5.) (4) W.AUST., 2 mi. S of Kalbarri, nr. Red Bluff Caravan Park (D. & NM): Larva (25 Nov. 71) on the rounded, upright, soft and broom-like, greyish-green shrub, *Jacksonia lehmannii* Meisn. (det. NM).

• *Commonia* sp. nov. (det. IC)—Nd.21. S.AUST., ± 1.5 mi. E of Nundroo (B. & M. S. Moulds): A single penultimate instar larva (29 Sept. 78) found on *Melaleuca poraria* J. M. Black (det. NM). Mr. Moulds kindly gave me this colorful small larva during a visit to Drummond Cove, W. Aust.; after its final moult it readily switched to an offered substitute foodplant, *M. uncinata* (mature lvs.), upon which it completed growth without difficulty; fullgrown by 13 Oct. 78 (length 25 mm.); pupated Oct. 17th; adult emerged 2 Nov. 78, at ± 2315 hrs; deposited in A.N.I.C. (Preserved = ♂ 1, 6, 9.)

• *Danima banksiae* (Lew.) (det. NM)—Nd.15, 15A, 15B, 15C, 15D, & 15E. (1) S. AUST., Mt. Lofty Range, in Belair Nat. Park, 1 mi. E of Belair railway station (NM): Larvae (24 March 67) on tough mature (sclerophyll) lvs. of the dense woody shrubs, *Hakea rostrata* and *H. rugosa* R. Br. (det. MK). The former is the primary foodplant in this locality. Adults (B-) fly July-April ± (?) (peak Aug.-Sept.). See Common (1966b: 103) or Tillyard (1926: Pl. 39) for ♂ adult photo; Common (1970: 858) for line drawing of penultimate instar larva; McFarland (1970: 349 & 1972b: 225) for egg photos. (Photos = 5c.) (2) S.AUST., Eyre Pen., 10-15 mi. N of Minnipa (C. J. Winn): Fullgrown larva (16 Sept. 66) on mature (tough-sclerophyll) lvs. of the woody shrub, *Hakea francisciana* FvM. (det. MK). (3) S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, in dense scrub nr. a freshwater lagoon (NM & G. D. Seton): Eggs (large and pure chalk-white; very conspicuous) and larvae (mid Oct. 66) of all instars (mostly small), abundant on tough, old (sclerophyll) lvs. of *Hakea muelleriana*; also a single larva on old lvs. of the woody, sclerophyll shrub, *Banksia ornata* FvM. ex Meisn. (dets. MK). Although *Banksia* is abundant in this locality, *Hakea* is apparently (by far) the preferred foodplant here. Revisiting this same locality in early Sept. 67, with Dr. E. C. Jaeger, I found fresh adults on the wing in moderate abundance, coming to uv. light. (Preserved = 1-6, 8h ex egg, 9; photos = 2.) (4) S.AUST., Mt. Lofty Range, nr. Hahndorf (TN): 5 penult. instar larvae (6 Dec. 66) on old lvs. of the woody sclerophyll shrub (or small tree), *Banksia marginata* (det. NM). (Photos = 5.) (5) S.AUST., inland red-sandy semi-desert, 72 mi. S of Kulgera (N.T.), in a dry creek bed (NM, TN, & L. C. Masterman): 3 eggs (25 May 67) attached to the long, linear, silvery-gray-pubescent, mature lvs. of a tree (drooping growth-habit; fls. small & cream-white), probably a *Grevillea* (det. NM). See also McFarland (1973: 202). (Preserved = 1, 2, 5, 6; photos = 5.) (6) W. AUST., 11 mi. SW of Three Springs (NM & N. B. Tindale): Larva (8 Nov. 68) on tough mature lvs. of the dense and woody sclerophyll shrub, *Dryandra cirsiodides* Meisn.—PROTEACEAE (det. NM). (Preserved = 5.) (7) W.AUST., Moresby Ranges, Oakajee-Howatharra district, ± 15-20 mi. NNE of Geraldton (NM): Larvae (Aug.-

early Oct.) frequent on *Hakea trifurcata* (Sm.) R. Br.; less often on *Grevillea pinaster* Meisn. (dets. NM).

• *Gallaba stenoptera* Turner (det. IC)—"N." 98. S.AUST., SW Yorke Peninsula, ± 5 mi. SW of Carribe Homestead (NM, N. B. Tindale, & P. Aitken): The rather noctuiform green larvae (2 Nov. 65) were obtained by beating the densely-leafy, large evergreen shrub, *Leucopogon parviflorus* (Andr.) Lindl.—EPACRIDACEAE (det. MK). Probably univoltine. (Incorrect field identification of these larvae originally caused me to catalog them with the noctuids in my larval collection and notes, thus the "N." code-number; the adult determination was not obtained until 6 years later.) (Preserved = 1, 5, 6, 9; photos = 1.)

• *Hylaeora dilucida* Felder (det. IC & SF)—Nd.14. S.AUST., Blackwood-Belair district (NM): Captive larvae (June–Sept.) readily accepted mature lvs. of *Eucalyptus odorata*; undoubtedly on other *Eucalyptus* spp. as well. Adults (A) fly March–May (peak April–early May), coming to uv. light primarily after 2300 hrs; univoltine. See Common (1970: 857) for ♂ adult photo; McFarland (1970: 350 & 1972b: 225) for egg photos. (Preserved = 1–7, 9; photos = 2, 5.)

• *Neola semiaurata* Walk. (det. IC)—Nd.20. AUST. CAP. TERR., base of Black Mt., Canberra Botanic Gardens, nr. entrance to exhibit room (D. & NM with R. & S. Panter): Larvae (16 Jan. 72) defoliating the woody shrub, **Dodonaea multijuga* G. Don.—SAPINDACEAE (det. J. Wrigley). On this date we found 8 last instar larvae, of large size and in excellent condition, on one small shrub of *D. multijuga* which is native to the N.S.W. coast and mts., but not to the Canberra district. See Common (1966b: 103) for ♂ adult photo and line drawing of last instar. (Preserved = 5, 6, 9.)

Scythrophanes—see *Gallaba*.

• *Sorama bicolor* Walk. (det. SF, IC)—Nd.16. S.AUST., Blackwood (NM): Captive larvae (Jan. 67) readily accepted mature and semi-mature lvs. of *Eucalyptus odorata* (det. NM). Adults (B) fly Nov.–Feb. and May–Aug. (peaks Dec.–Jan. & July), coming to uv. light primarily after 2300 hrs; ♀ rare at light. Possible evidence of first instar larval dispersal was noted for this species. See Common (1966b: 105) for ♂ adult photo. (Preserved = 1–7, 9; photos = 1, 2, 5, 6.)

OECOPHORIDAE

• *Enteremna* sp. (det. IC)—W.AUST., ± 5 mi. N of Geraldton, along Beatie Rd. (D. & NM): Larvae (21 Oct. 73) in tough, conspicuous web-frass nests, on mature (old) lvs. of *Banksia attenuata* R. Br. and *B. menziesii* R. Br.—PROTEACEAE (dets. WAH). Adults emerged 23–31 May 74, at night. (Preserved = 1, 6.)

• *Myrascia megalocentra* Meyr. (det. IC)—Oc.45(M). (1) W.AUST., Moresby Range, Oakajee district, ± 16 mi. NNE of Geraldton (NM & R. G. Swinney): Larvae (late Aug. 72) abundant in well-formed, individual web-nests, on mature lvs. of *Melaleuca uncinata* R. Br. ex Ait.—MYRTACEAE (det. NM); in a dense, undisturbed heath association, on a rocky hillside. Adults emerged early–mid Nov. 72; deposited in A.N.I.C., Canberra. (Preserved = 1, 4–7, 8h, 9.) (2) W.AUST., Moresby Range ($\pm 600'$ – $700'$ el.), Howatharra Hill Reserve, ± 21 mi. NNE of Geraldton (NM): Larvae (Aug.–Sept.) often on new lvs. of *M. uncinata* and *M. radula* Lindl.; occasionally also on new lvs. of *M. megacephala* F. Muell and *M. scabra* R. Br. (s.l.); all of these are relatively dense woody shrubs. See Common (1977); also Common & Bellas (1977).

• *Thudaca obliquella* Walk. (det. D. J. Carter)—Oc.44(M). S.AUST., Mt. Lofty Range, Belair Nat. Park, 1 mi. E of Belair railway station (NM & D. Bakker): Larvae (22 Sept. 69) abundant on tough mature (sclerophyll) lvs. of *Leptospermum myrsinoides* (det. NM). See Tillyard (1926: Pl. 28) for adult photos. (Preserved = 1, 4–6; photos = 6.)

PTEROPHORIDAE

• *Trichoptilus* sp. (det. IC)—W.AUST., Drummond Cove sandhills nr. beach, ± 7 mi. N of Geraldton (NM): Larvae (Nov.–Dec. 74) on (only) fl. buds, fls., and

green frs. of *Boerhavia chinensis* (L.) Aschers. & Schw.—NYCTAGINACEAE (det. WAH). The pupae took only 5–6 days to hatch! Adults emerged 7–15 Dec. 74. (Preserved = 1, 6.)

PYRALIDAE

(A) SUBFAMILY EPIPASCHINAE

• *Epipaschia (Macalla) pyrastis* (Meyr.) (det. IC, D. J. Carter)—Py.31(M). S. AUST., Blackwood (NM): Larva (Feb. 67) in tubular and extended web-nest, among lvs. of a small sapling of *Eucalyptus leucoxylon* (det. NM). A series of larvae, reared by the late J. O. Wilson (from eggs of a Blackwood ♀, April 68), readily accepted mature lvs. of *E. odorata* and reached last instar in early July. Adults (B–) fly spring–autumn. See McFarland (1970: 349 & 1972b: 223) for egg photos. (Preserved = 1, 2, 5, 6, 9; photos = 1.)

(B) SUBFAMILY PYRAUSTINAE

• **Mecyna polygonalis* Hbn. (?) (det. NM)—Py.23(M)A. (1) S.AUST., Adelaide suburbs and Blackwood (NM): Larvae (Nov.) often on **Genista maderensis*; also reported (by M. Boyce), in a garden at Burnside, on young lvs. of a South Australian native sclerophyll, *Hovea longifolia* var. *lanceolata* (Sims) Benth., and on **Podalyria* sp.—all FABACEAE (dets. NM). Adults (B+) fly spring–autumn. (Preserved = 5, 6.) (2) W.AUST., ± 7 mi. N of Geraldton, at Drummond Cove (D. & NM): Larvae (Sept.–Oct.) often defoliate the coastal shrub, *Templetonia retusa* (Vent.) R. Br. ex Ait.—FABACEAE (det. NM). (3) W.AUST., Moresby Range, Howatharra Hill Reserve, ± 19 mi. N of Geraldton (D. & NM): Larvae (June–July) feeding on lvs. of the small native shrub, *Bossiaea biloba* Benth.—FABACEAE (det. NM).

SATURNIIDAE

• *Antheraea helena* (White) (det. NM)—St.21. (1) S.AUST., Blackwood (NM): Captive larvae (Nov.–Dec. 66) readily accepted young lvs. of *Eucalyptus odorata* (det. NM). Adults (B) fly late Sept.–March (peaks Oct.–Nov. & Feb.); univoltine. See Common (1970: 850) for ♂ adult photo. (Preserved = 1–7, 9; photos = 3c, 4c, 5c.) (2) S.AUST., Naracoorte, nr. Lochiel Ave. (NM & TN): A newly-moulted last instar larva (27 Dec. 68) on luxuriant semi-mature (sclerophyll) lvs. of a sapling of *Eucalyptus baxteri* (Benth.) Maiden & Blakely ex Black (det. MK). (3) S.AUST., Mt. Lofty Range, Stirling, in a nursery (NM): A full-grown and healthy last instar larva (2 Feb. 67) defoliating a small, ornamental weeping birch tree, **Betula* sp.—BETULACEAE (det. NM).

SPHINGIDAE

• *Agrius convolvuli* (L.) (det. NM)—Sp.22. S.AUST., Campbelltown (Adelaide suburb): Last instar larvae (early–mid May 66) in several gardens, on the ornamental, blue-fl., annual morning glory, **Convolvulus* sp.—CONVOLVULACEAE (det. NM). Green, brownish, and black phase larvae were present. Adults (C) fly spring–summer at Blackwood; to light especially after 2300 hrs. See Common (1966b: 99) for ♀ adult photo. (Preserved = 5, 6, 9.)

Celerio—see *Hyles*.

Herse—see *Agrius*.

• *Ilipotion celerio* (L.) (det. NM)—Sp.21. (1) S.AUST., Northfield (Adelaide suburb), at 19 Wright Ave. (D. Daulby): Larvae (28 March 66) defoliating the (African) arum "lily," **Zantedeschia aethiopica* (L.) Spreng.—ARACEAE (det. NM). These larvae were full size (last instar) and thriving on that plant. (Preserved = 1, 5, 6, 9.) (2) S.AUST., Blackwood (NM): Larvae (spring–autumn) on grape vines,

**Vitis* sp.—VITACEAE, which is the usual foodplant here. Adults (B-) fly late spring to mid May. (3) W.AUST., Moresby Range, Howatharra Hill Reserve, \pm 19 mi. NNE of Geraldton (D. & NM & E. C. Jaeger): Larvae (July-Sept.) on *Clematicissus angustissima* (F. Muell.) Planch.—VITACEAE (det. NM), a vine which spreads over the ground and shrubs. (4) W.AUST., \pm 7 mi. N of Geraldton, Drummond Cove (D. & NM): Larvae (Oct.-Nov.) on *Boerhavia chinensis* (L.) Aschers. & Schw.—NYCTAGINACEAE (det. P. Wilson), a perennial sp. growing on coastal sandhills. (5) W.AUST., 9 mi. S of Carnarvon, at roadside (D. & NM): Larvae (12 July 77) in abundance on the noxious weed, **Emex australis* Steinh.—POLYGONACEAE (det. NM); they were eating this in preference to many other weeds and native annuals growing here profusely, in response to rains about 6-7 weeks earlier.

• *Hippotion scrofa* (L.) (det. NM)—Sp.20. S.AUST., Goodwood (Adelaide suburb): Larvae (March 66) on **Fuchsia* sp.—ONAGRACEAE, and **Coprosma baueri* Endl.—RUBIACEAE (dets. MK). Adults (A) fly late Aug.-April (peaks Nov. & Feb.), coming to uv. light mostly after 2300 hrs (Blackwood, S. AUST). See Common (1970: 857) for ♀ adult photo. (Preserved = 1, 5, 6, 9; photos = 5, 5c, 6c.)

• *Hyles lineata livornicoides* (Lucas) (det. NM)—Sp.23 & 23B. (1) N.TERR., 56 mi. S of Alice Springs (NM): Larvae (5 April 66) very abundant, on luxuriant spreading "mats" of an annual *Boerhavia* sp.—NYCTAGINACEAE (det. NM); most were penult. or last instar on this date. (It was obvious that this locality probably had received heavy rains during hot weather in Jan., Feb., or early March, which would account for the luxuriance of this plant and for the presence of many large larvae in early April.) See Common (1966b: 101) for ♀ adult photo. (Preserved = 5, 9.) (2) S.AUST., Blackwood (NM): Captive larvae (March 68) at first accepted the ornamental garden annual, **Mirabilis jalapa* L.—NYCTAGINACEAE (det. MK), but did not thrive. Adults (C) fly Feb.-March (coming to uv. light mostly after 2300 hrs) and appear only sporadically in the Blackwood district; they were only seen one year (1968) out of the 5 summers (1965-1969) that I lived there, but several came to light that summer, and they were also reported from other Adelaide suburbs in early 1968. (Preserved = 1-4, 9.) (3) S.AUST., Hallett Cove (S of Adelaide), along the cliff edge to the south of the cove beach (NM): Mature larvae (late March 68) were present on scattered individuals of *Boerhavia diffusa* L. (det. NM). (There had been unusual heavy summer rains in the Adelaide vicinity during hot weather in Jan.-Feb. 68).

THAUMETOPOEIDAE

• *Cynosarga ornata* Walk. (det. IC)—Ta.13. N.QLD., Atherton Tableland, around gravel quarry nr. Tinaroo Pines Caravan Park (\pm 2500' el.) (D. & NM): Larvae (March-June) of all sizes and unhatched eggs, very conspicuous on small saplings of the tree, *Casuarina littoralis* Salisb. (synonym = *C. suberosa*) (det. BH). These larvae are highly gregarious in early instars, retaining this behavior (to a very slight degree) even into last instar. Adults (March-June) were never attracted to uv., mercury vapor, or ordinary incandescent light (including the hours from midnight to dawn) during this period, nor did we ever see them flying in the daytime. However, they were regularly emerging (in captivity) all through April-June. (Preserved = 1-7, 8h, 9.)

• *Discophlebia catocalina* Felder & Rogenhf. (det. SF, IC)—Ta.3. S.AUST., Blackwood (NM): Captive larvae (Jan.-Feb.) readily accepted mature (tough) lvs. of *Eucalyptus odorata* (det. NM); strictly nocturnal feeders when past the early instars. First instar larval dispersal is notable in this species. After dispersal, they still retain semi-gregarious tendencies when small, but later become solitary. Adults (B+) fly mid Nov.-March (peak late Dec.-early Feb.), coming to lights especially on hot nights; univoltine. See McFarland (1970: 350 & 1972b: 227) for egg photos. Preserved = 1-7, 9; photos = 1, 2.)

• *Epicoma argentata* (Walk.) (det. IC)—Ta.6. N.TERR., 27 mi. E of Timber Creek store (NM): 16 half-grown gregarious larvae (18 April 66) at rest, closely side-by-

side, all on one mature lf. (of a small sapling) of an unidentified *Eucalyptus* sp. (det. NM), which was the predominant eucalypt in that locality. These larvae were transported 2,000 mi. to the south, readily accepting mature lvs. of various eucalypts enroute; they were then reared to pupation on mature lvs. of *E. odorata* (which they readily accepted) at Blackwood. (They refused to feed unless kept warm, however, as it was early winter in the south, and they had been transported from the tropics.) (Preserved = 1, 4-7, 8h, 9; photos = 5.)

● *Epicoma melanosticta* Donovan (det. IC, SF)—Ta.5; Ta.11. (1) S.AUST., Blackwood (NM): Captive larvae (April-July 66) readily accepted old (mature) sclerophyll lvs. of *Eucalyptus odorata* (det. NM) in captivity, feeding only or mostly at night when older; highly gregarious in early instars, but gradually becoming essentially solitary by last instar. I have 3 separate records of field-collected larvae of this sp. feeding on *E. odorata*, on 22 Jan. 67, 5 Feb. 67, and 27 Sept. 68; in two of the cases the larvae were small, resting or feeding in intimate aggregations of between 20 and 30 individuals; they were on very small saplings of the foodplant, not far above the ground. Adults (B) fly Nov.-mid June (peaks Dec. & late March-early May); flight nocturnal (occasionally crepuscular), both sexes coming readily to uv. light. See Common (1970: 857) for ♂ adult photo; McFarland (1970: 350 & 1972b: 225) for egg photos. (Preserved = 1-7, 9; photos = 1, 1c, 2, 5.) (2) W.AUST., Mt. Barren Range, ± 6 mi. W of Hopetoun, on top of a rocky ridge (NM & N. B. Tindale): Two last instar larvae (26 Nov. 68) feeding (0600-0700 hrs), close to the ground, on old lvs. of the shrub, *Calothamnus validus* S. Moore—MYRTACEAE (det. WAH). Although I recorded these larvae under a separate code-number (Ta.11), a ♀ adult (H. 11 Jan. 69) later proved to be *Epicoma melanosticta*. (Preserved = 1, 5, 6, 9; photos = 1, 5, 6.) (3) W.AUST., Moresby Range, Howatharra Hill Reserve, ± 19 mi. NNE of Geraldton (NM & Lisa Green): 3 aggregations of half-grown larvae (12 Aug. 78) on old lvs. of *Calothamnus homalophyllus* F. Muell.—MYRTACEAE (det. NM); in Zone 4(C) & (WC) of the reserve. (This is probably also "Ta.11.")

● *Epicoma* (sp. nov.?), nr. *tristis* Lewin (det. NM) or nr. *melanospila* (Wallengren) (det. IC)—Ta.4. S.AUST., south coast of Kangaroo Is., 10 mi. W of Vivonne Bay, on land owned by G. D. Seton, around the edges of a small freshwater lagoon (NM & M. Pate): Larvae (31 Dec. 65 and 30 Jan. 66) uncommon and scattered, on various sclerophyll dwarf shrubs of the habitat (a rather dense and richly-varied heath association), but not on eucalypts. Specifically seen feeding on *Darwinia micropetala* (FvM.) Benth.—MYRTACEAE (det. MK). Larval feeding and activity was diurnal. Adults probably fly April-May; a single most distinctive ♂ adult emerged (in a heated room indoors) on 7 May 66. I have not seen the ♀. The adults of this sp. may be both diurnal and nocturnal in activity; although I suspect the former, available evidence points in both directions! In my opinion this sp. shows a closer kinship with *Epicoma tristis* (both in the larval stage & adult) than with *E. melanospila*, although it is easily separated from either of these. See Common (1966b: 105) for ♂ & ♀ adult photos of *E. melanospila*. (Preserved = ♂ 1, 5, 6; photos = ♂ 1.)

● *Epicoma tristis* Lewin (det. IC, SF)—Ta.8 & 8A. (1) S.AUST., Belair Nat. Park, 1 mi. E of Belair railway station, just S of Sheoak Rd. (NM): Larvae (Oct.-Feb.) regularly on two completely unrelated shrubs, *Casuarina muelleriana* and *Leptospermum myrsinoides* (dets. NM). The former appears to be the "preferred" foodplant in this locality, although both are readily eaten in captivity. The larvae are gregarious when small, but become solitary and widely-scattered in later instars. They feed diurnally; sunlight and/or warmth are needed to stimulate optimum feeding activity. Adults (A), of very patchy and localized distribution, fly March-April (peak short; usually late March-early April only); strictly diurnal in activity, with ♂ flight entirely on mornings of warm days, between ± 0800-1130 hrs (peak 0815-1000 hrs) when they seek the slightly smaller ♀♀ resting in low bushes of the "colony" or population-center; univoltine. (Preserved = 1-7, 9-extensive; photos = 1, 2, 5, 6.) (2) S. AUST., 3.3 mi. SE of Blackwood Post Office (NM): Larvae (spring-summer) were

entirely on the abundant *Leptospermum myrsinoides* (det. NM) in this population. (For remarks on diapause in the egg stage of this sp., see McFarland, 1973: 199.)

Ochrogaster—see *Teara*.

• *Oenosandra boisduvallii* Newman (det. SF, IC)—Ta.1. (The “r” belongs in the generic name: letter from SF, 25 Aug. 1971.) S. AUST., Blackwood (NM): Captive larvae (June–Sept.) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM); strictly nocturnal feeders, hiding by day under loose bark on the eucalypt trunks and branches. First instar larval dispersal is notable in this sp., but after dispersal they still show semi-gregarious behavior (resting closely side-by-side under the bark). Capable of rapid locomotion to and from feeding and resting sites, which are often far apart. Their behavior, in this respect, is much like that of the North American arctiid, *Hemihyalea edwardsi* Pack. Adults (A) fly mid March–mid May, with ♂♂ coming to uv. light mostly after 2300 hrs; univoltine. Sexual dimorphism in this sp. (both color & maculation) is very striking; the sexes are often widely separated in collections! See McFarland (1970: 350 & 1972b: 227) for egg photos. (Preserved = 1–6, 9; photos = 1, 1c, 2.)

• *Teara ?contraria* (Walk.) (det. NM)—Ta.7 & 7A–7D. (1) S.AUST., along road to Woomera, NW of Port Augusta (NM): Larval nest-bags (3 April 66) present in countless numbers on mulga trees, *Acacia aneura* FvM. ex Benth. (det. NM); some single trees contained several dozen large (last instar) larval nests. Many of these nests were occupied by nearly fullgrown larvae (Ta.7). For numerous details on the early stages of this species and the following (Ta.9), which may be a separate species, see the interesting W.Aust. observations by Mills (1951–52). (2) S.AUST., inland desert, 64 mi. S of Coober Pedy (NM): Larvae (4 April 66) abundant, inside their large and conspicuous, ± spherical or elliptical whitish silken bag-nests, on *Cassia nemophila* var. *platypoda* R. Br. (Benth.)—CAESALPINIACEAE (det. MK). The larvae are primarily nocturnal feeders, and highly gregarious at all times for the entire duration of the larval stage. They rest by day inside the nest-bags, which are rather fully packed with dried larval frass; the frass no doubt plays an important part in temperature-regulation within the nest. Just prior to pupation (autumn to early winter) they leave the nests and wander long distances over the ground, in characteristic single-file processions, searching for pupation-sites; these “larval ropes” are often seen crossing roads in the autumn (April ±). Adults fly spring–early summer; crepuscular and nocturnal, both sexes (but mostly ♂♂) coming abundantly to uv. light; the ♀♀ sometimes fly in late afternoon, but not in great numbers; univoltine. (Preserved = 1, 2, 5, 6, 8d, 9; photos = 5c, 7c-nests.) (3) S.AUST., 44 mi. S of Coober Pedy, in a dry creek bed (NM): Larvae (4 April 66), of what I suspect are probably this same species, in silk nests on the branches, and in trunk crotches of an unidentified *Eucalyptus* sp. (det. NM). Some of the trees in this locality were nearly defoliated at the time (Ta.7B).

• *Teara* sp. (det. NM)—Ta.9. (1) S.AUST., Eyre Peninsula, ± 5 mi. N of Streaky Bay (R. Edwards): Half-grown larvae (mid Feb. 67) on the coastal *Acacia anceps* DC. (det. MK); upon capture they were crawling down the trunk in a single-file procession (sunny morning at 0730 hrs). These larvae were reared to full size (late April) at Blackwood, S. Aust. on a readily-accepted substitute, *Acacia pycnantha*. They did not make any nest-bags, but rested in a heap, all piled up together, on or in loose litter at or near the base of the foodplant, usually among their cast larval skins, on somewhat of a slight silken mat covering the litter. They were sporadic nocturnal feeders, on some nights not feeding at all. It would be interesting to know exactly what factors determine the nights of feeding. (Preserved = 1, 4–6, 9.) (2) S.AUST., at base of Black Hill, Athelstone, E of Adelaide (TN): About 30 small larvae, of ± 20–25 mm length (15 Jan. 67), sitting heaped together in a “clump,” covering part of a lf. and stem, up on a branch of *Acacia pycnantha* Benth.—MIMOSACEAE (det. TN). There was no sign of a bag (or any other silken nest-like structure) anywhere on this plant or nearby. I have not seen this particular series of larvae, but suspect they are identical to my Ta.9, based on the information provided by Mr. Newbery.

Regarding the early stages of what is probably Ta.9 in Western Australia, see Mills (1950-52). There exists some question as to whether or not this sp. (Ta.9) and the foregoing (Ta.7) are, in fact, two distinct spp.; I am inclined to agree with Mills (1951: 61, 66-67 and 1952: 87-92) that they are, but this opinion is based only upon observations of the larval stages. Aside from striking behavioral differences, the longest, silk-soft, pale gray hairs on my Ta.9 larvae were notably longer than were the longest hairs of the bag-forming Ta.7 larvae. (If both Ta.7 & Ta.9 are in fact one and the same species, as stated by some authorities, then it is an incredibly plastic species, having not only two morphologically distinct larval forms, but also two differing patterns of behavior and habits.)

Trichetra—see *Trichiocercus*.

• *Trichiocercus sparshalli* (Curtis) (det. IC, SF)—Ta.2. S.AUST., Blackwood (NM): Captive larvae (Jan.-Feb.) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM). These larvae are highly gregarious when small. This behavior gradually weakens as they grow larger, but is still retained (to some degree) into last instar. The morphology of certain structures associated with the larval mouth parts is quite peculiar and warrants close investigation. Adults (A) fly late Oct.-mid May (peaks Nov.-Jan. & March), coming to uv. light especially after 2300 hrs. Both sexes are strictly nocturnal, but the ♀ is rarely seen at lights here. The ♂ is entirely pure chalk-white, including all parts of the abdomen; in the ♀, the dense, terminal, abdominal tuft of deciduous scales is light golden-tan or golden-brown. (Preserved = 1-7, 9; photos = 1, 2, 5, 5c.)

• *Trichiocercus* sp. nov. (det. IC, SF)—Ta.10. S.AUST., Blackwood (NM): Captive larvae (July-Sept. 68) readily accepted mature lvs. of *Eucalyptus odorata* (det. NM). Larval and adult behavior is much as described for *Trichiocercus sparshalli*, but larval appearance and hair coloration in these two spp. is very strikingly different. Adults (B-) fly only from late April-early June, coming to uv. light mostly after 2300 hrs; univoltine. They are, on the average, somewhat larger than *T. sparshalli* adults, and both sexes are marked by a variable zone (not sharply defined) of sooty-blackish coloration on the abdominal dorsum. In the ♀, the dense terminal tuft is primarily black with an overlay of longer, hair-like, grayish-brown scales. (Preserved = 1-7, 9; photos = 1, 2, 4, 4c, 5, 6.)

XYLORYCTIDAE

• *Cryptophasa melanostigma* (Wallengren) (det. IC)—N.QLD., Atherton Tableland, around gravel quarry nr. Tinaroo Pines Caravan Park ($\pm 2500'$ el.) (N. B. Tindale, collector): Larvae (May-June 72) in short tunnels inside stems of *Casuarina littoralis* Salisb. (synonym = *C. suberosa*) (det. BH). Adults emerged about Sept.-Oct. (Preserved = 1, 6.)

• *Cryptophasa* sp. (det. NM)—W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Larva (Aug.-Sept. 76) in short tunnel inside a lower branch-stem of a young (2-year-old) *Acacia ligulata* A. Cunn. ex Benth. (det. NM). An adult (with cream-tan forewings) emerged in Oct. 76.

• *Lichenaula* sp. (det. IC)—Xy.41(M). W.AUST., ± 4 mi. N of Kununoppin, on top of a huge granite dome, Waddouring Hill (NM & N. B. Tindale): Larvae (1 Nov. 68) inside frass-covered silken tubes among lichens, on the granite surface, and feeding (at night and perhaps on cloudy days) on the (unidentified) LICHENS surrounding them. Several adults emerged, from the field-collected larvae, in March-April 69. (Preserved = 1, 5, 6.)

• *Genus?* sp.? (det. IC)—47(M). W.AUST., Drummond Cove, ± 7 mi. N of Geraldton (D. & NM): Larvae (March 74) in web-tunnels beneath the prickly dwarf shrub, *Acanthocarpus preissii* Lehm.—XANTHORRHOACEAE (det. WAH); on the sandhills immediately behind the beach. This record is included primarily for the unusual foodplant involved. The larval nests are conspicuous tangled webs inside the lower

parts of the plant, with a tough silken tube extending several inches down into the fine sand beneath the plant. The larvae remain in the tube (below ground) by day, coming out to feed on the tough lvs. after dark. Adults emerged June–July 74. The ♀ has oddly-narrowed, reduced wings, looking deformed. (Preserved = 1, 5, 6.)

ZYGAENIDAE

• *Hestiochora rufiventris* (Walk.) (det. SF, IC)—Zy.8 & 8A. (1) S.AUST., ± 5 mi. S of Monarto South, at Chauncey's Line (M. Fagg): Larvae (2 Oct. 66) abundant on tough mature lvs. of a single bush of *Melaleuca* sp.—MYRTACEAE (det. M. Fagg). This is presumed to be *M. lanceolata* Otto, which grew in that locality (det. NM). (Preserved = 1, 4, 5, 6, 9; photos = 1.) (2) W.AUST., south coast, on rim of escarpment ± 43 mi. W of Eucla (NM & N. B. Tindale): Adults and fresh eggs (2 Dec. 68) extremely abundant on large shrubs of *Melaleuca lanceolata* Otto (det. WAH). The adults are weak fliers and diurnal; probably univoltine. See McFarland (1970: 349 & 1972b: 219) for egg photos. (Preserved = 1, 2, 3, 9; photos = 2.)

• *Hestiochora tricolor* (Walk.) (det. SF, IC)—Zy.9. (1) S.AUST., ± 3 mi. S of Port Willunga, at the north edge of the "Aldinga Scrub," just S of Fraser St. at Bristol St. (D. & NM with the late Mr. & Mrs. J. O. Wilson): Nearly fullgrown but dormant larvae (28 July 70) resting on mature lvs. of a mallee eucalypt, *Eucalyptus fasciculosa* (det. MK), and on one other unidentified *Eucalyptus* sp. The characteristic larval "feeding-grooves," on the mature leaf surfaces, are easily recognized. (However, see also the limacodid, *Doratifera*.) Earlier in the year (14 March 70; D. & NM), freshly-emerged diurnal adults were on the wing in this same locality. Indications are that populations of this moth (a weak flier) tend to be restricted to very localized "colonies"; this remark may also apply to *H. rufiventris*. See Common (1966b: 65) or Tillyard (1926: Pl. 28) for adult photos. (Preserved = 1–7, 9; photos = 1–3.) (2) W.AUST., Kalbarri Nat. Park, ± 23 mi. E of Kalbarri township, nr. picnic area at Hawks Head Lookout, overlooking south side of Murchison River (D. & NM with K. & L. Haines): Adult ♀ sighted (mid-day, 23 Sept. 74), but I was not able to capture it. Inspection of the leathery, mature lvs. on the small mallee eucalypts here revealed old, dry scars caused by groove-like "feeding-tracks," probably made earlier in the year by larvae of this species. (This may be a W. Aust. ssp. of *H. tricolor*.)

• *Pollanisia apicalis* Walk. (det. SF, IC)—Zy.6. S.AUST., ± 8 mi. NE of Two Wells, on white sandhills (NM, TN, & M. Pate): Larvae (20, 27 Aug. 66) locally abundant on buds, fls., & young lvs. of scattered individuals of the dwarf shrub, *Hibbertia virgata* R. Br. ex DC. (det. MK). Adults (Oct.) diurnal, weak fliers; probably univoltine. (Preserved = 1, 4–6; photos = 1, 5c.)

• *Pollanisia dolens* Walk. (det. SF)—Zy.7. S.AUST., Mt. Lofty Range, nr. Longwood, at Aldgate (Heather Rd.), and in Belair Nat. Park, 1 mi. E of Belair Railway Station (NM & TN): Larvae (Aug.–Sept.) common on tough, mature lvs. of *Leptospermum myrsinoides* (det. NM). Adults (Oct.) diurnal; weak fliers; probably univoltine. (Preserved = 1, 4–7, 8d, 9; photos = 1, 5.)

• *Pollanisia viridipulverulentus* Guérin (det. NM, SF)—Zy.5. S.AUST., Blackwood-Belair district (NM): Larvae (July–Aug.) on buds, fls., and young lvs. of *Hibbertia stricta* and *H. sericea* (dets. MK); the former appears to be preferred around Blackwood. Adults (B+) fly late Sept.–Oct., occurring in localized colonies; weak fliers and diurnal; probably univoltine. See Common (1966b: 65) for ♂ & ♀ adult photos. (Preserved = 1, 5–7, 8d, 9; photos = 1.)

SUPPLEMENT: FIJI ISLANDS

AGARISTIDAE

• (?) *Sarbanissa (Seudyra) bostrychonota* Tams (det. H. S. Robinson)—As.10. VITI LEVU, nr. Nadarivatu, along trail about halfway up to the lookout on Lomalagi Peak

(NM & G. F. Gross): Two larvae (15 Feb. 68) feeding on the non-urticating lvs. of *Leucosyke corymbulosa* (Wedd.) Wedd.—URTICACEAE (det. J. W. Parham). Adults are tentatively det. as above, even though none were reared out, because Robinson (letter of 23 July 68) stated that “. . . this is the *only* agaristid recorded as occurring here . . .” See Robinson (1975: 111 & Pl. Figs. 10–11) for ♂ and ♀ adult photos. (Preserved = 5, 9.)

ARCTIIDAE

SUBFAMILY NYCTEMERINAE

• *Nyctemera baulus* (Bdv.) (det. NM)—Ar.40. VITI LEVU, Navai-Nadarivatu district, in weedy cornfields (NM): Adults, fresh eggs, and larvae of all sizes abundant (10 Feb. 68), on the rank and weedy annual, **Crassocephalum crepidioides* (Benth.) J. Moore—ASTERACEAE (det. J. W. Parham); I also saw 2 larvae, on this same foodplant in a private garden in Suva (late Feb. 68). See Robinson (1975: 107 & Pl. Fig. 9) for ♂ adult photo. For egg photos of a close relative, *N. amica* (White), see McFarland (1970: 350 & 1972b: 229).

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COMMON NAMES OF FOODPLANTS IN THE INDEX THAT FOLLOWS:

- Arum Lily—see *Zantedeschia*.
 Ash—see *Fraxinus*.
 Aster Family—see Composites.
- Bacon and Eggs—see *Pultenaea*.
 Beach Grass—see *Spinifex*.
 Bindweed—see *Convolvulus*.
 Birch—see *Betula*.
 Blackboy—see *Xanthorrhoea*.
 Boneseed—see *Chrysanthemoides*.
 Bracken—see *Pteridium* spp.
 Bull Oak—see *Casuarina*.
 Bur Medic or Bur Clover—see *Medicago*.
- Cape Dandelion—see *Arctotheca*.
 Cape "Ivy"—see *Senecio mikanioides*.
 Capeweed—see *Arctotheca*.
 Carrot, Native—see *Daucus*.
 Champion Bay Poison Bush—see *Gastrolobium*.
 "Cherry", Native—see *Exocarpos cupressiformis*.
 Chickweed—see *Stellaria*.
 Christmas Bush—see *Bursaria*.
 "Cranberry", Native—see *Astroloma humifusum*.
 Composites—see *Arctotheca*, *Artemisia*, *Chrysanthemoides*, *Crassocephalum*, *Olearia*,
Pterocaulon, *Senecio*, *Solidago*.
 Cooktown Ironwood—see *Erythrophleum*.
- Daisy Family—see Composites.
 Devil's Twine—see *Cassytha* spp.
 Dock—see *Rumex*.
 Dodder-Laurel—see *Cassytha* spp.
 Double-gee—see *Emex*.
- Evening Primrose—see *Oenothera*.
- Fat Hen—see *Chenopodium*.
 Ferns—see *Nephrolepis*; *Pteridium* spp.
 Five-corner—see *Averrhoa*.
 Fungus—see "fungus (unidentified)"; *Psaliota*.
- Goldenrod—see *Solidago*.
 Grape Family—see *Cayratia*, *Cissus*, *Clematicissus*, *Vitis*.
 Grape, Native—see *Clematicissus*.
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- Heath Family (Epacrids)—see *Astroloma*, *Leucopogon*.
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- Ironwood—see *Erythrophleum*.
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- Legumes—see Pea Family.
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- Lignum—see *Muehlenbeckia*.
 “Lilac”, Native—see *Hardenbergia*.
 Loquat—see *Eriobotrya*.
 Mallees—see *Eucalyptus diversifolia*, etc.
 Mallows—see *Alyogyne*, *Hibiscus*, *Lagunaria*, *Malva*.
 Mint—see *Mentha*.
 Mistletoes—see *Amyema* spp.
 Morning Glory—see *Convolvulus*.
 Moss—see *Pottia*.
 Mushroom—see *Psaliota*.
 Needlebushes—see *Hakea* spp.
 Old Man’s Beard—see *Clematis*.
 Oldman Saltbush—see *Rhagodia*.
 Paperbark—see *Melaleuca lanceolata*.
 Paterson’s Curse—see *Echium*.
 Pea (edible)—see *Pisum*.
 Pea Family—see *Acacia*, *Bossiaea*, *Brachychiton*, *Brachysema*, *Cassia*, *Daviesia*,
Dillwynia, *Crotalaria*, *Erythrophleum*, *Gastrolobium*, *Genista*, *Hardenbergia*, *Hovea*,
Jacksonia, *Lotus*, *Medicago*, *Pisum*, *Platylobium*, *Podalyria*, *Pultenaea*, *Templetonia*.
 Peppermint Box—see *Eucalyptus odorata*.
 Pepper Tree—see *Schinus*.
 Pigweed—see *Chenopodium*.
 Pimpernel—see *Anagallis*.
 “Pine”, Native—see *Callitris* (Cupressaceae).
 Plum—see *Prunus*.
 Potato Weed—see *Heliotropium*.
 Primrose, Evening—see *Oenothera*.
 Rattlepod—see *Crotalaria*.
 Rhubarb, wild—see *Rumex*.
 Ribwort—see *Plantago*.
 Sagebrush—see *Artemisia*.
 Saltbush, Oldman—see *Rhagodia*.
 Salvation Jane—see *Echium*.
 Sedges—see *Gahnia*; “sedges (unidentified)”.
 Sheoak—see *Casuarina* spp.
 Silky Oak—see *Grevillea robusta*.
 Smokebush—see *Conospermum*.
 Star-fruit—see *Averrhoa*.
 Stringybark—see *Eucalyptus obliqua*.
 Tea Tree—see *Leptospermum* spp.
 Thichead—see *Crassocephalum*.
 Three-cornered Jack—see *Emex*.
 Tobacco, Tree—see *Nicotiana*.
 Wattles—see *Acacia* spp.
 Wireweed—see *Cassytha*; *Polygonum*.
 Yakka—see *Xanthorrhoea*.

INDEX TO SCIENTIFIC NAMES OF FOODPLANTS¹:

- ACACIA (sp. unidentified)—36, 41, 48.
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aneura—60.
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 **baileyana*—33, 41.
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 ?*saligna* (W)—49.
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- ACANTHOCARPUS *preissii* (W)—61.
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- AMYEMA *melaleucacae*—14.
miquelii—14, 47.
- *ANAGALLIS *arvensis*—42.
 *ARCTOTHECA *calendula*—13, 17, 27.
 *ARTEMISIA *californica* (W)—28.
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- *AVERRHOA *carambola* (Q)—39.
- BAECKEA *behrii* (V)—21, 23, 26, 29, 43, 45.
 BANKSIA *attenuata* (W)—56.
caleyi (W)—19.
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sphaerocarpa, s.l. (W)—16, 19, 44.
 BERTYA *mitchellii*—28, 34, 41.
 *BETULA (sp. unidentified)—50, 57.

¹NOTE: In this foodplant index all species listed are South Australian except where other states are indicated by abbreviations (in parentheses after plant names) as follows: (NS) = New South Wales; (NT) = Northern Territory; (Q) = northeastern Queensland; (V) = Victoria; (W) = Western Australia. An asterisk (*) before the name designates a naturalized or introduced plant not native to the locality named in the preceding list.

See pp. 9–11 for a general discussion of many of the S. Aust. plants listed here, plus some other introduced spp. not in this index. Only plants associated with larval feeding records are indexed here.

- BEYERIA (sp. unidentified)—21.
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- BRACHYSEMA *aphyllum* (W)—49.
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- CALLITRIS *columellaris* ssp. *intratropica* (Q)—52.
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- *CAMELLIA (sp. unidentified)—24.
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- CHAMAESYCE *australis* ssp. *glaucescens*—51.
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- CHENOPODIACEAE (unidentified)—52.
- *CHENOPODIUM (sp. unidentified)—42.
- CHORETRUM *glomeratum*—50.
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- *CHRYSANTHEMOIDES *monilifera*—17, 21, 22, 26.
- CISSUS *opaca* (Q)—13.
- *CITRUS (sp. unidentified, probably lemon)—28.
- CLEMATICISSUS *angustissima* (W)—58.
- CLEMATIS *microphylla*—41.
- CONOSPERMUM *stoechadis* (W)—44, 45.
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- *CRASSOCEPHALUM *crepidioides* (Q; Fiji)—19, 63.
- CRASSULA (sp. unidentified)—50.
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DAUCUS glochidiatus—16, 50.
DAVIESIA brevifolia—16, 32.
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 **EMEX australis* (W)—58.
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 **ERIOBOTRYA* (sp. unidentified)—24.
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EUCALYPTUS (sp. unidentified) (W, in part)—56, 59, 60, 62.
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 **ficifolia*—21, 31.
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 **FUCHSIA* (sp. unidentified)—58.
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 **GENISTA maderensis*—17, 26, 57.
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 **GREVILLEA* (sp. unidentified)—45, 55.
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- **robusta*—45.
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- HALGANIA *cyanea*—51.
- HALORAGIS *heterophylla*—41.
- HARDENBERGIA *violacea*—28, 50.
- *HEDERA (sp. unidentified)—28.
- *HELIOTROPIUM *europaeum*—18.
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- HOVEA *longifolia*—57.
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- ISOPOGON *ceratophyllus*—44.
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- furcellata* (W)—55.
- ? *lehmannii* (W)—55.
- ? *sericea* (W)—55.
- spinosa* (W)—55.
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- LEPTOSPERMUM (sp. unidentified)—26, 43.
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- *MALUS (sp. unidentified)—17.
- *MALVA (sp. unidentified)—13, 42.
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- MELALEUCA *gibbosa*—35, 43, 46, 53, 54.
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- halmaturorum*—33.
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- megacephala* (W)—53, 56.

- oraria*—33, 35, 43, 46, 54, 55.
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MUEHLENBECKIA gunnii—28.
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MYOPORUM viscosum—50.
 **MYOSOTIS*—(sp. unidentified)—18.
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 **NICOTIANA glauca* (W)—53.
 **OENOTHERA hookeri*—14.
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 **PINUS* (sp. unidentified)—17.
 **PISUM* (garden pea)—22.
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 **POA bulbosa*—16.
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 **PRUNUS* (sp. unidentified)—24.
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PTEROCAULON glandulosum (Q)—52.
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 **SCHINUS molle*—28.
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 **mikanioides*—19.
 **SOLIDAGO* (sp. unidentified)—41, 42.
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 **STELLARIA* (sp. unidentified)—42.
TEMPLETONIA retusa (W)—57.
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 **ZALUZIANSKYA divaricata* (W)—27.
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