

Black Mountain Symposium Background Paper No. 10

Invertebrate animals of Black Mountain, Canberra, in the Australian Capital Territory

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Abstract. Black Mountain, in the centre of Canberra, the Australian capital, rises about 300 metres above the surrounding plain now given over to the city. A 450-hectare nature reserve protects high quality native vegetation covering most of the mountain. This paper discusses some aspects of its invertebrate animal fauna, with emphasis on the insects. A checklist of approximately 2150 species in selected groups of insects, arachnids, millipedes and velvet worms recorded from Black Mountain is provided, together with a table enumerating the group totals of species, and rough estimates of the actual size of the fauna, were it to be fully known. The task of studying the fauna has been facilitated by the continuing presence of research staff of the Australian National Insect Collection at the CSIRO, close to the eastern boundary of the reserve. Nevertheless, further work is required to obtain a full picture of the mountain's invertebrate fauna, of which the arthropods are estimated to total over 5000 species.

1. Introduction

The broad, forested bulk of Black Mountain rises to 812 metres, dominating central Canberra on the surrounding plain at about 500 metres. It is one of a number of peaks of similar height rising within and around the city, most of them reserved for nature conservation and public recreation as components of Canberra Nature Park. Black Mountain Nature Reserve comprises about 450 hectares of native vegetation in predominantly good condition. The upper slopes carry a low open forest dominated by four species of *Eucalyptus* above a diverse ground layer of sparse shrubs and tussock grasses. The foot slopes of the mountain grade into a more open grassy woodland, with different eucalypt species dominant. Aspect has a significant influence on the flora: the steep southern slope is largely shaded in winter and protected from strong radiation in summer. The vegetation of the area is described in more detail by Doherty (2018) and the plants by Purdie (2018a).

With the possible exception of butterflies and dragonflies, the invertebrates lack charisma with the general public, and their bewildering diversity can make their study seem impenetrable. Their small size, often secluded habits and, in many cases, brief diurnal and annual periods of activity do not facilitate their study in the field. Even once samples are obtained, the general poor state of taxonomic knowledge of the fauna and the lack of specialist workers can further discourage study.

Nevertheless, Black Mountain's invertebrates have been relatively well surveyed, due mainly to 90 years of sampling by entomologists based at CSIRO's Australian National Insect Collection (ANIC) on the mountain's lower eastern slopes (see also Purdie 2018b). Although >5000 insect species have been reported to occur there (e.g. Heritage Week Committee 1993) this paper is the first known attempt to collate a list of invertebrates recorded from Black Mountain since collecting began. Invertebrate collections, principally the ANIC, hold considerable material yet to be fully identified, and the estimate reported above may turn out to be conservative.

2. Methods

Records of species observed or collected within the study area were obtained from the following sources:

- direct perusal of specimens held by the ANIC;
- Biolink, the ANIC in-house specimen database;
- Canberra Nature Map, a citizen science website (<https://canberra.naturemapr.org>);

- Atlas of Living Australia (ALA; <https://www.ala.org.au>) database search, April 2018, for insect species recorded within a 1 km radius of the summit of Black Mountain;
- Australian Faunal Directory (<https://biodiversity.org.au/afd/home>) database search, March 2017, for species with ‘Black Mountain’ as a type locality;
- the taxonomic and ecological literature; and
- input from colleagues with specialist knowledge of taxonomic groups.

This paper draws from a larger project documenting the insect diversity of the Australian Capital Territory (ACT). The ANIC preserves a large amount of material collected from Black Mountain and other places in the ACT, but very little of it is databased. Consequently, the chief method being used to compile lists of insects is simply to visually scan the locality labels on specimens held in the collection and record the ACT presence of taxa against a national list. Unsorted or unidentified material of ACT provenance is sorted and identified where possible. The ACT project is incomplete and ongoing: Diptera (flies), Lepidoptera (butterflies and moths) and about half of the Coleoptera (beetles) have been examined, with Hemiptera (bugs), Hymenoptera (ants, bees and wasps) and the smaller orders remaining. The bulk of the Lepidoptera species listed in this paper is the result of a re-examination of ANIC holdings using the draft ACT list.

The literature search was neither systematic nor comprehensive; a serious search of the taxonomic literature in particular would be sure to add a considerable number of records.

Many specimens sighted in the ANIC give only ‘Black Mountain’ as the place they were collected. In the absence of more precise data, it is not possible to know whether these specimens were collected inside or outside the boundary of Black Mountain Nature Reserve. For the sake of completeness, and because the distances involved are small, such species are included in the lists. However, species recorded only from the Australian National Botanic Gardens are excluded from the lists due to the possibility of their being imported with plant material from outside the study area.

3. Results and discussion

A list of species of the selected groups is presented in Appendix 1 (insects: class Insecta of phylum Arthropoda) and Appendix 2 (other invertebrates, covering spiders (order Araneae), scorpions (order Scorpiones), flat-backed millipedes (order Polydesmida), and velvet worms (phylum Onychophora)). Table 1 provides group totals, showing the arthropod fauna of Black Mountain documented here comprises approximately 2150 species, although the accompanying estimate of the true total is more than twice that magnitude.

Table 1. Invertebrate group totals recorded nationally and on Black Mountain, and estimated to occur on Black Mountain

Group	Common name	Number of species		
		Australia ¹	Black Mountain	
			Recorded ²	Estimated ³
ONYCHOPHOR				
A	velvet worms	73	1	1
ARACHNIDA				
	arachnids			
Acari	mites, ticks	3666	0	400
Araneae	spiders	3806	42	400
Opiliones	harvest spiders	237	0	10
Pseudoscorpiones	false scorpions	193	0	10
Scorpiones	scorpions	47	3	3
CHILOPODA				
	centipedes	133	0	10

Group	Common name	Number of species		
		Australia ¹	Black Mountain	
			Recorded ²	Estimated ³
DIPLOPODA	millipedes	541	2	20
COLLEMBOLA	springtails	374	0	25
ENTOGNATHA				
Diplura	diplurans	28	0	2
Protura	proturans	32	0	2
INSECTA	insects			
Archaeognatha	bristletails	10	1	1
Blattodea	cockroaches, termites	851	15	20
Coleoptera	beetles	24629	682	1500
Dermaptera	earwigs	90	0	6
Diptera	flies	8733	143	400
Embioptera	webspinners	26	1	2
Ephemeroptera	mayflies	119	0	1
Hemiptera	bugs, leafhoppers, scale insects	6163	80	300
Hymenoptera	sawflies, wasps, ants, bees	11984	214	1000
Lepidoptera	moths, butterflies	10854	810	1000
Mantodea	mantids	117	1	3
Mecoptera	scorpionflies, hangingflies	33	2	5
Megaloptera	alderflies, dobsonflies	26	1	1
Neuroptera	lacewings	569	5	25
Odonata	dragonflies, damselflies	326	15	18
Orthoptera	crickets, grasshoppers	1548	40	80
Phasmida	phasmids	103	2	4
Plecoptera	stoneflies	199	4	5
Psocodea	lice, barklice, psocids	857	5	50
Siphonaptera	fleas	84	0	5
Strepsiptera	strepsipterans	42	0	4
Thysanoptera	thrips	946	82	85
Trichoptera	caddisflies	851	0	3
Zoraptera	zorapterans	1	0	0
Zygentoma	silverfish	70	0	5
Total		78 361	2151	5406

¹ From Australian Faunal Directory, accessed October 2018; described species only.

² Data from this publication.

³ KR Pullen estimate.

A significant margin of error is inherent in the estimates for the major groups in the table, due to differences between the groups in sampling effort, species-level taxonomic knowledge, and the

amount of effort invested in this study. However, it is worth noting that 30 species of *Castiarina* jewel beetles, 38 species of ladybird beetles (Coccinellidae), 53 species of native bees, at least 85 species of ants (Formicidae) and no less than 160 species of 'looper' moths (Geometridae) are recorded from Black Mountain. A number of the listed species represent distributional 'outliers' on current knowledge, an example being the velvet worm *Euperipatoides rowelli* (Onychophora), better known from wetter forests to the east. Around 21 invertebrate species recorded on Black Mountain are not native to Australia, but the majority of these are probably not resident within natural vegetation in the reserve. An exception would be the Honey Bee (*Apis mellifera*), whose ability to occupy tree hollows and rely on nectar and pollen from the native flora has meant it is now ubiquitous.



Fig 1. Native bees on Sticky Everlasting (*Xerochrysum viscosum*) (left) and a bristle fly *Rutilia* sp. on Burgan (*Kunzea ericoides*) (right). Photos: R Purdie.

Sampling of moths of the lower eastern slope of Black Mountain (or at least the phototactic ones) was substantially aided by the nightly operation of a fixed mains-powered mercury vapour light trap in bushland behind the CSIRO site for a period of about two decades in the late 1900s (see also Purdie 2018b). The device also attracted a large variety of beetles and other insects. The preparation and processing of this stream of material must have been a significant load on ANIC technical staff.



Fig. 2. Termite mounds (Order Blattodea) (left) and the Golden Orb Weaver (*Nephila edulis*) (right) are commonly seen on Black Mountain. Photos: R Purdie.

In terms of biogeographical relationships, the insect fauna of Black Mountain may be termed a South-eastern Australian Tablelands fauna. Some elements seem restricted to southern NSW, while others extend more widely north and/or south, in some cases even into Tasmania. A minor ‘inland’ component seems to infiltrate from the west. With the exception of a minority of widely distributed species (e.g. large and strong-flying Lepidoptera and Odonata), the fauna is largely distinct from that of the coastal region of NSW 100 km to the east, and also distinct from that of the higher, colder and mostly wetter mountainous parts of the western and southern ACT.

Black Mountain is significant as the type locality¹ of numerous invertebrate (principally insect) species, mainly reflecting the large number of specimens collected from the area. This study uncovered some 180 species (including 75 Diptera) described from Black Mountain, and more undoubtedly exist.

4. Using the lists

The lists provided in Appendices 1 and 2 are arranged alphabetically by order, family, genus and species; genus names are listed only once, with multiple congeners (i.e. species belonging to the same genus) separated by a semicolon. Species names are usually binomial, written as *Genus species*, but may be trinomial or quadriminomial, the latter written as *Genus (Subgenus) species subspecies*. To save space, authors’ names are not given; these can be found in other sources such as the Australian Faunal Directory.

Species known to be introduced to Australia by human agency (either intentionally or accidentally) carry an asterisk (*). A ‘[T]’ following a name indicates that the type locality of the species is Black Mountain. The abbreviation ‘sp.’, meaning species (singular), is used with a genus name to indicate that one or more species of that genus is represented in the study area, but none is identified. The abbreviation ‘nr’ (near) indicates a species similar to but apparently distinct from the name following.

5. Acknowledgements

I thank the following people who contributed species lists: Stuart Harris (Araneae); Laurence Mound (Thysanoptera); Suzi Bond (butterflies) and Michael Mulvaney (records in Canberra Nature Map). Robyn Meier kindly searched the CSIRO Biolink database for Black Mountain records. Anthony Whalen organised the extraction of information on invertebrate type specimens from the Australian Faunal Index database.

I am especially indebted to Adrienne Nicholson who single-handedly over a period of months reduced a draft list of over 2000 species of ACT Lepidoptera to the Black Mountain list presented here, then produced the expanded grasshopper list.

I am grateful to CSIRO for providing me with an Honorary Fellowship to prepare a catalogue of ACT insect species, and to Rosemary Purdie who invited me to contribute to the Black Mountain Symposium.

6. References

- Doherty, MD (2018) Vegetation types and vegetation dynamics on Black Mountain. Black Mountain Symposium 2018 Background Paper No. 3.
- Heritage Week Committee (1993) Hills of Canberra – people and place. Heritage ACT, pages 42–55.
- Purdie, RW (2018a) Vascular plants of Black Mountain, 1969–2017. Black Mountain Symposium 2018 Background Paper No. 5.
- Purdie, RW (2018b) Scientific collecting, monitoring and research on Black Mountain. Black Mountain Symposium 2018 Background Paper No. 16.

¹ A ‘type’ in this context is the original specimen on which the official naming and description of a species new to science is based; the place where that specimen was found is the ‘type locality’ of the species.

Invertebrates recorded from Black Mountain: Class Insecta (insects)

ORDER ARCHAEOGNATHA (BRISTLETAILS)**Meinertellidae***Machiloidea* sp.**ORDER BLATTODEA (COCKROACHES, TERMITES)****Blaberidae***Laxta granicollis**Panesthia australis***Blattidae***Melanozosteria capitolina* [T]**Ectobiidae***Ellipsoidion australe**Johnrehnia solida* [T]*Robshelfordia biramustyla* [T]**Kalotermitidae***Bifiditermes improbus**Ceratokaloterms spoliator**Glyptotermes eucalypti**Neotermes insularis***Rhinotermitidae***Coptotermes frenchi***Termitidae***Amitermes neogermanus*; *xylophagus* [T]*Nasutitermes dixonii*; *exitiosus***ORDER COLEOPTERA (BEETLES, WEEVILS)****Acanthocnemidae***Acanthocnemis nigricans***Aderidae***Syzetonellus alpicola***Anthicidae***Anthicus scydmaenideus**Lemodes coccinea**Trichananca* sp.**Anthribidae***Araecerus palmaris**Taburnus neglectus***Archeocrypticidae***Enneboeus fossoris**Gondwanenneboeus minutissimus***Belidae***Rhinotia filiformis*; *suturalis***Biphyllidae***Diplocoelus angustulus*; *dilataticollis***Bostrichidae***Bostrychopsis jesuita**Lyctodon bostrychoides**Lyctus brunneus*; *parallelocollis**Mesoxylion collaris*; *cylindricus**Minthea acanthacollis**Trogoxylon ypsilon**Xylobosca canina**Xylodeleis obispa**Xylotillus lindi***Bothriideridae***Deretaphrus erichsoni*; *ignarus*; *piceus*; *viduatus***Brentidae***Cordus* sp.*Perapion antiquum***Buprestidae***Agrilus hypoleucus**Anilara angusta*; *anthaxoides?*; *obscura?**Castiarina australasiae*; *balteata*; *commixta*;*crenata*; *deccemmaculata*; *deyrollei*;*erythroptera*; *hilaris*; *hoffmannseggi*;*humilis*; *ignota*; *indistincta*; *kerremansi*;*klugi*; *mustelamajor*; *nasuta*; *ochreiventris*;*octomaculata*; *octospilota*; *producta*;*rufipennis*; *scalaris*; *sexplagiata*; *skusei*;*subpura*; *subvicina*; *testacea*; *thomsoni*;*vicina*; *xystra* [T]*Diphucrania acuducta*; *gibbera*; *heroni*; *kohouti*;*leucosticta*; *marmorata*; *patricia*; *pulleni**Ethonion fissiceps*; *reichei**Helperella frenchi**Hypocisseis suturalis**Meliboeithon bicostatatum**Melobasis* nr *fulgurans*; *nervosa*; *nitidiventris*;*propinqua*; *purpurascens?**Nascio vetusta**Nascioides parryi**Neocuris coeruleans*; *gracilis**Pseudanilara purpureicollis**Selagis aurifera**Temognatha limbata*; *thoracica***Cantharidae***Chauliognathus lugubris*; *tricolor**Heteromastix* sp.**Carabidae***Adelotopus dytiscides*; *montisatri* [T];*nemosomoides**Agonocheila antipodum*; *biguttata*; *cribripennis*;*fenestrata**Anomotarus* (*Anomotarus*) *minor*; *moorei* [T];*unimaculatus*; *variegatus obscuripennis**Anomotarus* (*Lithostrotus*) *caerulescens**Arthropterus* sp.

Cainogenion (Cainogenion) ipsoides ipsoides
Cainogenion (Procaingenion) ephippiatum
Carenum laevigatum
Clivina (Clivina) quadratifrons
Craspedophorus australasiae
Demetrida suturata
Euthenarus bicolor [T]
Laccopterum foveigerum
Microlestodes (Cyclolestodes) ovatus [T]
Philophaeus australis
Pseudagonica minuta elongata [T]
Sarothrocrepis civica; humerata
Scopodes boops; sexpunctus sexpunctus;
sigillatus
Setodyschirius wilsoni
Sphallomorpha costalis; guttigera;
hydroporoides; maculata; nitiduloides;
rhomboidalis ; ruficollis [T]
Trigonothops (Trigonothops) flavofasciata

Cerambycidae

Adrium artifex
Aesiotyche favosa
Ancita australis
Atesta chiangi [T]; *ibidionoides; latifasciata;*
stigmosa; thorntoni
Bethelium signiferum
Brachytria erosa
Coleocoptus senio
Coptocercus pedator; pubescens; robustus;
rubripes
Distichocera macleayi
Ectosticta cleroides
Epithora dorsalis
Eroschema poweri
Eurynassa australis
Hesthesis sp.
Macrones exilis
Neostenus saundersi
Oroderes humeralis; mimulus
Pachydissus sp.
Paratesta chiangi; dorsalis
Phacodes obscurus; personatus
Phoracantha acanthocera; alternata; concolor;
flavopicta; mastersi; obscura; porosa;
punctata; recurva; semipunctata; synonyma;
tricuspis
Rhytiphora sp.
Sceleocantha glabricollis
Syllitus sp.
Tessaroma undatum
Tropis lepturoides; roei; rubea
Uracanthus triangularis
Xystrocera virescens
Zoedia divisa

Chrysomelidae

Acanthoscelides obtectus
Altica corrusca
Aporocera (Aporocera) lugubris
Aulacophora hilaris

Cadmus (Cadmus) litigiosus
Callidemum hypochalceum
Callosobruchus maculatus
Calomela curtisi; juncta; maculicollis; parilis;
vittata
*Chrysolina hyperici**
Dicranosterna immaculata
Euryspa howitti; simplex
Longitarsus victoriensis
Neodiaphanops sp.
Oulema medioplagiata
Paropsis aspera; atomaria
Paropsisterna beata; intacta; irina
Semelvillea waraganjiae

Ciidae

Cis canberrae [T]; *eremicus* [T]; *fuscipes;*
setiferus
Glyphidope variabilis
Malleecis flavus

Cleridae

Blaesiophthalmus accinctus
Crobenia irwini [T]
Cylidrus basalis; nigrinus
Eleale aspera; pulchra; simplex
Eunatalis flavopilosa; mastersii; planipennis;
porcata; spadicea; spinicornis
Lemidea australiae; cicatricosa; concinna;
exilis; hilaris; nitens; simulans; spinipennis;
subaenea
Necrobia ruficollis; rufipes
Phlogistus chrysurus; corallipes; eremita;
modestus
Scrobiger idoneus; splendidus
Stigmatium acerbum; gilberti; victoriae
Tarsostenodes guttulus
Tarsostenus carus; hilaris; univittatus
Tenerus abbreviatus
Trogodendron fasciculatum; mirabile
Zenithicola crassus

Coccinellidae

Bucolellus sp.
Bucolus frater; idyleae
Cleobora mellyi
Coccinella (Coccinella) transversalis
Cryptolaemus montrouzieri
Diomus capital; frater; impictus; notescens;
planulatus; sphragitis; sydneyensis
Harmonia conformis
Micraspis frenata
Orcus australasiae; bilumulatus
Rhyzobius cyaneus; discolor; forestieri; gordonii;
hirtellus; lophanthi; nitidus; pulchellus;
noctuabundus; umbratus; waterhousei;
ventralis
Rodatus bakewelli; boucardi; chaetonotus
Rodolia cardinalis
Scymnus blackburni; bunya; queenslandicus
Telsimia obscuripes
Wioletta elongatula

Corylophidae

Orthoperus sp.
Sericoderus sp.

Cryptophagidae

Anchicera sp.
Chilatoma sp.
*Cryptophagus cellaris**

Cucujidae

Platysus angusticollis; *integricollis*

Curculionidae

Amycterus elongatus
Chrysolopus spectabilis
Titinia tenuis

Dermestidae

Anthrenocerus confertus; *intricatus* [T]; *piliatus* [T]; *stigmaphilus*
Anthrenus (Nathrenus) verbasci
Dermestes ater
Reesa vespulae
Trogoderma apicale; *froggatti*

Dytiscidae

Allodessus bistrigatus
Antiporus femoralis; *gilbertii*; *interrogationis*
Chostonectes nebulosus
Copelatus australiae
Hydaticus parallelus
Lancetes lanceolatus
Liodessus shuckhardii
Megaporus hamatus; *howittii*
Necterosoma penicillatum; *undecimlineatum*
Onychohydus scutellaris
Platynectes bakewellii; *decempunctatus*;
octodecimmaculatus
Rhantus suturalis

Elateridae

Agrypnus caliginosus; *divaricatus*; *duplex*;
humilis; *mamillatus*; *marginipennis*;
pictipennis; *variabilis*
Anchastus sp.
Anilicus attenuatus; *parvus*; *xanthomus*
Arachnodima xenikon
Conoderus alternatus; *aphiloides*; *bruckii*;
submarmoratus; *tabidus*
Crepidomenus decoratus; *fulgidus*
Drymelater australis
Glypheus nigrinus
Hapatesus (Hapatesus) hirtus
Lingana illita
Litotelater divaricatus
Megapenthes automolus
Melanoxanthus futilis
Ophidius elegans
Paracalais funereus
Paracardiophorus assimilis [T]; *consputus*;
dimidiatus
Pseudaolus bimaculatus
Pseudotetralobus australasiae

Rangisia macleayi

Endomychidae

Holoparamecus castaneus; *caularus*
Idiophyes brevis

Erotylidae

Cnecosa insueta
Cryptophilus integer
Leucohimatium arundinaceum
Thallis australiae; *bifasciata*; *compta*; *janthina*;
vinula

Eucnemidae

Dromaeolus sp.
Dyscharachthis minutus
Euryptychus concolor; *porosus*

Geotrupidae

Australobolbus gayndahensis
Elephastomus gellarus; *meraldus* [T]

Heteroceridae

Heterocerus flindersi

Histeridae

Chlamydopsis ectatommae; *inaequalis*;
lawrencei [T]; *pygidialis*; *reticulata*
Pheidoliphila sp.
Saprinus pseudocyaneus

Hydrophilidae

Berosus approximans; *australiae*; *involutus*;
majusculus; *nutans*; *veronicae*
Chaetarthria nigerrimus
Enochrus elongatulus; *maculiceps*; *samae*
Helochares (Hydrobaticus) percyi; *tristis*
Hydrochus australis; *granicolis*; *obsoletus*
Hydrophilus albipes; *brevispina*; *latipalpus*
Laccobius decipiens
Limnoxenus zealandicus
Paracymus pygmaeus; *spenceri*
Sternolophus marginicollis

Laemophloeidae

Cryptolestes sp.
Placonotus sp.

Latridiidae

Aridius bifasciatus; *minutus*; *nodifer*;
semicostatus
Corticaria elongata; *ferruginea*; *japonica*;
lindensis; *ovalipennis*
Corticaria cuspidata; *hirtalis*; *laticollis*;
luzonica
Metophthalmus sp.

Leiodidae

Myrmecholeva acutifrons

Lucanidae

Figulus trilobus
Lamprima aurata

Lycidae

Calochromus sp.

Porrostoma rhipidium

Lymexylidae

Australimexylon fuscipennis
Atractocerus kreuslerae

Melandryidae

Talayra elongata

Meloidae

Palaestra foveicollis

Melyridae

Dicranolaius bellulus; *villosus*
Helcogaster nr *gagatinus*
Balanophorus brevipennis
Hypattalus abdominalis

Mordellidae

Hoshihananomia dumbrelli; *leucosticta*;
multiguttata
Mordella limbata; *promiscua*; *v-fasciata*;
wiburdi
Paramordellistena exilis
Tomoxioda aterrima
Zeamordella monacha

Mycetophagidae

Litargops intricatus
*Litargus balteatus**
*Typhaea stercorea**

Myraboliidae

Myrabilia brevicollis; *grouvelliana*; *lawrencei*

Nitidulidae

Amlearcha elegantior; *obscurior*
Australaethina pilistriata
Brachypeplus basalis; *binotatus*
Carpophilus aterrimus; *hemipterus**;
luridipennis
Cryptarcha australis; *laevigata*; *subnitida*
Cychramptodes murrayi
Epuraea californica; *meyricki*; *sparsior*; *sloanei*
Macleayana vesca
Rixerodes cornutululus
Thalycrodes australe; *cylindricum*; *mixtum*;
pulchrum
*Urophorus humeralis**

Phalacridae

Austroporus sp.
Litochrus major
Plalacrus sp.

Ptinidae

Calymmaderus sp.
Deltocrypta sp.
Diplocotes familiaris
Dorcatoma sp.
Dryophilodes sp.
*Ernobius mollis**
Hadrobregmus australiensis
*Lasioderma serricorne**
Methodus sp.

*Mezium affine**; *americanum**
*Ptinus clavipes**; *exulans*
Stagetomorphus sp.

Rhipiceridae

Rhipicera femorata

Ripiphoridae

Euctenia sp.
Macrosiagon difficile; *novaehollandiae*;
rufofasciatum; nr *tricolor*
Neonephrites partiniger
Ptilophorus gerstaeckeri; *persimilis*
Rhipidioides sp.

Scarabaeidae

Acrossidius tasmaniae
Adoryphorus coultonii
Anomalomorpha giveni
Anoplognathus chloropyrus; *hirsutus*; *montanus*;
pallidicollis; *pindarus* [T]; *porosus*;
suturalis; *velutinus*; *viriditarsis*
Antitrogus morbillosus
Automolius vulgaris
Bisallardiana gymnopleura
Chlorobapta bestii; *frontalis*
Chondropyga dorsalis
Cliethria eucnemis
Cryptodus caviceps; *paradoxus*; *tasmannianus*
Dasygnathus trituberculatus
Eupoecila australasiae
Frenchella hirticollis
Gnaphalopoda carnei [T]
Heteronyx aequaliceps; *aphodioides*; *australis*;
chlorotica; *constans*; *excisus*; *glabrata*;
granum; *major*; *oblongus*; *ovatus*; *piceus*;
pilosellus; *praecox*; *puncticollis*; *relictus*;
rugosipennis; *simius*; *sloanei*;
Liparetrus pectinatus [T]
Maechidius brevis; *corrosus*; *latus*; *longitarsus*;
sordidus; *variolosus*
Microvalgus spp.
Neorrhina punctata
Onthophagus anchommatus; *australis*; *declivis*;
dunningi; *granulatus*; *pexatus*; *squalidus*
Ophropyx hispida
Phyllotocus macleayi; *rufipennis*
Repsimus aeneus
Rhopaea decipiens
Scitala aureorufa; *rorida*; *sericans*
Semanopterus subcostatus
Sericesthis consanguinea; *geminata*; *ignota*;
micans; *nigrolineata*; *parallela*
Telura alta; *petiolata* [T]
Trichaulax philipsii

Scirtidae

Austrocyphon aculeatus [T]
Nanocyphon australicus [T]
Nothocyphon ypsilon [T]
Peneveronatus actensis [T]
Prionocyphon uncatius [T]

Silphidae*Ptomaphila lacrymosa***Silvanidae***Australodendrophagus australis**Austronausibius leai**Cryptamorpha blackburni; delicatula; victoriae**Macrohylota lucius; militaris**Oryzaepphilus surinamensis****Sphindidae***Aspidiphorus globosus***Staphylinidae***Leptostibina blackmontis* [T]*Nasutiphilus flavus* [T]; *niger* [T]*Neohypnus andinus**Thyrecephalus cyanopterus; orthodoxus;*
*rufitarsis**Xanthophius luridipennis***Tenebrionidae***Adelium angulicolle; brevicorne; licinoides;*
*orphana; porcatum; pustulosum**Amarygmus aeger**Atoichus bicolor**Celibe striatipennis**Chalcopteroides columbinus; cupripennis;*
*spectabilis**Cillibus incisus**Cyphaleus metallescens**Ecnolagria grandis**Helea ovata**Homotrystis cisteloides; laticollis; limbata;*
*lugubris**Lepturidea fastigiata; fusca; opacicollis;*
*pulchra; punctulaticollis; unicolor; viridis**Meneristes australis**Metistete gibbicollis; pimelioides; subsulcata**Metriolagria formicicola**Nyctozoilus deyrollei**Phanechloros punctipennis**Platyphanes pilosus**Prophanes simplex**Pterohelaeus granuliger; guerini; hirtus;*
*oblongus; piceus; planus; socialis;**striatopunctatus**Saragus marginellus**Tanychilus* sp.*Titaena columbina**Toxicum insigne**Uloma planimentoides; sanguinipes**Ulomoides heroni; tetraspilotus**Yarranum crenicolle***Trogossitidae***Ancyrona vesca**Leperina lacera**Peltonyxa invalida***Ulodidae***Dipsaconia pyritosa**Meryx aequalis**Notocerastes blackburni**Ulodes hispidus***Zopheridae***Orthocerodes australis***ORDER DIPTERA (FLIES)****Agromyzidae***Liriomyza cassiniae* [T]; *impolita* [T]*Phytobia optabilis* [T]**Apioceridae***Apiocera similis* [T]**Asilidae***Neoaratus abludo***Bibionidae***Dilophus tetrascolus* [T]**Bombyliidae***Balaena abscondita; latelimbata**Comptosia stria***Calliphoridae***Calliphora augur; stygia***Cecidomyiidae***Trichotoca fraterna* [T]**Ceratopogonidae***Allohelea harpagonifera* [T]*Culicoides sigmoidus* [T]*Forcipomyia (Lepidohelea) bullata* [T];
parvicrater [T]*Forcipomyia (Metaforcipomyia) colona* [T]*Forcipomyia (Pedilohelea) proavia* [T]*Lanatomyia miles* [T]*Leptoconops (Leptoconops) riverinaensis* [T]**Chamaemyiidae***Leucochthiphila photophila* [T]*Pseudoleucopis benefica* [T]; *nigromontana* [T];
trichaeta [T]**Chironomidae***Cricotopus annuliventris**Riethia zeylandica**Tanytarsus bispinosus; communi* [T]**Chloropidae***Gaurax sabroskyi* [T]*Lipara australis* [T]*Tricimba lata* [T]**Culicidae***Aedes alboannulatus***Dolichopodidae***Amblypsilopus montanorum; triscuticatus**Austrosciapus actensis* [T]*Mesorhaga canberrensis* [T]*Nothorhaphium aemulans**Parentia dispar; nigropilosa**Sympycnus (Sympycnus) claudicans* [T]

Systemus australis [T]
Thrypticus australis [T]

Empididae

Anaclastoctedon prionton [T]

Fanniidae

Fannia capitalis [T]

Fergusoninidae

Fergusonina atricornis; *carteri*; *curriei*; *frenchi*;
nicholsoni

Heteromyzidae

Diplogeomyza conformis [T]
Zentula vittata [T]

Lauxaniidae

Homoneura eurymelon; *fuscicornis*; *stricta*
Trypetisoma vulgare

Limoniidae

Geranomyia sp.
Molophilus (Austromolophilus) warriuka [T]

Muscidae

Atherigona alpha [T]; *collessi* [T]
Musca vetustissima

Pipunculidae

Clistoabdominalis colophus
Eudorylas australinus [T]; *cernuus* [T]

Platypezidae

Lindneromyia australquila [T]

Platystomatidae

Duomyia capitalis [T]; *personata* [T]

Psychodidae

Psychodocha squamipleuris [T]

Pyrgotidae

Adapsona commoni [T]
Cardiacera nigrescens [T]
Facilina commoni [T]; *tertia* [T]
Frontalia noctua [T]; *tonnoiri* [T]
Osa commoni [T]; *simplex* [T]; *sinclairae* [T]

Scatopsidae

Colobostema bihastatum [T]; *diversum diversum*
[T]; *retusum* [T]; *rhamphe*
Diamphidicus australis [T]
Reichertella digitata [T]

Scenopinidae

Paratrichia lobosa [T]

Sphaeroceridae

Howickia subsinuata [T]
Pseudocollinella difficilis [T]

Stratiomyidae

Exaireta spinigera

Syrphidae

Melangyna (Austrosyrphus) collatus; *sellenyi*

Tabanidae

Scaptia patula

Tachinidae

Anagonia commoni [T]; *lasiophthalma* [T];
minor [T]; *norrisi* [T]; *zentae* [T]
Austronilea livida [T]
Carcelia (Euryclea) flavitibia [T]
Chetogaster canberrae [T]
Geraldia biseta [T]
Microtropesa canberrae [T]; *sinuata*
Rutilla sp.

Tephritidae

Austrotephritis pelia; *poenia*; *pumila*
Ceratitella loranthi
Dioxyna conflicta
Euaresta aequalis
Hyalopeza schneiderae
Oedaspis apicalis
Parahyalopeza pantosticta [T]
Paraspathulina apicomacula [T]
Spathulina acroleuca
Sphenella ruficeps
Trupanea glauca

Therevidae

Acupalpa albitarsa
Agapophytus antheliogynaion [T]; *aterrimus*;
australasiae; *chrysoisysyrus* [T];
dioctriaeformis; *galbicaudus*; *ruficaudus*
Anabarhynchus danielsi; *decipiens*; *helvenacus*;
hyalipennis; *niveus*; *plumbeoides* [T];
plumbeus; *projectus*; *tristis*
Bonjeania angelikae; *clamosis*; *flavofemoralis*;
nitidifrons
Laxotela gaimarii [T]
Nanexila manni
Neodialineura nitens

Tipulidae

Leptotarsus (Leptotarsus) clavatus; *macquartii*
flavolateralis [T]

Trichoceridae

Nothotrichocera cranstoni [T]

ORDER EMBIOPTERA (WEBSPINNERS)

Australembiidae

Metoligotoma ingens [T]

ORDER HEMIPTERA (BUGS)

Acanthosomatidae

Eupolemus marginatus

Aleyrodidae

Dumbletoniella callistemoni [T]

Aphididae

*Aulacorthum (Aulacorthum) solani**
*Brachycaudus (Brachycaudus) helichrysi**
*Capitophorus elaeagni**; *hippophaes**

*Lipaphis pseudobrassicae**
*Macrosiphum (Macrosiphum) rosae**
Toxoptera citricida

Cicadellidae

Macroceps sp.
Putoniessa sp.
Rhotidoidea sp.
Rosopaella aldutra; *crofta*; *evansi* [T]; *geoffroyi*;
leurenensis; *lopada*; *magnata* [T]; nr *napais*;
nigroflava; *praeda* [T]; *swani*
Rubria brevifrons
Trocnada minuta

Cicadidae

Galanga labeculata
Psaltoda moerens
Yoyetta nr *denisoni*

Cixiidae

Chidaea dayi [T]
Ronaldia fennahi [T]

Clastopteridae

Chaetophyes compacta

Coccidae

Coccus hesperidum
Parthenolecanium persicae
Pulvinaria psidii

Eriococcidae

Eriococcus confusus; *coriaceus*
Lobimargo donaldsoni [T]

Geocoridae

Stylogeocoris biroi

Lygaeidae

Nysius vinitor
Spilostethus pacificus

Miridae

Austrocapsus antennatus
Creontiades dilutus

Nepidae

Laccotrephes (Laccotrephes) tristis

Notonectidae

Anisops doris

Pentatomidae

Agonoscelis rutila
Commius elegans
Cuspicona privata
Dictyotus caenosus
Menida plebeia
Nezara viridula
Ocirrhoe dallasi
Oncocoris apicalis
Piezodorus oceanicus

Pseudococcidae

Australicoccus grevilleae
Nipaecoccus exocarpi

Planococcus citri; *minor*
Pseudococcus longispinus

Psyllidae

Acizzia pendulae [T]
Cardiaspina albitextura
Creiis lituratus
Cryptoneossa triangula
Glycaspis brimblecombei; *immaceria* [T]
Hyalinaspis nigricamera [T]; *pallidinota* [T];
semispherula [T]; *vitreipelta* [T]

Reduviidae

Aradelloides wilsoni
Gminatus australis
Leistarches serripes
Ptilocnemus pallidus

Rhyparochromidae

Lamproceps australis
Porander scudderi

Scutelleridae

Choerocoris paganus
Scutiphora pedicellata

Tingidae

Australocader kerzhneri [T]

Triozidae

Schedotrioza eucalypti

ORDER HYMENOPTERA (ANTS, BEES, WASPS)

Apidae

Amegilla (Zonamegilla) asserta
*Apis mellifera**
Exoneura (Exoneura) sp.

Bethylidae

Eupsenella baada; *barada*; *bilingara*; *ceciliae*;
diemenensis; *insulana*; *jaburara*

Braconidae

Amyosoma rufescens [T]
Chelonus fischeri [T]
Choeras dissors [T]
Diolcogaster adiastrata [T]
Jarra phoracantha [T]
Phanerotomella obscura [T]
Pirramurra tuberculata
Pseudosyngaster annulicornis
Simplicibracon nigritarsus [T]

Colletidae

Euryglossa depressa
Goniocolletes subdolos
Hylaeus (Euprosopis) elegans
Hylaeus (Planihylaeus) daviesiae [T];
probligenatus [T]; *quadriceps*
Hylaeus (Prosopisteron) sp.
Hyleoides concinna
Hyphesma atromicans; *federalis* [T]

Leioproctus (Leioproctus) amabilis; clarki;
plumosus; versicolor
Trichocolletes nigroclypeatus; venustus

Crabronidae

Rhopalum grahami [T]
Trypoxylon schmiedeknechti connexum

Dryinidae

Bocchopsis australis [T]

Embolemitidae

Ampulicomorpha australis [T]

Eulophidae

Goetheana rabelaisi [T]

Eurytomidae

Austrophotismus daicles

Formicidae

Acropyga myops; pallida
Amblyopone longidens; michaelsoni
Anonychomyrma sp.
Aphaenogaster longiceps
Arnoldius sp.
Austromorium flavigaster
Camponotus aeneopilosus; consobrinus; evae
zeuxis; gasseri; intrepidus; lownei; nigriceps;
nigroaeneus; suffusus
Cardiocondyla nuda
Cerapachys sp.
Crematogaster sp.
Doleromyrma darwiniana
Dolichoderus scabridus
Epopostruma natalae; quadrispinosa; wardi
Heteroponera sp.
Iridomyrmex bicknelli; calvus; chasei; discors;
infuscus [T]; *mayri; mjobergi; obscurior;*
purpureus; rufoniger; sucheroides; suchieri;
victorianus
Mayriella ebbei
Melophorus sp.
Meranoplus sp.
Mesostruma bella; exolympica
Monomorium fieldi; kiliani; leae; rothsteini;
sordidum; sydneyense; tambourinense
Myrmecia forceps; fulvipes; gulosa; nigriceps;
picta; piliventris; pilosula; pyriformis;
simillima; tepperi
Myrmecorhynchus emeryi
Notoncus hickmani
Nylanderia rosae
Ochetellus sp.
Orectognathus clarki
Papyrius sp.
Parapatrechina minutula
Pheidole sp.
Plagiolepis sp.
Platythyrea turneri
Podomyrma gratiosa
Polyrhachis ammon; leae; phryne; schwiedlandi
Ponera leae

Prolasius sp.
Pseudonotoncus sp.
Rhytidoponera metallica; tasmaniensis; victoriae
Solenopsis sp.
Sphinctomyrmex sp.
Stigmacros barretti
Strumigenys sp.
Tapinoma sp.
Technomyrmex sp.
Tetramorium sp.

Gasteruptionidae

Pseudofoenus iqbali [T]

Halictidae

Homalictus (Homalictus) punctatus;
sphecodoides; urbanus
Lasioglossum (Australictus) peraustrale
Lasioglossum (Chilalictus) bicingulatum;
brunnasetum; calophyllae; clelandi;
cognatum; erythrurum; gilesi;
hemichalceum; humei; instabilis; lanarium;
littleri; opacicolle; orbatum; platycephalum;
pulvitectum; repraesentans; victoriellum;
vitripenne; willsi
Lasioglossum (Parasphecodes) hiltacum;
lactium; subrussatum; sulthicum;
tribuarium
Lipotriches (Austronomia) nr flavoviridis

Ichneumonidae

Akymichneumon rufipes
Asmenophylax sp.
Australochus clypeator [T]
Casinaria hesperiophaga [T]
Enicospilus skeltonii; sausi
Eucaphila vulgaris
Junctivena gallowayi
Lycorina canberrae [T]
Megaceria pagana
Nebostenus terebratus [T]
Neolophron canberrai [T]
Orthocentrus trichomma
Sciron fundator
Xylostenus curtus [T]

Megachilidae

Megachile (Eutricharaea) maculariformis;
serricauda
Megachile (Hackeriapis) oblonga; tosticauda
Megachile [unplaced] lucidiventris

Monomachidae

Monomachus antipodalis

Mymaridae

Boccacciomymar decameron [T]

Peradeniidae

Peradenia micranepsia [T]

Pompilidae

Ctenostegus binghi; chicha; murrumbidgee;
ouyen

Idiaporina canberra [T]
Psoropempula nulgarra [T]; *puna* [T]

Scelionidae

Embidobia australica [T]; *metoligotomae* [T]
Mirobaeoides ater; *scutellaris*
Scelio asperatus; *chortoicetes*; *edeowie*;
improcerus; *orientalis*; *parvicornis*;
striatifacies; *unidentis* [T]

Trissolcus egeria; *oedipus*; *oeneus*; *ogyges*

Stephanidae

Parastephanellus isoglyptos

Torymidae

Megastigmus quinquesetae [T]

Vespidae

Polistes (Polistella) humilis
*Vespula germanica**

ORDER LEPIDOPTERA (BUTTERFLIES, MOTHS)

Anthelidae

Anthela ferruginosa; *nicothoe*; *ocellata*; *varia*
Chelepteryx collesi
Chenuala heliaspis
Nataxa flavescens
Pterolocera sp.

Batrachedridae

Batrachedra arenosella

Blastodacnidae

Microcolona sp.

Bucculatricidae

Bucculatrix sp.
Ogmograpts barloworum [T]; *maxdayi* [T];
paucidentatus [T]; *racemosa*

Carposinidae

Bondia nigella
Carposina latebrosa; *loxolopha*; *mediella*;
petraea
Coscinoptycha improbana
Paramorpha aquilana; *rhachias*
Sosineura mimica

Choreutidae

Tebenna micalis

Coleophoridae

Coleophora albiradiata [T]

Cosmopterigidae

Labdia sp.
Leptozelestis sp.
Limnaecia camptosema; *charactis*; *chionospila*;
cirrhazona; *isozona*; *scoliosema*
Macrobathra alternatella; *anacampta*;
ceraunobola; *chrysotoxa*; *constrictella*;
desmotoma; *hamaxitodes*; *heminephela*;

isoscelana; *leucopeda*; *myriophthalma*;
platychroa; *xuthocoma*
'Oecophora' hypochalca
Pyroderces sp.
Stigmatophora argyrostrepta

Cossidae

Culama australis?; *glauca*
Endoxyla affinis; *arachnophora*; *encalypti*;
epicycla; *lichenea*; *liturata*; *nubila*
Sympycnodes digitata; *dunnorum*; *rhapsodes*
Zyganisus fulvicollis

Crambidae

Achyra affinitalis; *massalis*
Anemosa exanthes
Anydraula glycerialis
Autarotis milvellus
Calamotropha dielota; *leptogrammellus*;
paludella
Canuza euspilella
Culladia cuneiferella
Deuterarcha xanthomela
Diasemiopsis ramburialis
Diathrausta ochreipennis
Dichocrocis clytusalis
Eclipsiodes crypsixantha
Eudonia anthracias; *cleodoralis*
Glaucoccharis dilatella
Glycythyma leonina
Glyphodes microta
Hednota acontophora; *bifractella*; *bivittella*;
crypsichroa; *diargyra*; *grammella*;
invalidella; *longipalpella*; *opulentella*;
panteucha; *pedionoma*; *relatalis*; *xylophaea*
Hellula hydralis
Hygraula nitens
Ischnurges illustralis
Metallarcha diplochrysa
Metasia achroa; *dicealis*; *familiaris*; *liophaea*
Musotima nitidalis; *ochropteralis*
Nacoleia mesochlora; *oncophragma*; *rhoeoalis*
Nomophila corticalis
Notarcha chrysoplata
Omiodes diemenalis
Ostrinia furnacalis
Palpita austrounionalis
Paraponyx polydectalis; *tullialis*
Parotis atlitalis
Phanomorpha dapsilis
Ptochostola microphaeella
Pyrausta panopealis
Sceliodes cordalis; *crocospila*; *exhibitilis*;
paracycla
Sedenia cervicalis; *rupalis*
Spoladea recurvalis
Strepsinoma foveata
Tawhitia pentadactylus
Tipanaea patulella
Uresiphita ornithopteralis

Depressariidae

Enchocrates sp.
Eutorna diaula; *leptographa*; *phaulocosma*;
tricasis
'*Oecophora*' *iodes*
Pedois anthracias; *humera*; *lewinella*;
sarcinodes

Elachistidae

Elachista (Atachia) coalita [T]; *flocella* [T]
Elachista (Elachista) platina [T]; *sandaraca* [T]

Erebidae

Achaea argilla; *janata*
Aloa marginata
Amata aperta; *trigonophora*; *xanthura*
Amyna natalis; *punctum*
Anestia ombrophanes; *semiochrea*
Anomis involuta
Arrade destituta; *leucosmalis*
Artigisa impropria; *melanephele*
Asura lydia
Calamidia hirta
Calathusa ischnodes; *thermosticha*
Castulo doubledayi
Corgatha dipyra; *molybdophaes*; *sideropasta*
Crioa hades
Damias pelochroa
Dasypodia cymatodes; *selenophora*
Diatenes aglossoides; *gerula*
Dichromia quinquialis
Donuca lanipes; *spectabilis*
Dysgonia frontinus
Eilema plana
Ericcia subsignata
Eublemma cochylioides; *inconspicua*;
leucodesma; *nymphodora*
Eudesmeola lawsoni
Eudocima materna
Euproctis baliolalis; *edwardsii*; *marginalis*
Eutane terminalis
Grammodes justa; *ocellata*; *oculicola*
Halone coryphoea; *sejuncta*; *servilis*
Heliosia jucunda
Hypena masurialis
Hypocala deflorata
Icta fulviceps
Iropoca rotundata
Laelia obsoleta
Lophotoma diagrapha; *metabula*
Manulea replana
Mataeomera coccophaga; *ligata*; *mesotaenia*
Meranda susialis
Meyrickella torquesauria
Narangodes nigriscata
Nyctemera amicus
Ophiusa parcemacula
Orgyia anartoides
Ozarba chrysoaspis
Palaeosia bicosta
Pantylia canescens; *diemeni*; *sparsa*
Phaeophlebosia fuscifera

Phenacomorpha bisecta
Philenora irregularis
Philogethes metableta
Phytometra formosalis; *laevis*
Praxis difficilis; *edwardsii*; *marmarinopa*;
pandesma; *porphyretica*
Prionoptera grammatis
Prorocopsis euxantha
Rhapsa suscitalis
Rhodina falcularis
Sandava scitissignata; *xylistis*
Scaptosyle monogrammaria
Scoliacma bicolora; *nana*
Sophta concavata
Spilosoma canescens; *curvata*; *glatignyi*
Stenoscapta venusta
Tathorhynchus fallax
Teia anartoides
Termessa gratiosa; *laeta*; *nivosa*; *shepherdi*;
xanthomelas; *zonophanes*
Thallarcha albicollis; *chrysochaes*; *fusa*;
jocularis; *oblita*; *partita*; *pellax*; *phalarota*;
sparsana; *trissomochla*
Thermeola sp.
Threnosia heminephes
Tigrioides alterna
Trigonistis demonias
'*Trigonistis*' *asthenopa*
Utetheisa lotrix; *pulchelloides*

Ethmiidae

Ethmia clytodoxa; *eupostica*

Galacticidae

Amphithera heteromorpha

Gelechiidae

Ardozyga hemichlaena; *telopis*
Macrenches clerica
Scrobipalpa aptatella
Symmetrischema tangolias

Geometridae

Adeixis inostentata
Aeolochroma metarhodata
Amelora anepiscepta ; *arotraea*; *demistis*;
goniota; *leucaniata*; *mesocapna*
Amphiclasta lygaea
Anachloris subochraria; *uncinata*
Androchela milvaria
Anomocentris trissodesma
Antasia flavicapitata
Antictenia punctunculus
Apodasmia rufonigraria
Arhodia lasiocamparia
Austroterpna paratorna
Authaemon stenonipha
'*Boarmia*' *panconita*
'*Camptogramma*' *severata*; *squamulata*
Capusa cuculloides; *senilis*; *stenophara*
Casbia melanops; *pallens*; *tetramera*;
Cassythaphaga macarta

Chlenias banksiaria; *belophora*; *ochrocrana*
Chloroclystis approximata; *filata*; *pallidiplaga*
Chlorocoma stereota; *vertumnaria*
Chrysolarentia heliacaria; *imperviata*;
leptophrica; *lucidulata*; *mecynata*;
subrectaria; *vicissata*
Ciampa arietaria; *chordota*; *heteromorpha*
Circopetes obtusata
Cryphaea xyliina
Crypsiphona ocultaria
Cyneoterpna alpina; *wilsoni*
Dichromodes ainaria; *atrosignata*; *confluaria*;
consignata; *disputata*; *estigmaria*
Didymoctenia exsuperata
Dissomorphia australiaria
Dithalama cosmospila
Dolabrossa sp.
Dysbatus stenodesma
Eccymatoge callizona; *fulvida*; *morphna*
Ectropis bispinaria; *excursaria*; *fractaria*
Epicyme rubropunctaria
Epidesmia hypenaria; *perfabricata*
Epyaxa hyperythra; *sodaliata*; *subidaria*
Eucyclodes buprestaria; *insperata*
Euloxia meandraria
Fisera belidearia; *eribola*
Gastrina cristaria
Gastrinodes argoplaca; *bitaeniaria*
Gastrophora henricaria
'Gynopteryx' ada
'Hydriomena' plagiocausta
Hypobapta diffundens; *percomptaria*
Hypodoxa muscosaria
Idaea costaria; *inversata*; *nephelota*
Idiodes apicata
Isturgia pentheararia
Lipogya experimentaria
Maxates centrophylla
Melanodes anthracitaria
Microdes diplodonta; *squamulata*; *villosata*
Mictodoca toxenta
Mnesampela comarcha; *lenaea*; *privata*
Monoctenia smerintharia
Nearcha aridaria; *nullata*; *pseudophaes*; *ursaria*
Niceteria macrocosma
Nisista notodontaria; *serrata*
Oenochroma privata; *subustaria*; *vetustaria*;
vinaria
Paralaea ochrosoma; *porphyrinaria*; *sarcodes*
Paraterpna harrisoni
Parosteodes fictiliaria
Phallaria ophiusaria
Phelotis cognata
Phrataria bijugata; *transcissata*
Phrissogonus laticostata
Pingasa cinerea
Plesanemma fucata
Poecilasthena pulchraria
Prasinocyma rhodocosma; *semicrocea*
Psilosticha absorpta; *actata*; *pristis*

Rhinodia rostraria
Rhuma argyraspis
Rhynchopsota rhyncophora
Sauris lichenias
Scioglyptis chionomera; *loxographa*; *lyciaria*
Scopula oppilata; *perlata*; *rubraria*
Smyriodes aplectaria
Stibaroma melanotoxa
Syneora praecisa
Taxeotis endela; *exsectaria*; *intextata*; *subvelaria*
'Tephrosia' externaria
Thalaina clara
Visiana brujata
Xanthorhoe anaspila; *anthracinata*; *strumosata*;
vacuaria; *xanthospila*
Zermizinga sinuata
Zeuctophlebia squalidata

Glyphipterigidae

Glyphipteryx chrysoplanetis; *cyanophracta*;
leucoplaca; *meteora*; *palaeomorpha*;
perimetalla

Gracillariidae

Acrocercops alycidota; *antimima*; *irrorata*;
laciniella; *leptalea*; *ophioderes*; *parallela*;
plebeia
Lithocolletis sp.
Phyllocnistis sp.

Heliocosma group

Acosara polyxena
Heliocosma argyroleuca; *incongruana*
Hyperxena sp.

Hepialidae

Abantiades barcas; *labyrinthicus*; *magnificus*
Oncopera rufobrunnea
Oxycanus antipoda; *dirempta*; *silvanus*
Trictena atripalpis

Hermiiniidae

Lithilaria ossicolor
Mormoscopa phricozona; *sordescens*

Hesperiidae

Dispar compacta
Netrocoryne repanda
Ocybadistes walkeri
Taractrocera papyria
Toxidia peron
Trapezites luteus; *phigalia*; *phigalioides*

Hypertrophidae

Allotropa sp.
Eupselia aristonica; *beatella*; *carpocapsella*;
melanostrepta; *satrapella*; *theorella*
Hypertropa chlaenota; *tortriciformis*
Peritropa oligodrachma
Thudaca mimodora

Lasiocampidae

Pernattia pusilla
Entometa apicalis; *decorata*; *guttularis*

Genduara acedesta; *punctigera*
Opsirhina lechriodes
Pararguda australasiae; *crenulata*; *nasuta*
Pinara cana; *obliqua*
Porela delineata; *vetusta*
Symphyta colpodes?

Lecithoceridae

Crocantbes prasinopis

Limacodidae

Doratifera oxleyi; *pinguis*; *quadriguttata*
Pseudanapaea transvestita

Lophocoronidae

Lophocorona melanora [T]

Lycaenidae

Acrodipsas aurata
Candalides acasta; *heathi*; *hyacinthinus*
Hypochrysops delicia
Jalmenus evagoras; *ictinus*
Lampides boeticus
Nacaduba biocellata
Neolucia agricola
Ogyris olane
Theclinesthes serpentatus
Zizina otis

Lyonetiidae

Dascia sagittifera

Momphidae

Zapyrastra sp.

Noctuidae

Acontia clerana; *detrita*; *hieroglyphica*; *nivipicta*
Acrapex albicostata; *exsanguis*
Aedia leucomelas
Agrotis infusa; *ipsilon*; *munda*; *porphyricollis*;
radians
Apina callisto
Athetis tenuis
Australothis rubescens
Bathytricha truncata
Buciara bipartita
Callopietria rivularis
Chasmina pulchra
Chrysodeixis argentifera; *eriosoma*; *subsicens*
Cirphis ebriosa
Comocrus behri
Condica aroana
Cosmodes elegans
Cruria donowani
Ctenoplusia albostrata
Dasygaster padockina
Diarsia intermixta
Ectopatria horologa; *nniodes*; *mundoides*;
paurogramma
Epicyrtha leucostigma; *melanops*
Eremochroa alphitias
Eulocastra tripartita
Eutrichopidia latinus

Hecatesia fenestrata
Helicoverpa armigera; *punctigera*
Heliocheilus aberrans; *cramboides*; *eodora*;
ionola; *moribunda*; *pallida*; *vulpinotatus*
Heliothis punctifera
Himerois basiscripta
Hypoperigea tonsa
Idalima affinis
Ipanica cornigera
Leucania cruegeri; *diatrecta*; *stenographa*; *uda*
'Leucania' exarans; *obumbrata*; *obusta*
Maliattha amorpha; *ritsemiae*
'Mamestra' dictyota
Musothyma cyanastis
Mythimna convecta;
Neumichtis expulsa; *mesophaea*; *nigerrima*;
saliaris; *signata*; *spumigera*
Paromphale caeca
Periscepta polysticta
Persectania dyscrita; *ewingii*
Phalaenoides glycinae
Prometopus inassueta
Proteuxoa atra; *bistrigula*; *capularis*;
cinereicollis; *florescens*; *heliosema*;
hydraecioides; *marginalis*; *mesombra*;
metaneura; *microspila*; *oxygona*; *paragypsa*;
porphyrescens; *restituta*; *spodias*;
testaceicollis; *tortisigna*
Sasunaga tenebrosa
Spodoptera exigua; *litura*; *mauritia*
Xanthodes amata; *congenita*
'Xanthoptera' macrosema

Nolidae

Armactica columbina; *conchidia*
Austrocarea iocephala
Earias chlorodes; *huegeliana*; *parallela*;
smaragdina
Elesma subglauca
Nanaguna clopea
Nola albalis; *delograptia*; *irenica*; *paromoea*;
phaeogramma; *pleurosema*; *semograptia*;
tetralopha
Orthocraspis leptoplasta
Uraba lugens

Notodontidae

Destolmia lineata
Epicoma contristis; *melanospila*; *tristis*
Hobartina eusciera
Hylaeora capucina; *caustopis*; *dilucida*
Neola semiaurata
Sorama bicolor
Trichiocercus sparshalli

Nymphalidae

Acraea andromacha
Charaxes sempronius
Danaus petilia; *plexippus*
Geitoneura klugii
Heteronympha merope; *paradelpha*; *penelope*
Hypolimnas bolina

Junonia villida
Tirumala hamata
Vanessa itea; kershawi

Oecophoridae

Acanthodela protophaes
Ageletha hemiteles
Agriophara axesta; gravis
Anomozancla scopariella
Atholosticta oxypeuces
Brachynemata cingulata
Catacometes hemiscia
Catoryctis sciastis
Cirromitra tetratherma
Cnecophora cinetica
Coeranica isabella
Coesyra phaeozona
Coracistis erythrocosma
Corethropalpa melanoneura
Crepidosceles orthomochla
Cryptolechia triphaenatella
Delexocha ochrocausta
Ericibdela delotis
Eulechria electrodes; isogramma; xeropterella
Hemibela hemicalypta
Hoplomorpha camelaea
Ioptera demica
Ironopolia sobriella
Maroga melanostigma
Myrascia bracteata
Notodryas vallata
Olbonoma triptycha
Olenacantha egelida
Oxythecta acceptella; loxomochla
Palimmeces habrophanes
Parergophela melirrhoa
Petalanthes hexastera
Phauloplana illuta
Philobota auxolyca; chionoptera; lysizona;
productella
Phryganeutis cinerea
Phthonerodes peridela [T]
Phytotrypa propriella
Piloprepes anassa
Prepalla tephрина
Ptochosaris horrenda
Satrapia thesaurina
Stathmopoda melanochra
Tanyzancla marionella
Telecrates laetiorella
Thema macroscia
Tisobarica thytera
Tortricopsis aulacois; uncinella
Wingia lambertella

Oenosandridae

Discophlebia catocalina?; lucasii
Oenosandra boisduvalii

Papilionidae

Graphium macleayanum
Papilio aegaeus; anactus; demoleus

Pieridae

Appias paulina
Belenois java
Catopsilia pyranthe
Delias aganippe; harpalyce
Eurema smilax
*Pieris rapae**

Plutellidae

Phalangitis sp.
Plutella psammochroa; sera; xylostella
Tritymba acrospila; pamphaea

Psychidae

Ardiosteres moretonella; velutinana
Cebysa leucotelus
'Chalia' grisea
Clania ignobilis; lewinii
Hyalarcta huebneri
Lepidoscia arctiella; carlotta; cataphracta;
characota; tyrobathra
Lomera boisduvalii
'Plutorectis' capnaea
Trigonocyttara clandestina

Pterophoridae

Imbophorus aptalis
Platyptilia celidotus
Sinpunctiptilia emissalis
Stangeia xerodes
Stenoptilia zophodactylus

Pyralidae

Asarta fuliginosa
Heteromicta pachytera
Lasiosticha canilinea
Spectrotrota fimbrialis

Roeslerstammiidae

Nematobola orthotricha
Thereutis chionozyga

Saturniidae

Opodiphthera eucalypti; helena

Sphingidae

Agrius convolvuli; godarti
Hippotion celerio; scrofa
Hyles livornicoides

Thyrididae

Aglaopus centiginosus; pyrrhatus

Tineidae

Acridotarsa sp.
Craniosara pyrotricha
Edosa ochracea
Moerarchis inconcisella
Monopis crocicapitella; ethelella; icterogastra;
meliorella
Tinea corynephora
Tineola bisselliella

Tortricidae

Epiphyas asthenopis; postvittana

Epitymbia cosmota
Crocidosema plebejana
Strepsicrates ejectana

Uraniidae

Lobogethes interrupta

Yponomeutidae

Prays autocasis
Yponomeuta internellus
Zelleria aphrospora; *cynetica*; *euthysema*;
hemixypha?; *panceuthes*; *perimeces*;
pyroleuca

Zygaenidae

Hestiochora furcata
Pollanisus apicalis; *lithopastus*;
viridipulverulenta

ORDER MANTODEA (MANTIDS)

Mantidae

Tenodera australasiae

ORDER MECOPTERA (SCORPIONFLIES)

Bittacidae

Harpobittacus australis

Choristidae

Chorista australis

ORDER MEGALOPTERA (DOBSONFLIES)

Corydalidae

Archichauliodes deceptor

ORDER NEUROPTERA (LACEWINGS)

Coniopterygidae

Coniopteryx (Xeroconiopteryx) tillyardi
Neosemidalis (Neosemidalis) longiscapa [T]

Hemerobiidae

Micromus tasmaniae

Mantispidae

Campion tenuistrigus

Myrmeleontidae

Glenoleon sp.

ORDER ODONATA (DRAGONFLIES)

Aeshnidae

Adversaeshna brevistyla

Austropetaliidae

Austropetalia patricia

Corduliidae

Hemicordulia tau

Gomphidae

Austrogomphus guerini

Lestidae

Austrolestes analis; *annulosus*; *leda*

Libellulidae

Nannophya dalei
Orthetrum caledonicum
Pantala flavescens

Megapodagrionidae

Austroargiolestes icteromelas

Synthemistidae

Parasynthemis regina
Synthemis eustalacta

Telephlebiidae

Austroaeschna parvistigma; *unicornis*

**ORDER ORTHOPTERA (CRICKETS,
GRASSHOPPERS)**

Acrididae

Acrida conica
Aiolopus thalassinus
Austracris guttulosa
Austroicetes cruciata; *frater*; *pusilla*; *vulgaris*
Bermius brachycerus
Brachyexarna lobipennis
Caledia captiva
Chortoicetes terminifera
Cirphula pyrrhocnemis
Coryphistes ruricola
Cryptobothrus chrysophorus
Exarna includens
Gastrimargus musicus
Goniaea australasiae; *carinata*; *opomaloides*
Heteropternis obscurella
Macrotona australis; *modesta*
Minyacris nana
Oedaleus australis
Pardillana limbata
Peakesia brunnes; *hospita*
Perunga ochracea
Phaulacridium vittatum
Praxibulus duplex
Pycnostictus seriatus
Schizobothrus flavovittatus

Gryllotalpidae

Gryllotalpa sp.

Pyrgomorphidae

Atractomorpha australis

Tettigoniidae

Caedicia simplex
Conocephalomima barameda
Lanciana montana
Nanodectes harpax
Terpandrus jumbunna
Zaprochilus australis

ORDER PHASMIDA (PHASMIDS)**Phsmatidae**

Podacanthus typhon
Tropidoderus childrenii

ORDER PLECOPTERA (STONEFLIES)**Gripopterygidae**

Dinotoperla serricauda
Illiesoperla australis
Riekoperla karki

Notonemouridae

Austrocerca tasmanica

ORDER PSOCODEA (LICE, BOOKLICE, BARKLICE)**Elipsocidae**

Protopocus pulchripennis

Peripsocidae

Protopocus pulchripennis

Psocidae

Blaste taylori
Ptycta glossoptera; umbrata

ORDER THYSANOPTERA (THRIPS)**Aeolothripidae**

Andrewarthaia kellyana
Desmothrips obsoletus; uniguttus
Franklinothrips vespiformis
Lamprothrips miltoni

Phlaeothripidae

Allothrips greensladei; hamideae [T]; *stannardi*
Apterygothrips australis
Baenothrips caenosus; moundi
Bocathrips okazimai [T]
Callococcithrips fuscipennis
Carientothrips acti; casuarinae; loisthus; miskoi;
mjobergi; reedi [T]
Cartomothrips nevoissi
Cryptothrips amneius
Deplorothrips capitalis [T]; *minaei* [T]
Emprosthiothrips niger
Giraultithrips nigricoxa
Haplothrips anceps; bituberculatus; froggatti;
victoriensis
Holothrips australis [T]; *eurytis*
Hoplandrothrips hemiflavus [T]; *quadriconus*
Idolothrips spectrum
Jacotia glyptus [T]
Lissothrips talagandai
Minaeithrips alicae [T]
Nesothrips carveri; propinquus
Pelinothrips ornatus
Phaulothrips anici; oakeyi

Podothrips websteri [T]
Priesneria peronis [T]
Psalidothrips taylori [T]
Rhopalothripoides froggatti
Stephanothrips barretti
Strepterothrips barbatus [T]; *tuberculatus*
Zemiathrips triseti [T]

Thripidae

Anaphothrips ambiguus; chortinus [T];
cucurbiti; exocarpi; exocarpoides [T];
obscurus; parsonsiae [T]; *sudanensis;*
westringiae [T]
Aptinothrips rufus
Australothrips bicolor
Bhattithrips frontalis
Caprithrips moundi
Chirothrips frontalis; manicatus
Frankliniella schultzei
Heliothrips haemorrhoidalis
Limothrips cerealium
Lomatothrips pinopsidis [T]
Neohydatothrips argenticinctus
Odontothripiella australis
Pezothrips kellyanus
Pseudanaphothrips achaetus; aureolus;
casuarinae
Scirtothrips australiae
Tenothrips frici
Thrips australis; imaginis; nigropilosus;
simplex; tabaci

Non-insect invertebrates recorded from Black Mountain: Class Arachnida (spiders, scorpions), Class Diplopoda (millipedes) and Phylum Onychophora (velvet worms)

CLASS ARACHNIDA

ORDER ARANEAE (SPIDERS)

Actinopodidae

Missulena occatoria

Araneidae

Argiope protensa

Arachnura higginsii

Austracantha minax

Celaenia excavata

Eriophora pustulosa; transmarina

Phonognatha graeffei

Clubionidae

Clubiona sp.

Corinnidae

Nyssus albopunctatus; coloripes

Desidae

Badumna insignis

Hersiliidae

Tamopsis sp.

Lamponidae

Lampona cylindrata

Linyphiidae

Erigone sp.

Lycosidae

Artoria quadrata

Tasmanicosa godeffroyi; leuckartii

Nemesiidae

Stanwellia sp.

Nephilidae

Nephila edulis

Oxyopidae

Oxyopes rubicundus

Pholcidae

Pholcus phalangioides

Salticidae

Apricia jovialis

Holoplatys mascordi

Jotus auripes

Maratus calcitrans [T]; *vespertilio*

Neon australis

Ocrisiona leucomis

Sandalodes scopifer

Saratus hesperus

Servaea incana

Sparassidae

Delena cancerides

Holconia immanis

Isopeda sp.

Neosparassus calligaster; diana

Typostola barbata

Theridiidae

Latrodectus hasselti

Thomisidae

Sidymella sp.

Stephanopsis cambridgei

Zodariidae

Habronestes huntii

ORDER SCORPIONES (SCORPIONS)

Buthidae

Lychas marmoreus; variatus

Urodacidae

Urodacus manicatus

CLASS DIPLOPODA (MILLIPEDES)

ORDER POLYDESMIDA (FLAT-BACKED MILLIPEDES)

Paradoxosomatidae

Akamptogonus novarae

Dicladomella sp.

PHYLUM ONYCHOPHORA (VELVET WORMS)

Peripatopsidae

Euperipatoides rowelli