

**Upper Lockyer Valley
Invertebrate Fauna Survey
November 2014 – April 2015**



**Rod Hobson
April 2015**

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Cover: Mountain Katydid *Acripeza reticulata*. This insect is quite common in the open woodlands of the Lockyer Valley especially those that retain a good ground cover of leaf litter and native grasses. The female of this insect is flightless (Photo: Bruce Thomson)

Acknowledgements

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UPPER LOCKYER VALLEY INVERTEBRATE FAUNA SURVEY

November 2014 – April 2015

1: Introduction

The Citizens of the Lockyer Association (COL) commenced a programme in October 2011 to document the fauna of the Upper Lockyer Valley centred on the catchments of Stockyard and Flagstone Creeks (see map Appendix 1). Initially the target species were vertebrate fauna only but as this became better known for the survey area it was decided to extend the survey effort to include invertebrate fauna as well. This report covers a recent invertebrate survey conducted from November 2014 until April 2015 instigated by the COL under a grant from the Lockyer Valley Regional Council (LVRC). Given the immensity of invertebrates both described and undescribed within the Australian landscape any such work can only give a very brief overview of the invertebrate fauna of any particular area. In the survey under discussion four invertebrate orders were singled out for attention. They were the Coleoptera in particular the Scarabaeidae (dung beetles), the Lepidoptera (moths and butterflies), the Hymenoptera in particular the Formicidae (ants) and the Odonata (dragonflies and damselflies). Incidental records of other invertebrate orders were taken opportunistically, as well. As a result the total of invertebrate species recorded within the survey area now stands at 597 species. The total number of species recorded in the survey area since survey work commenced including both vertebrate and invertebrate fauna is 901 species at the time of writing (April 2015).

The survey under discussion consisted of both structured survey work as well as incidental fauna recording. Four structured surveys were carried out utilising the expertise of persons in the following fields:

- Dr. Chris Burwell: ants
- Dr. Geoff Monteith: dung beetles
- Rod Hobson: dragonflies and damselflies
- Wesley Jenkinson: moths and butterflies

All of the above persons also contributed incidental records of other invertebrates from other orders as they were encountered. The incidental fauna records were also greatly enhanced by local landowners and members of the public who forwarded records, photographs and specimens over the period of the survey. These persons are acknowledged at the beginning of this document.

2: Methodology

Dr. Chris Burwell and Dr. Geoff Monteith carried out field work on the ants and dung beetles of the Rockmount, Stockyard and Hell Hole areas of the Upper Lockyer from the 6 – 8 March 2015. Invertebrate traps were installed at nine sites by Dr. Monteith particularly targeting dung beetles but these traps were also used by Dr. Burwell for his work as they also took considerable numbers of ants as by-catch. At each site several pairs of traps were set in the

ground to their rims and baited with fresh macropod or cow dung and fermenting mushrooms to attract dung beetles. The individual trap consisted of a disposable drinking cup filled partially with water to which detergent is added (Plate 7, image 1). The bait is suspended above the drinking cup and beetles attracted to the bait fall into the cup and quickly drown; the detergent breaking the surface tension of the water thus preventing the victim from swimming to safety. Ants merely blunder into the trap and fall victim to the device. At the end of the survey the trap victims are strained from the water, preserved in alcohol and returned to the laboratory for sorting and identification.

Dragonflies were hand-netted at various occasions over the entire period although several of the more common and readily identifiable species were recorded by sight only. This was carried out, in the main, by Rod Hobson but also to a lesser extent by Dr. Burwell over his stay in the area. Most of the Odonata collected were released although some were held as voucher specimens for the Queensland Museum. Moths were identified in the majority from specimens taken from a light trap set by Wesley Jenkinson over three nights on 14 February and the 7 – 8 March 2015. The moths were preserved *in situ* and later identified after drying and pinning of the specimens. Wesley Jenkinson also carried out butterfly surveys on the same dates as those for the moth surveys. Some of the species were identified by sight only but the majority were hand-netted and subsequently treated in the same manner as were the moth specimens.

Incidental fauna surveying methods carried out by Rod Hobson consisted of active searching of various microhabitats. Methods employed included the sweeping of vegetation with a hand-net, turning of logs, rocks etc., and sifting of leaf-litter. Specimens and photographs were also forwarded to Rod Hobson for identification and inclusion in the survey results by interested members of the public living in or visiting the survey area. In some cases outside expertise was enlisted to help with identifications.

3: Site Locations

The following site locations were provided by the respective surveyors and have been converted to degrees and decimals of a degree where warranted for consistency.

3.1: Dung Beetle and Ant Surveys

Site 1. Sawpit Gully Road, Rockmount at WGS84 - S27.692 x E152.057

Site 2. Darvall property, Priors Rd. at WGS84 - S27.695 x E152.026

Site 3. Scanlans Rd (top site) at WGS84 - S27.654 x E152.030

Site 4. Scanlans Rd (lower site) at WGS84 - S27.655 x E152.036

Site 5. Scanlans Rd (middle site) at WGS84 - S27.656 x E152.032

Site 6. Dwyers Scrub Conservation Park at WGS84 - S27.702 x E152.094

Site 7. Dwyers Scrub Conservation Park at WGS84 - S27.698 x E152.086

Site 8. Stephens property at WGS84 - S27.681 x E152.039

Site 9. Stephens property at WGS84 - S27.681 x E152.040

n.b. Site 1 refers to the Walton property

Sites 3, 4 and 5 refer to the property "Ridge Prospect"

Sites 8 and 9 refer to the property "Split Rock Mountain"

Sites 6 and 7 now known as Dwyers Scrub Regional Park (April 2015).

3.2: Butterfly Surveys

14.02.15:

- "Split Rock Mountain", Rockmount at GDA94 – S27.88144 x E152.03880; +/-100 metres
- P. & E. Darvall, "Under Milkweed", East Egypt Rd., Mt. Whitestone at GDA94-S27.68857 x E152.075016; +/- 400 metres
- P. & E. Darvall, (Palm Creek), East Egypt Rd., Mt. Whitestone at GDA94-S27.67788 x E152.08890; +/- 50 metres

07.03.15:

- Gormans Gap Historical Track, Gormans Gap at GDA94 – S27.640276 x E152.984444; +/- 100metres
- Gormans Gap Historical Track, Gormans Gap at GDA94 – S27.635556 x E152.986667; +/- 100metres
- Gormans Gap Historical Track, Camels Hump cairn, Gormans Gap at GDA94 – S27.633056 x E152.988056; +/- 50metres
- "Split Rock Mountain", Rockmount at GDA94 – S27.682222 x E152.040278; +/-100 metres

08.03.15:

- Sawpit Gully Rd., (Walton property), Rockmount at GDA94 – S27.69222 x E152.056667; +/- 100 metres
- Sawpit Gully Rd., Rockmount at GDA94 – S27.688056 x E152.051111; +/- 50 metres
- Darvall property, Priors Rd., Rockmount at GDA94 – S27.69444 x E152.026389; +/- 150 metres

3.3: Moth Surveys

14.02.15:

- P. & E. Darvall, "Under Milkweed", East Egypt Rd., Mt. Whitestone at GDA94-S27.678611 x E152.086667; +/- 50 metres

07.03.15:

- Darvall property, Priors Rd., Rockmount at GDA94 – S27.69444 x E152.026389; +/- 150 metres

08.03.15:

- Sawpit Gully Rd., (Walton property), Rockmount at GDA94 – S27.69222 x E152.056667; +/- 50 metres

3.4: Odonata surveys were carried out at various sites wherever surface water and suitable conditions were encountered. Site coordinates are enunciated in the incidental fauna results below.

4: Results

The results of the invertebrate fauna surveys are as follow:

4.1: Dung Beetle — Scarabaeidae Survey

Conducted by Dr. Geoff Monteith, Queensland Museum (ret.). Numbers in boldface below represent the Sampcode i.e. the code for the catch from each site under which the data are registered in the Queensland Museum database. Each number represents the trap bait used, as well. All species are native insects unless otherwise noted. Abridged from report to author from G. Monteith.

06–08.03.15:

Site 1. Sawpit Gully Road at S27.692 x E152.057. Good quality rainforest on sandy soil in deep gully. Eight pairs of traps, dung **37994**, mushroom **37995**.

8 x *Amphistomus storeyi*
8 x *Demarziella metallica*
2 x *Onthophagus capella*
48 x *Onthophagus* CQ2
1 x *Onthophagus dandalu*
4 x *Onthophagus leanus*
18 x *Onthophagus neostenocerus*
42 x *Onthophagus rubicundulus*

Site 2. Darvall property, Priors Road at S27.695 x E152.026. Open eucalypt forest with patches of lantana and other shrubs on black soil. Four pairs of traps, dung **37996**, mushroom **37997**.

2 x *Boletoscapter furcatus*
1 x *Demarziella interrupta*
1 x *Onthophagus atrox*
3 x *Onthophagus dunningi*
18 x *Onthophagus incornutus*
2 x *Onthophagus rubicundulus*

10 x *Onthophagus thoreyi*
1 x *Onitis alexis* (introduced species)

Site 3. Scanlans Road (top site) at S27.654 x E152.030. Open eucalypt forest with grassy ground cover. Gravelly, black soil. Three pairs of traps, dung **37998**, mushroom **37999**.

1 x *Boletoscapter furcatus*
1 x *Demarziella interrupta*
3 x *Onthophagus dunningi*
15 x *Onthophagus thoreyi*

Site 4. Scanlans Road (lower site) at S27.655 x E152.036. Disturbed brigalow with shrub understory. Black soil. Four pairs of traps, dung **38000**, mushroom **38001**.

8 x *Onthophagus rubicundulus*
6 x *Onthophagus thoreyi*

Site 5. Scanlans Road (middle site) at S27.656 x E152.032. Vine scrub with red soil. Four pairs of traps, dung **38002**, mushroom **38003**.

6 x *Onthophagus* CQ2
40 x *Onthophagus rubicundulus*

Site 6. Dwyers Scrub Conservation Park at S27.702 x E152.094. Rainforest with severe infestation of Madeira vine. Friable red soil. Four pairs of traps, dung **38004**, mushroom **38005**.

23 x *Amphistomus calcaratus*
1 x *Cephalodesmius quadridens*
1 x *Onthophagus capella*
5 x *Onthophagus incornutus*
136 x *Onthophagus rubicundulus*
10 x *Onthophagus sydneyensis*

Site 7. Dwyers Scrub Conservation Park at S27.698 x E152.086. Eucalypt forest with lantana understory. Black soil. One pairs of traps, dung **38006**, mushroom **38007**.

2 x *Onthophagus rubicundulus*

Site 8. Stephens property at S27.681 x E152.039. Low vine scrub on sandy soil. Two pairs of traps, dung **38008**, mushroom **38009**.

1 x *Demarziella interrupta*
6 x *Onthophagus incornutus*
1 x *Onthophagus rubicundulus*

Site 9. Stephens property at S27.681 x E152.040. Cleared grassy plateau with black soil. Two pairs of traps, dung **38010**, mushroom **38011**.

1 x *Liatongus militaris* (introduced species)

- n.b. Site 1 refers to the Walton property
Sites 3, 4 and 5 refer to the property “Ridge Prospect”
Sites 8 and 9 refer to the property “Split Rock Mountain”
Sites 6 and 7 now known as Dwyers Scrub Regional Park (April 2015)

4.2: Ant — Formicidae Survey

Conducted by Dr. Chris Burwell, Queensland Museum. Adapted from spreadsheet to author from C. Burwell.

n.b. ant survey sites corresponded with those set up by Dr. Monteith for the dung beetle survey (see above). No ants were taken at Site 7 so it is excluded from the summary below.

06–08.03.15:

Site 1. Sawpit Gully Road at S27.692 x E152.057. Good quality rainforest on sandy soil in deep gully.

Cerapachys edentatus (Cerapachyinae)
Anonychomyrma QM3 (Dolichoderinae)
Leptomyrmex tibialis (Dolichoderinae)
Tapinoma sp. A (Dolichoderinae)
Rhytidoponera chalybaea (Ectatomminae)
Rhytidoponera victoriae (Ectatomminae)
Camponotus sp. B (Formicinae)
Myrmecorhynchus QM1 (Formicinae)
Notoncus capitatus (Formicinae)
Nylanderia sp. A (Formicinae)
Paraparatrechnia sp. D (Formicinae)
Polyrachis (*Campomyrma*) sp. A (Formicinae)
Polyrachis (*Campomyrma*) *clio* (Formicinae)
Polyrachis (*Campomyrma*) *machaon* (Formicinae)
Prolasius QM1 (Formicinae)
Prolasius QM4 (Formicinae)
Crematogaster sp. B (Myrmicinae)
Crematogaster sp. C (Myrmicinae)
Crematogaster sp. D (Myrmicinae)
Monomorium sp. D (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. D (Myrmicinae)
Pheidole sp. F (Myrmicinae)
Pheidole sp. G (Myrmicinae)
Podomyrma sp. A (Myrmicinae)
Rhopalomastrix rothneyi (Myrmicinae)
Solenopsis spp. (Myrmicinae)
Hypoponera sp. A (Ponerinae)
Leptogenys mjoebergi (Ponerinae)
Leptogenys sjostedti (Ponerinae)
Platythyrea parallela (Ponerinae)
Pseudoneoponera sp. A (Ponerinae)



Plate 1. Wesley Jenkinson (with net) and Robert Ashdown during butterfly survey, Gormans Gap Historical Track, 8 March 2015. Photo R. Ashdown.



Plate 2. A pair of Cycad Blue butterflies *Theclinessthes onycha* on old Xanthorrhoea spike, Gormans Gap Historical Track, 8 March, 2015. Photo R. Ashdown.

Site 2. Darvall property, Priors Road at S27.695 x E152.026. Open eucalypt forest with patches of lantana and other shrubs on black soil.

Iridomyrmex sp. A (Dolichoderinae)
Rhytidoponera metallica (Ectatomminae)
Rhytidoponera sp. A (Ectatomminae)
Camponotus aeneopilosus (Formicinae)
Camponotus consorbrinus (Formicinae)
Camponotus eastwoodi (Formicinae)
Camponotus sp.A (Formicinae)
Notoncus capitatus (Formicinae)
Nylanderia sp. A (Formicinae)
Polyrachis (*Campomyrma*) sp. B (Formicinae)
Polyrachis (*Campomyrma*) *ammon* (Formicinae)
Crematogaster sp. A (Myrmicinae)
Crematogaster sp. E (Myrmicinae)
Monomorium sp. E (Formicinae)
Pheidole sp. H (Myrmicinae)
Pheidole sp. J (Myrmicinae)

Site 3. Scanlans Road (top site) at S27.654 x E152.030. Open eucalypt forest with grassy ground cover.

?*Doleromyrma* sp. A (Dolichoderinae)
Iridomyrmex purpureus (Dolichoderinae)
Iridomyrmex sp. A (Dolichoderinae)
Leptomyrmex rufipes (Dolichoderinae)
Papyrsiius sp. A (Dolichoderinae)
Tapinoma sp. B (Dolichoderinae)
Rhytidoponera chalybaea (Ectatomminae)
Rhytidoponera metallica (Ectatomminae)
Rhytidoponera sp. A (Ectatomminae)
Calomyrmex sp. A (Formicinae)
Camponotus aeneopilosus (Formicinae)
Camponotus sp. C (Formicinae)
Camponotus sp. E (Formicinae)
Melophorus sp. A (Formicinae)
Notoncus capitatus (Formicinae)
Nylanderia sp. B (Formicinae)
Cardiocondyla sp. A (Myrmicinae)
Crematogaster sp. A (Myrmicinae)
Meranoplus sp. A (Myrmicinae)
Monomorium sp. A (Myrmicinae)
Monomorium sp. C (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. B (Myrmicinae)
Pheidole sp. C (Myrmicinae)
Pheidole sp. E (Myrmicinae)
Pheidole sp. K (Myrmicinae)

Site 4. Scanlans Road (lower site) at S27.655 x E152.036. Disturbed brigalow with shrub understory. Black soil

?*Doleromyrma* sp. A (Dolichoderinae)
Iridomyrmex sp. B (Dolichoderinae)
Iridomyrmex sp. C (Dolichoderinae)
Rhytidoponera chalybaea (Ectatomminae)
Rhytidoponera metallica (Ectatomminae)
Rhytidoponera victoriae (Ectatomminae)
Calomyrmex sp. A (Formicinae)
Nylanderia sp. A (Formicinae)
Polyrachis (Campomyrma) phryne (Formicinae)
Polyrachis (Campomyrma) daemeli (Formicinae)
Stigmacros sp. C (Formicinae)
Calyptomyrmex beccarii (Myrmicinae)
Crematogaster sp. B (Myrmicinae)
Monomorium sp. A (Myrmicinae)
Monomorium sp. C (Myrmicinae)
Orectognathus mjoebergi (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. E (Myrmicinae)
Pheidole sp. F (Myrmicinae)
Pheidole sp. G (Myrmicinae)
Solenopsis spp. (Myrmicinae)
Anochetus graeffei (Ponerinae)

Site 5. Scanlans Road (middle site) at S27.656 x E152.032. Vine scrub with red soil.

Anonychomyrma QM3 (Dolichoderinae)
Leptomyrmex tibialis (Dolichoderinae)
Tapinoma sp. B (Dolichoderinae)
Technomyrmex sophiae (Dolichoderinae)
Rhytidoponera metallica (Ectatomminae)
Rhytidoponera victoriae (Ectatomminae)
Notoncus capitatus (Formicinae)
Paraparatrechnia sp. C (Formicinae)
Paraparatrechnia sp. D (Formicinae)
Prolasius QM5 (Formicinae)
Prolasius QM9 (Formicinae)
Stigmacros sp. A (Formicinae)
Stigmacros sp. B (Formicinae)
Heteroponera sp. A (Heteroponerinae)
Crematogaster sp. B (Myrmicinae)
Eurhopalothrix australis (Myrmicinae)
Mayriella abstinens (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. F (Myrmicinae)
Pheidole sp. G (Myrmicinae)
Pheidole sp. J (Myrmicinae)
Solenopsis spp. (Myrmicinae)

Site 6. Dwyers Scrub Conservation Park at S27.702 x E152.094. Rainforest with severe infestation of Madeira vine. Friable red soil.

Anonychomyrma QM3 (Dolichoderinae)
Iridomyrmex purpureus (Dolichoderinae)
Leptomyrmex tibialis (Dolichoderinae)
Rhytidoponera victoriae (Ectatomminae)
Camponotus sp. F (Formicinae)
Notoncus capitatus (Formicinae)
Polyrachis (Campomyrma) rufifemur (Formicinae)
Prolasius QM4 (Formicinae)
Prolasius QM9 (Formicinae)
Stigmatoceros sp. A (Formicinae)
Crematogaster sp. B (Myrmicinae)
Mayriella spinosior (Myrmicinae)
Monomorium sp. B (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. F (Myrmicinae)
Pheidole sp. 1 (Myrmicinae)
Solenopsis spp. (Myrmicinae)
Leptogenys sjostedti (Ponerinae)
Pseudoneoponera sp. B (Ponerinae)

Site 8. Stephens property at S27.681 x E152.039. Low vine scrub on sandy soil.

Notoncus capitatus (Formicinae)
Nylanderia sp. A (Formicinae)
Paraparatrechnia sp. C (Formicinae)
Cardiocondyla sp. A (Myrmicinae)
Pheidole sp. A (Myrmicinae)
Pheidole sp. B (Myrmicinae)
Pheidole sp. E (Myrmicinae)
Pheidole sp. F (Myrmicinae)
Pheidole sp. G (Myrmicinae)
Pheidole sp. 1 (Myrmicinae)

Site 9. Stephens property at S27.681 x E152.040. Cleared grassy plateau with black soil.

1 x ?*Doleromyrma* sp. A (Dolichoderinae)
Iridomyrmex sp. A (Dolichoderinae)
Iridomyrmex sp. B (Dolichoderinae)
Camponotus intrepidus (Formicinae)
Camponotus sp. A (Formicinae)
Camponotus sp. C (Formicinae)
Camponotus sp. D (Formicinae)
Camponotus sp. E (Formicinae)
Melophorus sp. B (Formicinae)
Cardiocondyla sp. A (Myrmicinae)
Monomorium sp. A (Myrmicinae)
Pheidole sp. A (Myrmicinae)

Pheidole sp. B (Myrmicinae)
Pheidole sp. E (Myrmicinae)
Pheidole sp. G (Myrmicinae)
Pheidole sp. 1 (Myrmicinae)

n.b. Site 1 refers to the Walton property
Sites 3, 4 and 5 refer to the property “Ridge Prospect”
Sites 8 and 9 refer to the property “Split Rock Mountain”
Sites 6 and 7 now known as Dwyers Scrub Regional Park (April 2015)

4.3: Butterfly & Moth — Lepidoptera Survey

Conducted by Wesley Jenkinson, Beaudesert.

4.3.1: Butterflies:

14.02.15:

“Split Rock Mountain”, Rockmount at GDA94 — S27.88144 x E152.03880; +/- 100 metres

2 x Dingy Grass-skipper *Toxidia peron*
2 x Greenish Grass-dart *Ocybadistes walker sothis*
1 x Fuscous Swallowtail *Papilio fuscus capaneus*
1 x Orchard Swallowtail *Papilio a. aegeus*
6 x White Migrant *Catopsilia pyranthe crokera*
1 x Large Grass-yellow *Eurema h. hecabe*
3 x Yellow-spotted Jezebel *Delias n. nysa*
2 x Scarlet Jezebel *Delias a. argenthona*
4 x Striated Pearl-white *Elodina parthia*
1 x Caper White *Belenois java*
2 x Caper Gull *Ceropa perimale*
1 x Yellow Albatross *Appias paulina ega*
6 x Glasswing *Acraea a. andromacha*
1x Varied Eggfly *Hypolimnna bolina nerina*
4 x Meadow Argus *Junonia villida calybe*
1 x Yellow Admiral *Vanessa itea*
200 x Blue Tiger *Tirumala h. hamata*
1 x Common Crow *Euploea core corinna*
6 x Lesser Wanderer *Danaus chrysippus*
3 x Monarch *Danaus p. plexippus*
15 x Satin Azure *Ogyris amaryllis*
1 x Southern Purple Azure *Ogyris genoveva*
3 x Bright Cornelian *Deudorix diovis*
3 x Trident Pencil-blue *Candalides margarita*
1 x Dark Pencil-blue *Candalides c. consimilis*
6 x Marbled Line-blue *Erysichton palmyra tasmanicus*
10 x Short-tailed Line-blue *Prosotas felderi*
3 x Speckled Line-blue *Catopyrops florinda halys*
1 x Wattle Blue *Theclinesthes m. miskini*

1 x Pale Pea-blue *Catochrysops panormis platissa*
1 x Plumbago Blue *Leptotes plinius pseudocassius*
1 x Common Grass-blue *Zizina l. labradus*
1 x Dainty Grass-blue *Zizula hylax attenuata*
1 x Bronze Flat *Netrocoryne r. repanda*
1 x Orange Ochre *Trapezites eliena*

P. & E. Darvall, "Under Milkweed", East Egypt Rd., Mt. Whitestone at GDA94 — S27.68857 x E152.075016; +/- 400 metres:

3 x Dingy Grass-skipper *Toxidia peron*
2 x Greenish Grass-dart *Ocybadistes walker sothis*
1 x Fuscous Swallowtail *Papilio fuscus capaneus*
2 x Orchard Swallowtail *Papilio a. aegeus*
1 x Dainty Swallowtail *Papilio anactus*
1 x Lemon Migrant *Catopsilia pomona*
3 x White Migrant *Catopsilia pyranthe crokera*
10 x No-brand Grass Yellow *Eurema brigitta australis*
2 x Small Grass-yellow *Eurema s. smilax*
2 x Caper Gull *Ceropa perimale*
1 x Yellow Albatross *Appias paulina ega*
3 x Yellow-spotted Jezebel *Delias n. nysa*
2 x Scarlet Jezebel *Delias a. argenthona*
1 x Southern Pearl-white *Elodina angulipennis*
1 x Grey Ringlet *Hypocysta pseudirius*
1 x Tailed Emperor *Polyura s. sempronius*
3 x Glasswing *Acraea a. andromacha*
1x Varied Eggfly *Hypolimnas bolina nerina*
50 x Blue Tiger *Tirumala h. hamata*
1 x Common Crow *Euploea core corinna*
2 x Lesser Wanderer *Danaus chrysippus*
1 x Monarch *Danaus p. plexippus*
10 x Chequered Copper *Lucia limbaria*
2 x Trident Pencil-blue *Candalides margarita*
1 x Dark Pencil-blue *Candalides c. consimilis*
1 x Speckled Line-blue *Catopyrops florinda halys*
1 x Purple Cerulean *Jamides phaseli*
1 x Common Grass-blue *Zizina l. labradus*

P & E. Darvall (Palm Creek), Mt. Whitestone at GDA94 — S27.67788 x E152.08890; +/- 50 metres:

1 x Splendid Ochre *Trapezites s. symmopus*
1 x Chequered Swallowtail *Papilio demoleus sthenelus*

07.03.15:

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.640276 x E152.984444;
+/- 100 metres:

- 1 x Splendid Ochre *Trapezites s. symmopus*
- 3 x Greenish Grass-dart *Ocybadistes walker sothis*
- 1 x Bright Cornelian *Deudorix diovis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.635556 x E152.986667;
+/- 100 metres:

- 1 x Wide-brand Sedge-skipper *Hesperilla crypsigramma*
- 1 x White Migrant *Catopsilia pyranthe crokera*
- 1 x Lemon Migrant *Catopsilia pomona*
- 6 x No-brand Grass Yellow *Eurema brigitta australis*
- 2 x Grey Ringlet *Hypocysta pseudirius*
- 2 x Varied Eggfly *Hypolimnas bolina nerina*
- 4 x Meadow Argus *Junonia villida calybe*
- 1 x Common Crow *Euploea core corinna*
- 2 x Monarch *Danaus p. plexippus*
- 6 x Blue Tiger *Tirumala h. hamata*
- 1 x Speckled Line-blue *Catopyrops florinda halys*
- 20 x Short-tailed Line-blue *Prosotas felderi*
- 1 x Common Grass-blue *Zizina l. labradus*

Gormans Gap Historical Track, Camels Hump cairn, Gormans Gap at GDA94 —
S27.633056 x E152.988056; +/- 50 metres:

- 1 x Black-ringed Ochre *Trapezites petalia*
- 1 x Orange Ochre *Trapezites eliena*
- 3 x Barred Skipper *Dispar compacta*
- 2 x Dingy Grass-skipper *Toxidia peron*
- 1 x Blue Triangle *Graphium s. sarpedon*
- 1 x Orchard Swallowtail *Papilio a. aegeus*
- 1 x Dainty Swallowtail *Papilio anactus*
- 1 x Chequered Swallowtail *Papilio demoleus sthenelus*
- 2 x Caper Gull *Ceropa perimale*
- 2 x Yellow Albatross *Appias paulina ega*
- 1 x Yellow-spotted Jezebel *Delias n. nysa*
- 1 x Scarlet Jezebel *Delias a. argenthona*
- 1 x Orange Ringlet *Hypocysta adiante*
- 1 x Tailed Emperor *Polyura s. sempronius*
- 3 x Glasswing *Acraea a. andromacha*
- 1 x Trident Pencil-blue *Candalides margarita*
- 6 x Broad-margined Azure *Ogyris olane*
- 1 x Northern Purple Azure *Ogyris z. zosine*
- 2 x Cycad Blue *Theclinesstes onycha*
- 6 x Wattle Blue *Theclinesstes m. miskini*
- 2 x Saltbush Blue *Theclinesstes s. serpentata*



Plate 3. Wesley Jenkinson and Rod Hobson collecting moths at light trap, Palm Creek, Mount Whitestone, 14 February, 2015. Photo R. Ashdown.

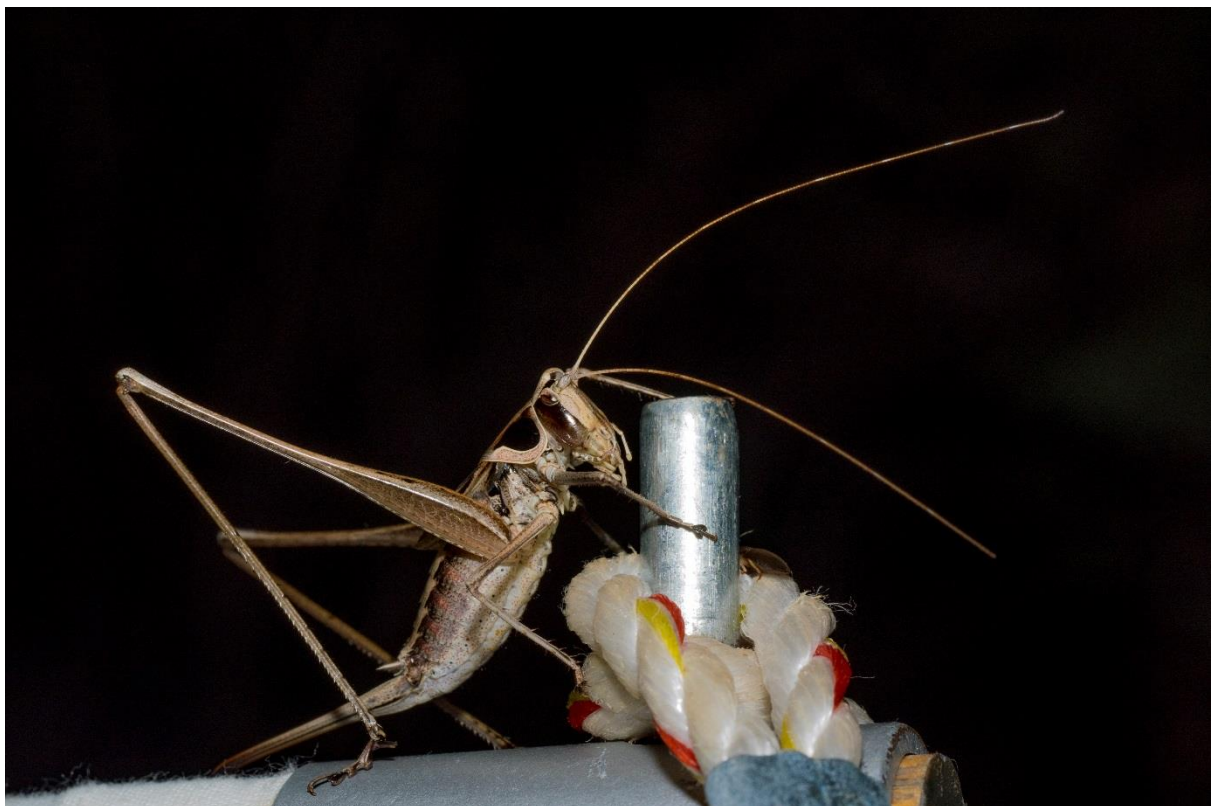


Plate 4. Semon's Grass Shield-back *Rhachidorus semoni*, Palm Creek, Mount Whitestone, 14 February, 2015. Photo R. Ashdown.

“Split Rock Mountain”, Rockmount at GDA94 — S27.682222 x E152.040278; +/- 100 metres:

3 x Caper Gull *Ceropa perimale*
4 x Yellow-spotted Jezebel *Delias n. nysa*
2 x Scarlet Jezebel *Delias a. argenthona*
1 x Spotted Jezebel *Delias aganippe*
4 x Striated Pearl-white *Elodina parthia*
6 x Southern Pearl-white *Elodina angulipennis*
3 x Glasswing *Acraea a. andromacha*
1 x Varied Eggfly *Hypolimnias bolina nerina*
1 x White-banded Plane *Phaedyra s. shepherdii*
1 x Meadow Argus *Junonia villida calybe*
1 x Yellow Admiral *Vanessa itea*
1 x Australian Painted Lady *Vanessa kershawi*
10 x Blue Tiger *Tirumala h. hamata*
2 x Common Crow *Euploea core corinna*
1 x Lesser Wanderer *Danaus chrysippus*
3 x Monarch *Danaus p. plexippus*
10 x Satin Azure *Ogyris amaryllis*
10 x Northern Purple Azure *Ogyris z. zosine*
4 x Broad-margined Azure *Ogyris olane*
1 x Trident Pencil-blue *Candalides margarita*
3 x Marbled Line-blue *Erysichton palmyra tasmanicus*
12 x Short-tailed Line-blue *Prosotas felderi*
3 x Wattle Blue *Theclinesthes m. miskini*
2 x Common Grass-blue *Zizina l. labradus*

08.03.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.692222 x E152.056667; +/- 100 metres;

2 x Greenish Grass-dart *Ocybadistes walker sothis*
1 x Wide-brand Grass-dart *Suniana sunias reactivita*
1 x Orchard Swallowtail *Papilio a. aegeus*
2 x Yellow Migrant *Catopsilia g. gorgophone*
1 x Small Grass-yellow *Eurema s. smilax*
1 x Large Grass-yellow *Eurema h. hecabe*
6 x Southern Pearl-white *Elodina angulipennis*
1 x Striated Pearl-white *Elodina parthia*
3 x Caper Gull *Ceropa perimale*
2 x Yellow Albatross *Appias paulina ega*
2 x Yellow-spotted Jezebel *Delias n. nysa*
1 x Evening Brown *Melanitis leda bankia*
2 x Brown Ringlet *Hypocysta metirius*
1 x Grey Ringlet *Hypocysta pseudirius*
2 x Varied Eggfly *Hypolimnias bolina nerina*
2 x Meadow Argus *Junonia villida calybe*
1 x Yellow Admiral *Vanessa itea*

2 x Blue Tiger *Tirumala h. hamata*
 1 x Common Crow *Euploea core corinna*
 1 x Bright Cornelian *Deudorix diovis*
 1 x Two-spotted Line-blue *Nacaduba b. biocellata*
 6 x Short-tailed Line-blue *Prosotas felderi*
 1 x Small Green-banded Blue *Psychonotis caelius taygetus*
 1 x Spotted Grass-blue *Zizeeria karsandra*
 1 x Common Grass-blue *Zizina l. labradus*

Sawpit Gully Road, Rockmount at GDA94 — S27.688056 x E152.051111; +/- 50 metres;

1 x No-brand Grass-dart *Taractrocera ina*
 1 x Pale Triangle *Graphium eurypylus lycaon*
 1 x Orchard Swallowtail *Papilio a. aegeus*
 1 x Chequered Swallowtail *Papilio demoleus sthenelus*
 2 x White Migrant *Catopsilia pyranthe crokera*
 1 x Yellow Migrant *Catopsilia g. gorgophone*
 1 x Small Grass-yellow *Eurema s. smilax*
 1 x Large Grass-yellow *Eurema h. hecabe*
 2 x Southern Pearl-white *Elodina angulipennis*
 3 x Caper Gull *Ceropa perimale*
 2 x Yellow Albatross *Appias paulina ega*
 1 x Varied Eggfly *Hypolimnas bolina nerina*
 1 x White-banded Plane *Phaedyma s. shepherdii*
 1 x Glasswing *Acraea a. andromacha*
 3 x Meadow Argus *Junonia villida calybe*
 1 x Blue Argus *Junonia orithya albicincta*
 1 x Australian Painted Lady *Vanessa kershawi*
 4 x Blue Tiger *Tirumala h. hamata*
 1 x Lesser Wanderer *Danaus chrysippus*
 2 x Monarch *Danaus p. plexippus*
 1 x Speckled Line-blue *Catopyrops florinda halys*
 3 x Short-tailed Line-blue *Prosotas felderi*
 3 x Common Grass-blue *Zizina l. labradus*

Darvall property, Priors Road, Rockmount at GDA94 — S27.69444 x E152.026389; +/- 150 metres:

2 x Black-ringed Ochre *Trapezites petalia*
 4 x Orange Ochre *Trapezites eliena*
 2 x Dingy Grass-skipper *Toxidia peron*
 1 x Wide-brand Sedge-skipper *Hesperilla crypsigramma*
 1 x Greenish Grass-dart *Ocybadistes walker sothis*
 2 x Orchard Swallowtail *Papilio a. aegeus*
 1 x Chequered Swallowtail *Papilio demoleus sthenelus*
 1 x White Migrant *Catopsilia pyranthe crokera*
 1 x Yellow Migrant *Catopsilia g. gorgophone*
 1 x No-brand Grass-yellow *Eurema brigitta australis*
 1 x Small Grass-yellow *Eurema s. smilax*
 1 x Large Grass-yellow *Eurema h. hecabe*

1 x Southern Pearl-white *Elodina angulipennis*
 3 x Striated Pearl-white *Elodina parthia*
 1 x Caper White *Belenois java*
 2 x Caper Gull *Ceropa perimale*
 1 x Yellow Albatross *Appias paulina ega*
 2 x Scarlet Jezebel *Delias a. argenthona*
 1 x Glasswing *Acraea a. andromacha*
 1x Varied Eggfly *Hypolimnna bolina nerina*
 12 x Meadow Argus *Junonia villida calybe*
 1 x Yellow Admiral *Vanessa itea*
 6 x Blue Tiger *Tirumala h. hamata*
 2 x Common Crow *Euploea core corinna*
 2 x Lesser Wanderer *Danaus chrysippus*
 2 x Monarch *Danaus p. plexippus*
 2 x Southern Purple Azure *Ogyris genoveva*
 1 x Northern Purple Azure *Ogyris z. zosine*
 1 x Imperial Hairstreak *Jalmenus e. evagoras*
 3 x Short-tailed Line-blue *Prosotas felderi*
 1 x Speckled Line-blue *Catopyrops florinda halys*
 2 x Wattle Blue *Theclinesthes m. miskini*
 1 x Long-tailed Pea-blue *Lampides boeticus*
 3 x Common Grass-blue *Zizina l. labradus*

Moths: 4.3.2

14.02.15:

P. & E. Darvall, "Under Milkweed", East Egypt Rd., Mt Whitestone at GDA94 — S27.678611 x E152.086667; +/- 50 metres:

1 x arctiid moth *Aloa marginata*
 6 x arctiid moth *Amata* sp. 1
 6 x arctiid moth *Amata* sp. 2
 1 x arctiid moth *Anestia semiochrea*
 1 x arctiid moth *Philenora aspectalella*
 1 x arctiid moth *Stenoscaptia venusta*
 1 x crambid moth *Agrotera amanthealis*
 1 x crambid moth *Cirrhochrista* sp.
 2 x crambid moth *Palpita horakae*
 1 x crambid moth *Parotis* sp.
 1 x crambid moth *Rhimphalea sceletalis*
 3 x crambid moth *Talanga toluennialis*
 1 x elachistid moth *Agriophara confertella*
 3 x elachistid moth *Aporoctena scierodes*
 1 x geometrid moth *Boarmia polysticta*
 2 x geometrid moth *Casbia rectaria*
 1 x geometrid moth *Cleora injectaria*
 1 x geometrid moth *Comostola laesaria*
 1 x geometrid moth *Dysbatus singularis*
 1 x geometrid moth *Epidesmia tryxaria*

1 x geometrid moth *Gonodontis luteola*
 3 x geometrid moth *Hypobapta barnardi*
 2 x geometrid moth *Hypomecis penthearia*
 1 x geometrid moth *Idaea inversata*
 1 x geometrid moth *Mixocera latilineata*
 1 x geometrid moth *Mnesiloba eupitheciata*
 1 x geometrid moth *Nearcha nr. ursaria*
 1 x geometrid moth *Neogyne elongata*
 1 x geometrid moth *Problepsis sancta*
 1 x geometrid moth *Rhinodia rostraria*
 1 x hepialid moth *Trictena argyrosticha*
 1 x lacturid moth *Eustixis erythocera*
 1 x lasiocampid moth *Entometa* sp.
 1 x lasiocampid moth *Paraguda crenulata*
 1 x lymantriid moth *Euproctis lucifuga*
 1 x lymantriid moth *Euproctis lutea*
 1 x lymantriid moth *Leptocneria reducta*
 1 x noctuid moth *Acontia detrita*
 1 x noctuid moth *Agamana sarmentosa*
 1 x noctuid moth *Amyna natalis*
 1 x noctuid moth *Avantha discolor*
 1 x noctuid moth *Condica illecta*
 6 x noctuid moth *Cruria donowani*
 2 x noctuid moth *Donuca spectabilis*
 1 x noctuid moth *Maliattha amphora*
 1 x noctuid moth *Meranda susialis*
 1 x noctuid moth *Metopiora sanguinata*
 1 x noctuid moth *Mocis trifasciata*
 1 x noctuid moth *Pantylia sparsa*
 1 x noctuid moth *Prometopus inassueta*
 1 x noctuid moth *Simplicia robustus*
 1 x noctuid moth *Speiredonia spectans*
 2 x noctuid moth *Thalatha guttalis*
 1 x notodontid moth *Neola semiaurata*
 1 x notodontid moth *Trichiocercus sparshalli*
 1 x oecophorid moth *Garrha pudica*
 1 x pyralid moth *Cardamyla carinentalis*
 1 x pyralid moth *Orthaga nr. melanoperalis*
 1 x pyralid moth *Salma* sp. ANIC2
 1 x sphingid moth *Theretra latreillii*
 1 x thyridid moth *Aglaopus centiginosa*
 1 x thyridid moth *Aglaopus pyrrhata*
 1 x xyloryctid moth *Plectophila nr. pyrgodes*
 1 x yponomeutid moth *Yponomeuta paurodes*

07.03.15:

Darvall property, Priors Road, Rockmount at GDA94 — S27.69444 x E152.026389: +/- 50 metres:

- 1 x anthelid moth *Anthela excellens*
- 1 x anthelid moth *Anthela varia*
- 1 x arctiid moth *Aloa marginata*
- 6 x arctiid moth *Amata* sp. 1
- 1 x arctiid moth *Utetheisa* sp.
- 1 x bombycid moth *Gastridiota adoxima*
- 1 x crambid moth *Agathodes ostentalis*
- 1 x crambid moth *Hednota mesochra*
- 6 x crambid moth *Nacoleia rhoealis*
- 2 x crambid moth *Rhimphalea sceletalis*
- 2 x crambid moth *Spoladea recurvalis*
- 1 x geometrid moth *Aelochroma hypochromaria*
- 1 x geometrid moth *Antictenia punctunculus*
- 1 x geometrid moth *Capusa senilis*
- 6 x geometrid moth *Casbia rectaria*
- 3 x geometrid moth *Comostola laesaria*
- 1 x geometrid moth *Crypsiphona oculitaria*
- 1 x geometrid moth *Hypobapta diffundens*
- 3 x geometrid moth *Idaea inversata*
- 1 x geometrid moth *Problepsis sancta*
- 1 x geometrid moth *Rhinodia rostraria*
- 1 x geometrid moth *Scioglyptis canescaria*
- 1 x geometrid moth *Traminda aventiaria*
- 1 x limacodid moth *Pseudanapaea denotata*
- 1 x lymantriid moth *Orgyia australis*
- 2 x noctuid moth *Achaea serva*
- 2 x noctuid moth *Acontia detrita*
- 3 x noctuid moth *Acontia nivipicta*
- 2 x noctuid moth *Aedia leucomelas*
- 1 x noctuid moth *Agarista agricola*
- 1 x noctuid moth *Anomis flava*
- 1 x noctuid moth *Armactica conchidia*
- 1 x noctuid moth *Avatha discolor*
- 1 x noctuid moth *Blenina lichenopa*
- 1 x noctuid moth *Chasmina pulchra*
- 1 x noctuid moth *Clytophylla* nr. *artia*
- 1 x noctuid moth *Cruria donowani*
- 1 x noctuid moth *Dasypodia cymantodes*
- 1 x noctuid moth *Dichromia quinqualis*
- 2 x noctuid moth *Donuca spectabilis*
- 2 x noctuid moth *Earias smaragdina*
- 3 x noctuid moth *Elusa* sp.
- 1 x noctuid moth *Epicyrtica metallica*
- 1 x noctuid moth *Eudocima fullonia*
- 1 x noctuid moth *Grammodes justa*

1 x noctuid moth *Grammodes pulcherrima*
 10 x noctuid moth *Maliattha amphora*
 1 x noctuid moth *Metopiora sanguinata*
 1 x noctuid moth *Mocis alterna*
 1 x noctuid moth *Nanaguna breviscula*
 1 x noctuid moth *Ophiusa disjungens*
 1 x noctuid moth *Ozarba punctigera*
 1 x noctuid moth *Pandesma submurina*
 1 x noctuid moth *Pataeta carbo*
 1 x noctuid moth *Pericyma cruegeri*
 2 x noctuid moth *Proteuxoa flexirena*
 2 x noctuid moth *Trigonodes hyppasia*
 1 x noctuid moth *Xanthodes amata*
 1 x notodontid moth *Epicoma melanosticta*
 1 x notodontid moth *Neola semiaurata*
 1 x pyralid moth *Cardamyla didymalis*
 1 x pyralid moth *Curena externalis*
 1 x sphingid moth *Agrius convolvuli*
 1 x tineid moth *Moerarchis australasiella*
 1 x xyloxyctid moth *Tymbophora peltastis*

08.03.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.692222 x E152.056667; +/- 50 metres;

1 x arctiid moth *Anthela* sp.
 1 x arctiid moth *Asura zebrina*
 1 x arctiid moth *Calamidia hirta*
 3 x arctiid moth *Hectobrocha multilinea*
 1 x arctiid moth *Manulea replana*
 6 x arctiid moth *Philenora* sp.
 1 x arctiid moth *Scaptosyle dichotoma*
 1 x arctiid moth *Tigrioides alterna*
 1 x bombycid moth *Gastridiota adoxima*
 1 x crambid moth *Cnaphalocrocis medinalis*
 3 x crambid moth *Herpetogramma licarsisalis*
 1 x crambid moth *Palpita* sp.
 1 x crambid moth *Parotis* sp.
 1 x crambid moth *Spoladea recurvalis*
 1 x crambid moth *Talanga alterna*
 1 x geometrid moth *Cleora sabulata*
 1 x geometrid moth *Comostola laesaria*
 1 x geometrid moth *Problepsis sancta*
 1 x geometrid moth *Rhinodia rostraria*
 10 x lacturid moth *Eustixis erythocera*
 1 x lacturid moth *Eustixis panopsia*
 1 x noctuid moth *Achaea janata*
 6 x noctuid moth *Achaea serva*
 1 x noctuid moth *Amphiongia chlorophoides*

1 x noctuid moth *Asota iodamia*
 1 x noctuid moth *Avatha discolor*
 1 x noctuid moth *Crioa* sp. ANIC 1
 1 x noctuid moth *Dasypodia cymantodes*
 1 x noctuid moth *Dichromia quinqualis*
 3 x noctuid moth *Elusa* sp.
 1 x noctuid moth *Eudocima materna*
 1 x noctuid moth *Iscadia pulchra*
 6 x noctuid moth *Maliattha amphora*
 1 x noctuid moth *Metopiora sanguinata*
 1 x noctuid moth *Pantylia sparsa*
 1 x noctuid moth *Serrododes campana*
 2 x noctuid moth *Spodoptera litura*
 1 x noctuid moth *Lysimelia lenis*
 1 x notodontid moth *Neola semiaurata*
 1 x saturniid moth *Syntherata janetta*
 1 x sphingid moth *Theretra marginata*
 2 x uraniid moth *Arcopteris nanula*
 4 x epiplemin moth *Balantiucha stolidia*
 1 x epiplemin moth *Lobogethes interrupta*

4.4: Incidental Invertebrate Records (including Odonata records)

Conducted by Rod Hobson, Toowoomba

22.11.14:

“Lowanna”, Rockmount at GDA94 — S27.67502 x E152.03993; +/- 150 metres:

Net-casting Spider *Deinopis subrufa*
 Grey Huntsman Spider *Holconia immanis*

10.01.15:

cnr. Walkers and Rockmount-Preston Roads, Rockmount at GDA94 — S27.67061 x E152.020914; +/- 50 metres:

Common Bluetail *Ischnura heterosticta* (damselfly)
 Gold-fronted Riverdamselfly *Pseudoagrion aureofrons* (damselfly)
 Orange Threadtail *Nososticta solida* (damselfly)
 Sapphire Rockmaster *Diphlebia coerulescens* (damselfly)
 Yellow-tipped Tigertail *Choristhemis flavoterminalis* (dragonfly)
 Blue Skimmer *Orthetrum caledonicum* (dragonfly)
 Scarlet Percher *Diplacodes haematodes* (dragonfly)

Sawpit Gully Road, Rockmount at GDA94 — S27.68723 x E152.05098; +/- 50 metres:

Australian Emperor *Anax papuensis* (dragonfly)
 Pale Hunter *Austrogomphus amphi-clitus* (dragonfly)
 Black-headed Skimmer *Crocothemis nigrifons* (dragonfly)

Scarlet Percher *Diplacodes haematodes* (dragonfly)
Blue Skimmer *Orthetrum caledonicum* (dragonfly)
Orchard Swallowtail *Papilio aegeus* (butterfly)
Large Grass-yellow *Eurema hecabe* (butterfly)
Yellow Albatross *Appias paulina* (butterfly)
Caper White *Belenois java* (butterfly)
Glasswing *Acraea andromacha* (butterfly)
Meadow Argus *Junonia villida* (butterfly)
Common Crow *Euploea core* (butterfly)
Lesser Wanderer *Danaus chrysippus* (butterfly)
Monarch *Danaus plexippus* (butterfly)
Blue Tiger *Tirumala hamata* (butterfly)
Common Grass Blue *Zizina labradus* (butterfly)
Grass Faerie *Parnkalla muelleri* (cicada)
Common March Fly *Tabanus australicus*

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 50 metres:

Garden Bermius *Bermius brachycerus* (grasshopper)
Grass Faerie *Parnkalla muelleri* (cicada)

Stockyard-Rockmount Road, Stockyard at GDA94 — S27.66465 x E152.06082; +/- 5 metres:

Orange-fingered Yabby *Cherax depressus*
Orange Threadtail *Nososticta solida* (damselfly)
Common Bluetail *Ischnura heterosticta* (damselfly)
Gold-fronted Riverdamsel *Pseudoagrion aureofrons* (damselfly)
Red and Blue Damsel *Xanthagrion erythroneurum* (damselfly)
Australian Emperor *Anax papuensis* (dragonfly)
Stout Vicetail *Hemigomphus heteroclytus* (dragonfly)
Australian Emerald *Hemicordulia australiae* (dragonfly)
Black-headed Skimmer *Crocothemis nigrifons* (dragonfly)
Blue Skimmer *Orthetrum caledonicum* (dragonfly)
Fiery Skimmer *Orthetrum villosovittatum* (dragonfly)
Scarlet Percher *Diplacodes haematodes* (dragonfly)
Graphic Flutterer *Rhyothemis graphiptera* (dragonfly)

Stockyard-Rockmount Road, Stockyard at GDA94 — S27.66400 x E152.06230; +/- 10 metres:

Grass Faerie *Parnkalla muelleri* (cicada)

Stockyard Creek Hall, Stockyard at GDA94 — S27.64220 x E 152.06350; +/- 10 metres:

a native dung beetle *Onthophagus dandalu*



Plate 5. A pair of Chequered Swallowtails *Papilio demoleus sthenelus*, Darvall property, Priors Road, Rockmount, 8 March, 2015. Photo R. Ashdown.



Plate 6. A female Garden Orb-weaver *Eriophora transmarina* makes a meal of a Razor Grinder *Henicopsaltria eydouxii*, Egert Road, Stockyard, 8 February, 2015. Photo R. Ashdown.

Scanlans Road, Stockyard at GDA94 — S27.64454 x E152.05695; +/- 10 metres:

Grass Faerie *Parnkalla muelleri* (cicada)

Scanlans Road, Stockyard at GDA94 — S27.64673 x E152.05551; +/- 10 metres:

Blue Skimmer *Orthetrum caledonicum* (dragonfly)

Scarlet Percher *Diplacodes haematodes* (dragonfly)

Graphic Flutterer *Rhyothemis graphiptera* (dragonfly)

Common Glider *Tramea loewii* (dragonfly)

159 Upper Flagstone Creek Road, Upper Flagstone Creek at GDA94 — S27. 62127 x E151. 98470; +/- 10 metres:

Razor Grinder *Henicopsaltria eydouxii* (cicada)

Grass Faerie *Parnkalla muelleri* (cicada)

Hell Hole Gully Track, Glen Lomond Park, Hell Hole at GDA94 — S27.61917 x E151.97415; +/- 250 metres:

Clanger Cicada *Psaltoda claripennis*

Yellowbelly Cicada *Psaltoda harrisii*

Bottle Cicada *Glaucopsaltria viridis*

Black Tree Ticker *Birrima varians* (cicada)

Handsome Macrotona *Macrotona mjoebergi* (grasshopper)

Long-legged Bandwing *Heteropternis obscurella* (grasshopper)

Orange Potter Wasp *Eumenes latreilli*

11.01.15:

Mt. Flag Estate, Preston Road, Preston at GDA94 — S27.69225 x E152.02615; +/- 200 metres:

Mimetic Gumleaf Grasshopper *Goniaea opomaloides*

Floury Baker *Aleeta curvicosta* (cicada)

Black Tree Ticker *Birrima varians* (cicada)

Priors Road, Rockmount at GDA94 — 56J E404269 x N6937620; +/- 20 metres:

Privet Hawk Moth *Psilogramma menephron*

Darvall Property, Priors Road, Rockmount at GDA94 — S27.69225 x E152.02615; +/- 50 metres:

Eastern Billabongfly *Austroagrion watsonia* (damselfly)

Aurora Bluetail *Ischnura aurora* (damselfly)

Red and Blue Damsel *Xanthagrion erythroneurum* (damselfly)

Australian Emperor *Anax papuensis* (dragonfly)

Blue Skimmer *Orthetrum caledonicum* (dragonfly)

Wandering Percher *Diplacodes bipunctata* (dragonfly)

Scarlet Percher *Diplacodes haematodes* (dragonfly)
Graphic Flutterer *Rhyothemis graphiptera* (dragonfly)
Common Glider *Tramea loewii* (dragonfly)
Bottle Cicada *Glaucopsaltria viridis*
Northern Sandy Dung Beetle *Euoniticellus intermedius*
Grey Dungball Roller *Sisyphus spinipes* (beetle)
Common Bush Fly *Musca vetustissima*
Tree Brown Paper Wasp *Ropalidia socialistica*

12.01.15:

Stockyard Creek Community Hall, Stockyard at GDA94 — S27.64220 x E 152.06350; +/- 25 metres:

Grass Faerie *Parnkalla muelleri* (cicada)
White-faced Brown Paper Wasp *Ropalidia plebeiana*

Rockmount-Preston Rd, Rockmount at GDA94 — S27.67562 x E152.03719; +/- 50 metres:

Northern Sandy Dung Beetle *Euoniticellus intermedius*
Gazella Dung Beetle *Onthophagus gazella*
a longicorn beetle *Rhytiphora paradalis*
Grey Dungball Roller *Sisyphus spinipes* (beetle)

Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65487 x E152.00856; +/- 10 metres:

Bladder Cicada *Cystosoma saundersii*

Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65473 x E152.01071; +/- 5 metres:

a pyralid moth *Cardamyla carinentalis*

13.01.15:

Stephens Property, “Split Rock Mountain”, Rockmount at GDA94 — S 27.88144 x E 152.03880 +/- 200 metres:

Froggatt’s Buzzer *Froggattina australis* (grasshopper)
Yellow-winged Locust *Gastrimargus musicus*
Yellowbelly Cicada *Psaltoda harrisii*
Acacia Leaf Beetle *Dicranosterna immaculata*
Northern Sandy Dung Beetle *Euoniticellus intermedius*
Yellow-shouldered Dung Beetle *Liatongus militaris*
Gazella Dung Beetle *Onthophagus gazella*
Marbled Line-blue *Erysichton palmyra* (butterfly)

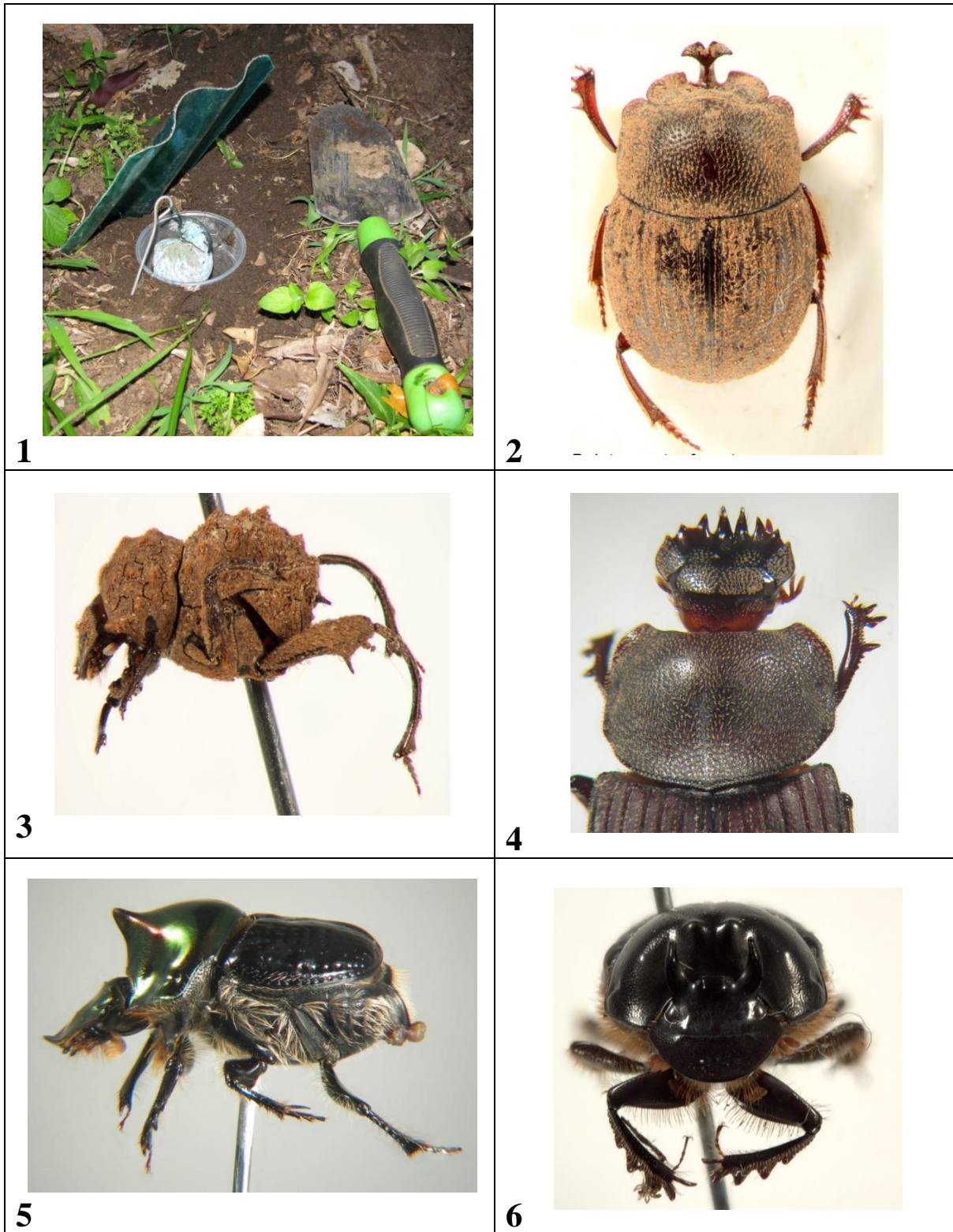


Plate 7. Dung baited pitfall trap. **2.** *Boletoscapter furcatus*. **3.** *Amphistomus storeyi*. **4.** *Cephalodesmius quadridens*. **5.** *Onthophagus dandalu*. **6.** *Onthophagus capella*. Photos courtesy Geoff Monteith.

Stephens Property, “Split Rock Mountain”, Rockmount at GDA94 —
S 27.67933 x E 152.04221 +/- 10 metres:

Giant Green Slantface *Acrida conica* (grasshopper)
Mud Nest Tenant Wasp *Abispa splendida*

17.01.15:

Darvall Property, Priors Road, Rockmount at GDA94 — S27.682183 x E152.028142; +/-
100 metres:

Botany Bay Diamond Weevil *Chrysolopus spectabilis*

Darvall property, Priors Road, Rockmount at GDA94 — S27.694444 x E152.028611: +/-
100 metres:

1 x jumping spider *Ocrisiona leucomis* (female with eggs)

21.01.15:

Stockyard Creek Community Hall, Stockyard at GDA94 — S27.64220 x E 152.06350; +/-
25 metres:

Black House Spider *Badumna insignis*
a jumping spider *Clynotis albobarbatus*
White-tailed Spider *Lampona murina*
Redback Spider *Latrodectus hasseltii*
Daddy Longlegs *Pholcus phalangioides* (spider)
a darkling beetle *Chalcopteroides (brevipes?)*
a monkey beetle *Geloptera* sp.
2 x Gazella Dung Beetle *Onthophagus gazella* (dead)

Egert Road, Stockyard at GDA94 — S27.66478 x E152.07974; +/- 10 metres:

1 x Mountain Katydid *Acripeza reticulata* (adult female)

Egert Road, Stockyard at GDA94 — S27.66773 x E152.07812; +/- 50 metres:

Northern Sandy Dung Beetle *Euoniticellus intermedius*
Bronze Dung Beetle *Onitis alexis*
Gazella Dung Beetle *Onthophagus gazella*

24.01.15:

Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65473 x E152.01071; +/- 300 metres:

Spotted Katydid *Ephippitytha trigintiduoguttata*
a scarab beetle *Anoplognathus brunnipennis*
Metallic Green Acacia Beetle *Calomela ruficeps*
Acacia Leaf Beetle *Dicranosterna immaculata*

Acacia Leaf Beetle *Dicranosterna picea*
Tree Trunk Tiger Beetle *Distipsidera undulata*
*1 x native dung beetle *Onthophagus thoreyi*
1 x Emperor Gum Moth *Opodiphthera eucalypti* (caterpillar)
Red-white Leaf Beetle *Paropsisterna* sp.
a noctuoid moth *Parallelia latizona*

*specimen collected; identified by Dr. Geoff Monteith, Queensland Museum (ret.)

02.02.15:

Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65473 x E152.01071; +/- 300 metres:

Rainforest Scorpion *Liocheles waigiensis*
Jewel Spider *Austracantha minax*
Leaf-curling Spider *Phonognatha graeffei*
Giant Green Slantface *Acrida conica* (grasshopper)
Bark-mimicking Grasshopper *Coryphistes ruricola*
Deadleaf Grasshopper *Goniaea australasiae*
Handsome Macrotona *Macrotona mjoebergi* (grasshopper)
Yellow-winged Locust *Gastrimargus musicus*
Razor Grinder Cicada *Henicopsaltria eydouxii*
Cherry Nose Cicada *Macrotristria angularis*
Bark Squeaker Cicada *Pauropsalta corticinus*
Crusader Bug *Mictis profana*
Tree Trunk Tiger Beetle *Distipsidera undulata*
Lycid Beetle *Porrostoma rhipidium*
No-brand Grass-yellow *Eurema brigitta* (butterfly)
Orchid Drupe Wasp *Lissopimpla excelsa*

Glen Lomond Creek Crossing, Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65277 x E152.00299; +/- 200 metres:

Bottle Cicada *Glaucopsaltria viridis*
Clanger Cicada *Psaltoda claripennis*
Mottled Predatory Click Beetle *Paracalais (gibboni?)* (dead)

03.02.15:

cnr. Sawpit Gully Road & Rockmount Road, Rockmount at GDA94 — S27.67756 x E152.05078; +/- 50 metres:

a carcass beetle *Omorgus euclensis*

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 300 metres:

1 x jumping spider *Opisthoncus percadentatus* (female)
Orchard Swallowtail *Papilio a. aegus* (butterfly)
Fuscous Swallowtail *Papilio fuscus* (butterfly)

Clearwing Swallowtail *Cressida cressida* (butterfly)
White Migrant *Catopsilia pyranthe* (butterfly)
Orange Migrant *Catopsilia scylla* (butterfly)
Large Grass-yellow *Eurema hecabe* (butterfly)
Caper White *Belenois java* (butterfly)
Southern Pearl-white *Elodina angulipennis* (butterfly)
Varied Eggfly *Hypolimnas bolina* (butterfly)
Meadow Argus *Junonia villida* (butterfly)
Common Crow *Euploea core* (butterfly)
Lesser Wanderer *Danaus chrysippus* (butterfly)
Monarch *Danaus plexippus* (butterfly)
Blue Tiger *Tirumala hamata* (butterfly)

Sawpit Gully Road (Walton Property), Rockmount via Helidon at GDA94 — S27.69222
x E152.05731; +/- 200 metres:

1 x Hay's Flat-coiled Snail *Pedinogyra hayii*
1 x Red Triangle Slug *Triboniophorus graeffei*

07.02.15:

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63876 x E151.98534;
+/- 20 metres:

St. Andrew's Cross Spider *Argiope keyserlingi*
Giant Green Slantface *Acrida conica*
Yellow-winged Locust *Gastrimargus musicus*
Bladder Cicada *Cystosoma saundersii*
a longicorn beetle *Rhytiphora paradalis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63856 x E151.98547;
+/- 20 metres:

3 x Botany Bay Diamond Weevil *Chrysolopus spectabilis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63804 x E151.98578;
+/- 20 metres:

Garden Orb-weaver *Eriophora transmarina*
2 x Botany Bay Diamond Weevil *Chrysolopus spectabilis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63777 x E151.98576;
+/- 20 metres:

1 x Wattle Cicada *Ewartia oldfieldi*
2 x Botany Bay Diamond Weevil *Chrysolopus spectabilis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63743 x E151.98581;
+/- 20 metres:



Plate 8. Tau Emerald *Hemicordulia tau*, Cooks Road, Gormans Gap, 8 February, 2015. Photo R. Ashdown.

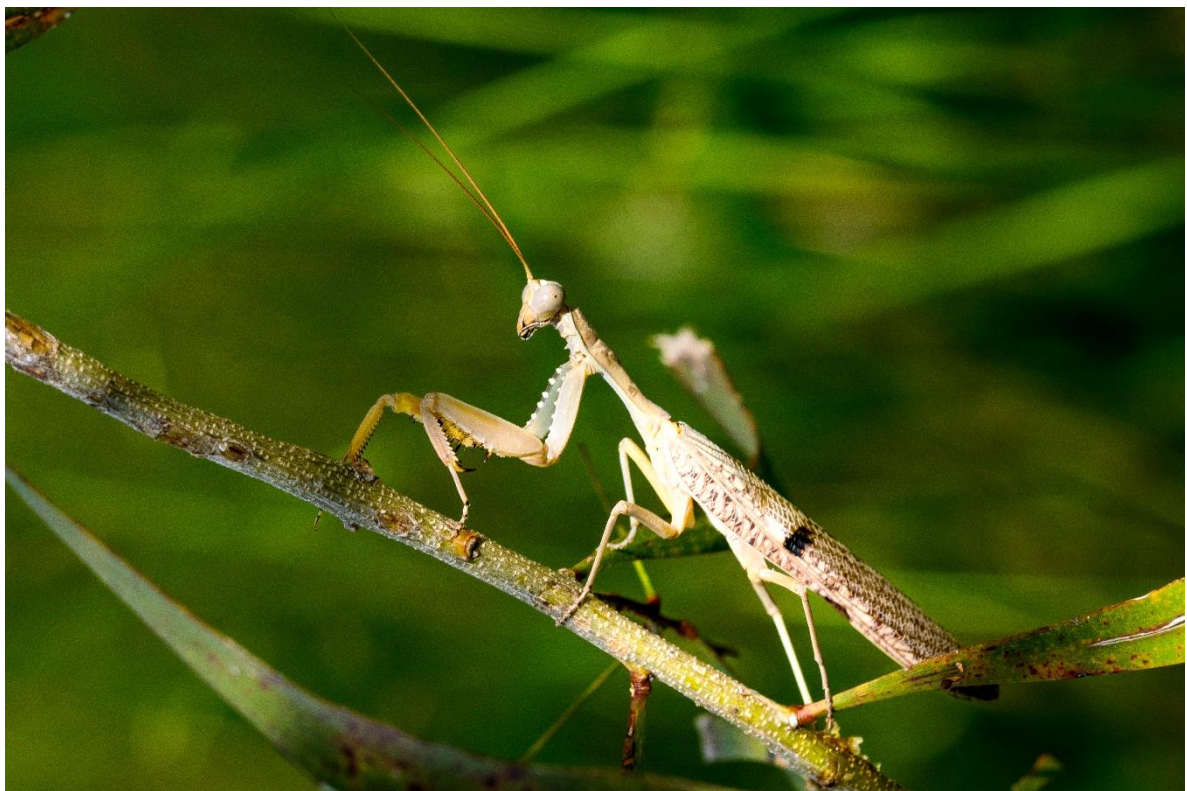


Plate 9. Burying Mantis *Sphodropoda tristis*, "Split Rock Mountain", Rockmount, 14 February, 2015. Photo R. Ashdown.

an orb-weaver *Eriophora biapicata*
5 x Botany Bay Diamond Weevil *Chrysolopus spectabilis*

Archers Slide, Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63633 x E151.98610; +/- 20 metres:

Handsome Macrotona *Macrotona mjoebergi* (grasshopper)
Bladder Cicada *Cystosoma saundersii*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63600 x E151.98630; +/- 20 metres:

Floury Baker *Aleeta curvicosta* (cicada)
Australian Painted Lady *Vanessa kershawi* (butterfly)

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63464 x E151.98706; +/- 20 metres:

Razor Grinder *Henicopsaltria eydouxii* (cicada)
1 x Spotted Flower Chafer *Neorrhina punctata* (beetle)

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63348 x E151.98778; +/- 20 metres:

2 x Botany Bay Diamond Weevil *Chrysolopus spectabilis*
1 x Faggot Case Moth *Clania ignobilis*

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63273 x E151.98920; +/- 20 metres:

1 x Razor Grinder *Henicopsaltria eydouxii* (cicada) (dead)

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63599 x E151.98633; +/- 20 metres:

Clanger Cicada *Psaltoda claripennis*
1 x Black-spotted Grass-blue *Famegana alsulus* (female) (butterfly)

Gormans Gap Historical Track, Gormans Gap at GDA94 — S27.63851 x E151.98555; +/- 20 metres:

Blue Skimmer *Orthetrum caledonicum* (dragonfly)
Black Tree Ticker *Birrima varians* (cicada)
Tailed Emperor *Polyura sempronius* (butterfly)

08.02.15:

Cooks Road, Gormans Gap at GDA94 — S27.63235 x E151.98938; +/- 20 metres:

Tau Emerald *Hemicordulia tau* (dragonfly)

Kennedys Road, Rockmount at GDA94 — S27.66769 x E152.07120; +/- 10 metres:
1 x Bee Hawk Moth *Cephonodes kingii*

Egert Road, Stockyard at GDA94 — S27.66004 x E152.07935; +/- 10 metres:

Garden Orb-weaver *Eriophora transmarina*
Common Glider *Tramea loewii* (dragonfly)
Bladder Cicada *Cystosoma saundersii*
Razor Grinder *Henicopsaltria eydouxii* (cicada)
a longicorn beetle *Rhytiphora paradalis*
a case moth *Hylactra huebneri*

East Egypt Road, Mt. Whitestone at GDA94 — S27.68902 x E152.08066; +/- 100 metres:

Tailed Emperor *Polyura sempronius* (butterfly)

Glen Lomond Creek, Hell Hole at GDA94 — S27.65247 x E152.00316; +/- 10 metres:

Southern Whitetip *Episynlestes albicauda* (damselfly)

14.02.15:

P & E. Darvall, “Under Milkweed”, East Egypt Road, Mt. Whitestone at GDA94 — S27.68857 x E152.075016; +/- 300 metres:

1 x Acacia Longicorn *Penthea solida* (beetle)

“Split Rock Mountain”, Rockmount via Helidon at GDA94 — S27.88144 x E152.03880; +/- 300 metres:

Burying Mantis *Sphodropoda tristis* (praying mantis)
a scarab beetle *Anoplognathus brunnipennis*
Orchid Drupe Wasp *Lissopimpla excelsa*
Orange Caterpillar Parasite *Netelia producta*

P & E. Darvall, “Under Milkweed”, East Egypt Road, Mt. Whitestone at GDA94 — S27.68857 x E152.075016; +/- 50 metres:

1 x Acacia Jewel Beetle *Diphucrania leucosticta*

P & E. Darvall (Palm Creek), Mt. Whitestone at GDA94 — S27.67788 x E152.08890; +/- 300 metres:

1 x Red Triangle Slug *Triboniophorus graeffei*
Orange-fingered Yabby *Cherax depressus*
a water spider *Dolomedes* sp.
Australian Duskhawker *Austrogynacantha heterogena* (dragonfly)
Spur-legged Stick-insect *Didymuria violescens* (male, nymph)
Common Adpressus *Adpressus fallax* (grasshopper)
Mountain Katydid *Acripeza reticulata* (adult male, dead)

*1 x Semon's Grass Shield-back *Rhachidorus semoni* (katydid)
Christmas Beetle *Anoplognathus porosus*
a wattle pig *Leptopius* sp. (weevil)
Snail-eating Carabid *Pamborus alternans* (beetle) (remains)
1 x Common Eucalypt Longicorn *Phoracantha semipunctata* (beetle)
Rhinoceros Beetle *Xylotrupes ulysses* (remains)

*insect photographed; identification confirmed by Dr. David Rentz, CSIRO (ret.)

21.02.15:

Mt. Campbell Rural Fire Brigade shed, Walkers Road, Rockmount at GDA94 —
S27.68372 x E152.01494; +/- 10 metres:

1 x spider *Allocosa (Lycosa) obscuroides*
Daddy Long-legs *Pholcus phalangioides* (spider)
3 x African Black Beetle *Heteronychus arator*
1 x native dung beetle *Onthophagus atrox*
1 x Gazella Dung Beetle *Onthophagus gazella*

25.02.15:

Glen Lomond Creek, Hell Hole at GDA94 — S27.65247 x E152.00316; +/- 100 metres:

Golden Orb-weaver *Nephila edulis* (spider)
2 x Common Pardillana *Pardillana limbata* (grasshopper)
1 x toad-bug *Nerthra* sp.
White Migrant *Catopsilia pyranthe crokera* (butterfly)
Yellow Albatross *Appias paulina ega* (butterfly)
Varied Eggfly *Hypolimnas bolina nerina* (butterfly)
Meadow Argus *Junonia villida calybe* (butterfly)
Blue Tiger *Tirumala h. hamata* (butterfly)
Common Crow *Euploea core corinna* (butterfly)
Monarch *Danaus p. plexippus* (butterfly)
Small Green-banded Blue *Psychonotis caelius* (butterfly)
a moth *Eressa angustipenna*

Sutcliffes Road crossing, Flagstone Creek, Lower Flagstone Creek at GDA94 —
S27.62964 x E152.04716; +/- 50 metres:

3 x Balonne Marsh-snail *Thiara balonnensis* (dead)

03.03.15:

Darvall property, Priors Road, Rockmount at GDA94 — S27.694444 x E152.028611; +/-
50 metres:

1 x Hairy Mary Caterpillar (the moth *Anthela varia*)

06.03.15:

Darvall property, Priors Road, Rockmount at GDA94 — S27.69415 x E152.002963: +/- 50 metres:

a ladybird beetle *Coleophora inaequalis*
Bronze Dung Beetle *Onitis alexis*
Emerald Dung Beetle *Onitis viridulus*
Gazella Dung Beetle *Onthophagus gazella*

07.03.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 100 metres:

* a bark bug *Drakiessa minor*

*specimen collected; identified by Dr. Geoff Monteith, Queensland Museum (ret.)

“Ridge Prospect”, Hell Hole at GDA94 — S27.65482 x E152.03682; +/- 50 metres:

Garden Bermius *Bermius brachycerus* (grasshopper)
1 x native dung beetle *Onthophagus rubicundulus*

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 100 metres:

Hay’s Flat-coiled Snail *Pedinogyra hayii*
Fraser’s Banded Snail *Sphaeospira fraseri*
Garden Bermius *Bermius brachycerus* (grasshopper)
a hoverfly *Episyrphus viridaureus*
Southern Meat Ant *Iridomyrmex purpureus*

Sawpit Gully Road, Rockmount at GDA94 — S27.68806 x E152.05125; +/- 100 metres:

1 x Southern Whitetip *Episynlestes albicauda* (damselfly, male, vouchered for Q.M.)
2 x Forest Mosquitohawk *Micromidia atrifrons* (dragonfly, 2 x male, vouch. for Q.M.)
1 x Scarlet Percher *Diplacodes haematodes* (dragonfly, male, vouchered for Q.M.)
1 x Blue Skimmer *Orthetrum caledonicum* (dragonfly, female, vouchered for Q.M.)
Pale Blue Triangle *Graphium eurypylus* (butterfly)
1 x Blue Argus *Junonia orithya* (butterfly)

Darvall property, Priors Road, Rockmount via Helidon at GDA94 — S27.69415 x E152.002963: +/- 100 metres:

1 x Australian Emperor *Anax papuensis* (dragonfly, male, vouchered for Q.M.)

Darvall property, Priors Road, Rockmount via Helidon at GDA94 — S27.69415 x E152.002963: +/- 50 metres:

1 x centipede *Scolopendra morsitans*

1 x ladybird beetle *Harmonia conformis*
3 x ladybird beetle *Harmonia octomaculata*

“Ridge Prospect”, Hell Hole at GDA94 — S27.65745 x E152.01816; +/- 50 metres:

1 x Australian Emperor *Anax papuensis* (dragonfly, male, vouchered for Q.M.)

Dwyers Scrub Regional Park, Mt. Whitestone at GDA94 — S27.70236 x E152.09406; +/- 100 metres.

Hay’s Flat-coiled Snail *Pedinogyra hayii*
Fraser’s Banded Snail *Sphaeospira fraseri*
1 x Scarlet Percher *Diplacodes haematodes* (dragonfly, male, vouchered for Q.M.)
1 x Blue Skimmer *Orthetrum caledonicum* (dragonfly, male, vouchered for Q.M.)
Bottle Cicada *Glaucopsaltria viridis*
Yellow Albatross *Appias paulina* (butterfly)
Blue Tiger *Tirumala h. hamata* (butterfly)
White-banded Plane *Phaedyma shepherdii* (butterfly)
Monarch *Danaus plexippus* (butterfly)
Orchard Swallowtail *Papilio aegeus* (butterfly)
Four-barred Swordtail *Protographium leosthenes* (butterfly)

P. & E. Darvall, “Under Milkweed”, East Egypt Rd., Mt Whitestone at GDA94 — S27.68857 x E152.075016; +/- 50 metres:

*1 x native dung beetle *Onthophagus incornutus*

*specimen collected; identified by Dr. Geoff Monteith, Queensland Museum (ret.)

08.03.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 100 metres:

1 x Common Mole Cricket *Gryllotalpa pluvialis*
*1 x lacewing *Psychopsis coelevagus*

*specimen collected; identified by Dr. Geoff Monteith, Queensland Museum (ret.)

Darvall property, Priors Road, Rockmount at GDA94 — S27.69415 x E152.002963: +/- 50 metres:

1 x jumping spider *Omeodus orbiculatus*

06–08.03.15:

Sawpit Gully Road, Rockmount at GDA94 — S27.68806 x E152.05125; +/- 100 metres; all damselflies & dragonflies recorded and vouchered by Dr. C. Burwell, Queensland Museum:

1 x Southern Whitetip *Episynelestes albicauda* (male)

1 x Common Flatwing *Austroargiolestes icteromelas nigrolabiatus* (male)
1 x Sapphire Rockmaster *Diphlebia coeruleascens* (female)
1 x Unicorn Darner *Austroaeschna unicornis* (male)
1 x Australian Emerald *Hemicordulia australiae* (male)
2 x Wandering Percher *Diplacodes bipunctata* (1 x male, 1 x female)
3 x Scarlet Percher *Diplacodes haematodes* (2 x male, 1 x female)
1 x Blue Skimmer *Orthetrum caledonicum* (male)

07–08.03.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 100 metres; all damselflies & dragonflies recorded and vouchered by Dr. C. Burwell, Queensland Museum:

1 x Common Flatwing *Austroargiolestes icteromelas nigrolabiatus* (male)
1 x Australian Duskhawker *Austrogynacantha heterogena*
1 x Australian Emerald *Hemicordulia australiae* (male)
1 x Tau Emerald *Hemicordulia tau* (male)
1 x Scarlet Percher *Diplacodes haematodes* (male)

11.03.15:

Darvall property, Priors Road, Rockmount at GDA94 — S27.694444 x E152.028611: +/- 50 metres:

1 x huntsman *Delena cancerides* (spider)

14.03.15:

Dwyers Scrub Regional Park, Mt. Whitestone at GDA94 — S27.70262 x E152.028611; +/- 100 metres.

1 x green huntsman *Neosparassus* sp. (spider)

Darvall property, Priors Road, Rockmount at GDA94 — S27.694444 x E152.002963: +/- 50 metres:

1 x jumping spider *Omeodus orbiculatus*

15.03.15:

P. & E. Darvall, “Under Milkweed”, East Egypt Rd., Mt Whitestone at GDA94 — S27.68857 x E152.075016; +/- 50 metres:

1 x Redback Spider *Latrodectus hasseltii*

04.04.15:

Glen Lomond Creek Crossing, Hell Hole Ck. Road, Hell Hole at GDA94 — S27.65277 x E152.00299; +/- 200 metres:

1 x Acacia Longicorn *Penthea solida* (beetle)

1 x Tower Case Moth *Lepidoscia arctiella*

11.04.15:

102 Preston Boundary Road, Preston at GDA94 — S27.63711 x E151.94920; +/- 100 metres:

1 x Common Pyrgomorph *Monistria discrepans* (short-winged form; grasshopper)

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69222 x E152.05731; +/- 100 metres:

Hay's Flat-coiled Snail *Pedinogyra hayii*

19.04.15:

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69114 x E152.05969; +/- 25 metres:

2 x Giant Golden Orb-weaver *Nephila pilipes* (spider)

Sawpit Gully Road (Walton Property), Rockmount at GDA94 — S27.69236 x E152.05847; +/- 10 metres:

2 x Toowoomba Funnel-web *Hadronyche infensa* (spider)

Common Flatwing *Austroargiolestes icteromelas nigrolabiatus* (damsselfly)

5: Discussion

Considering the huge biodiversity of invertebrate species within the environment it is obviously way beyond the scope of this document to discuss all of the species encountered during this survey. Some of the orders/families, however are well known for the area under discussion from present and previous survey work and some extrapolations can be made on this knowledge. Others such as the moths and ants belong to huge assemblages and little or no comment can be made regarding their status within the survey area. Data for these insects are deficient and indicates the paucity of taxonomic work being done on these insects. This can be adjudged by the number of ant genera listed in **4.2** without any specific epithet and simply designated as sp. A, sp. B etc.

The butterflies and dragonflies and damsselfies are very popular insects for study and good field guides exist for their identification. Accordingly they have been well researched generally including within the survey area. Dr. Geoff Monteith is regarded as an international expert on dung beetles. His assessment of the dung beetle fauna of the survey area is that approximately half of the native species likely to be found in the study area were recorded

during the survey under consideration (G. Monteith pers. comm.). This corresponds with literature searches carried out by the author (Allsopp 1975, 1975a, 1977; Edwards 2002, Monteith & Kenyon 2011). With these facts in mind some general statements regarding some of the orders under discussion can be made.

At the time of writing 35 species of dragonflies and damselflies have been recorded in the survey area since October 2011 to the present (April 2015). This total includes three additional species added during the survey under discussion viz. Forest Mosquitohawk *Micromidia atrifrons*, Australian Duskhawker *Austrogynacantha heterogena*, and Aurora Bluetail *Ischnura aurora*. Of the 35 species recorded in the area since October 2011 ten of these were not recorded during this survey. Although it cannot be stated adamantly it can be stated with some measure of confidence that this number would fairly represent the Odonata fauna of the Upper Lockyer Valley. A similar situation would hold for the butterflies although it is likely that more of the cryptic species such as members of the Lycaenidae and Hesperidae may well reveal themselves in any future survey work. Nevertheless the list of butterflies recorded for the survey area since October 2011 totals 85 individual species of the grand total of 271 species of Lepidoptera known from the area. This can be considered as a reasonably comprehensive list of the butterflies of the survey area. It can therefore be stated with a reasonable degree of certainty that the dragonflies and damselflies (Odonata) and the butterflies only of the Lepidoptera are well known for the survey area. In addition the comments by Dr. Monteith also give a sound judgement as to the situation likely to exist for the survey area's Scarabaeidae (dung beetles).

As stated above it is well beyond the scope of this document to give a detailed description of all the species recorded for this survey, however some of the species that were recorded during this work bear comment. Nineteen dung beetle species were recorded during this survey by Dr. Monteith (17 x native spp., 2 x introduced spp.) represented by 438 individual beetles. The most common species recorded was *Onthophagus rubicundulus* with 136 of this species alone being taken at Site 6 in Dwyers Scrub Regional Park. The next most common species was 48 of the undescribed *Onthophagus* CQ2 taken on the Walton property, Sawpit Gully, Rockmount. Another four species of introduced dung beetles were recorded by Rod Hobson as incidental sightings during this survey viz. *Euoniticellus intermedius*, *Onitis viridulus*, *Onthophagus gazella* and *Sisyphus spinipes*. Twenty-three species of dung beetle, therefore have been recorded in the survey area.

Two species of native dung beetle taken during this survey are of particular interest. Twenty-three specimens of the winged ball-rolling dung-feeding *Amphistomus calcaratus* were taken in Dwyers Scrub Regional Park (Site 6). This species occurs in dry rainforests from about Ingham in northern Queensland south to Bahrs Scrub near Beenleigh, Mt. French near Boonah and Cameron Creek near Ipswich (G. Monteith pers. comm.). The Dwyers Scrub records are significantly further west of other southern limits for the species. The second species of note *Amphistomus storeyi* (Plate 7, image 3) was recorded from the Walton property on Sawpit Gully Road, Rockmount (Site 2). Eight specimens (seven x female, one x male) were collected. This is a small, wingless species and all the wingless species of this genus are limited in distribution and are good indicators of long persistence of rainforest (wet vine scrub) where they occur (G. Monteith pers. comm.). Until the present find this species was very limited in its known distribution with records from Mt. Glorious, Brisbane and Mt. Stradbroke in the Minden Range. The Sawpit Gully discovery is a significant range extension for the species to its west and south.



Plate 10. Wesley Jenkinson and Rod Hobson examining light trap, Darvall property, Priors Road, Rockmount, 7 March, 2015. Photo R. Ashdown.



Plate 11. A Giant Golden Orb-weaver *Nephila pilipes*, Walton property, Sawpit Gully Road, Rockmount, 19 April, 2015. Photo R. Ashdown.

A flat bug *Drakiessa minor* (Hemiptera: Aradidae) was also found at Site 2 by Dr. Monteith. This genus of 13 named and one unnamed species is the largest genus of Aradidae in Australia. These bugs are a group of large robust species endemic to the eastern seaboard between central Cape York Peninsula and northern New South Wales. *Drakiessa minor* is found from the Conway Beach, Proserpine area south to Bahrs Scrub near Beenleigh. As with *Amphistomus calcaratus* above the Dwyers Scrub record of this flat bug is significantly further west of other southern limits known for the insect. *Drakiessa* is an apterous genus found living on the underside of logs and sticks lying on the ground (Monteith 1997).

During a survey along Gormans Gap Historical Track on the 7 March Wesley Jenkinson recorded a pair of Cycad Blue *Theclinessthes onycha* (Plate 2). The larva of this butterfly feed exclusively on Cycadaceae and Zamiaceae (Braby 2000). As such it is the only Australian butterfly known to use gymnosperms as its larval host. It is curious that no native Cycadaceae or Zamiaceae are known from the Lockyer Valley and it is assumed that this butterfly would be using plants growing in suburban gardens in nearby Toowoomba as its hosts. The butterfly is a regular visitor to the Cycad Garden in the Toowoomba Botanical Gardens (pers. obs.).

On the night of the 08.02.15 Wesley Jenkinson carried out a light trap survey of moths on Palm Creek on the property of Peter and Elspeth Darvall at Mt. Whitestone. Incidental records of other invertebrates drawn to the light trap were recorded by Rod Hobson at this time. One of these records was that of a katydid that was eventually identified as Semon's Grass Shield-back *Rhacidorus semoni* (Plate 4), a species that was only known from Bundaberg and the Cooloola region of south-east Queensland (Rentz 2010). The identification of this insect was confirmed by Dr. David Rentz who is a highly respected authority on the Orthoptera; from photographs of the insect subsequently forwarded to him (D. Rentz pers. comm.). The Palm Creek record of this katydid extends the species' distribution considerably south and west of its previously understood range.

One incidental record of a spider from the Walton property on Sawpit Gully, Rockmount recorded in April is of particular interest. Two females of the Giant Golden Orb-weaver *Nephila pilipes* (Plate 11) were observed in this area of remnant wet vine scrub on the 19.04.2015. This was the first confirmed record of this species for the survey area (and the Lockyer Valley generally). It is also the most westerly record of the species to date in southern Queensland. This spider is essentially a species of tropical Queensland although it is occasionally found in southern Queensland with confirmed records from the wetter areas of Fraser Island and Cooloola (pers. obs.). Noted Toowoomba arachnologist Ron Atkinson who confirmed the identification of the Sawpit Gully spider from photographs forwarded said that he had photographic records of this species from Noosa and Buderim and "one or two records from the Gold Coast" but that this was his first record from the Lockyer Valley (R. Atkinson pers. comm.). Three species of *Nephila* are known from the Australian mainland and Tasmania (Volker et al 2014) and with the recent finding of *pilipes* in the Lockyer Valley all three species are now also known from this area. The other two species are the very common *N. edulis* and the moderately common *N. plumipes*. The highly dangerous Toowoomba Funnel-web *Hadronyche infensa* was also recorded in close proximity to the Giant Golden Orb-weaver.

6: Conclusion

It is interesting to postulate if the small disjunct populations of cryptic and obscure species such as *Drakiessa minor* and *Amphistomus storeyi*, which have poor dispersal capabilities because of their apterous condition are what remains of once larger populations now isolated from each other by subsequent natural or anthropomorphic events? Whilst such scenarios might account for the disjunct distributions of these two insects it is hard to imagine that a large, conspicuous spider such as *Nephila pilipes* has gone undiscovered until now. Could this be an example of an essentially tropical species extending its range southward as a consequence of a warming climate? Future work on the invertebrate fauna of the Upper Lockyer Valley might well shed further light on these intriguing questions.

A healthy invertebrate fauna is the basis of a healthy ecosystem as invertebrates form the basis of the ecological pyramid. Conversely some invertebrates especially, but not exclusively those of an exotic origin can often give rise to serious economic or public health situations. It is, therefore, of great importance that a sound knowledge of the invertebrate fauna of any area be acquired. Dr. Monteith was very impressed by the insect fauna of the remnant wet vine scrubs of the Upper Lockyer Valley especially of the species discussed above. He is very interested in returning in the spring and early summer to do follow up work on the dung beetle fauna at Sawpit Gully and in other similar vegetation types. He would also be keen to extend his research into other communities such as the tall eucalypt woodlands of the area. This last vegetation type was not visited during the survey in question. There has also been interest by an additional entomologist and a malacologist to assist in survey work on the Diptera (flies) and the native land snails of the Upper Lockyer. Dr. Burwell, Wesley Jenkinson and the author are also interested in furthering their research in the area.

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