

Southern Alps Bush Blitz
Coleoptera (beetles) surveyed

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Nomenclature and taxonomy used in this report is consistent with:

The Australian Faunal Directory (AFD)

<http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/home>

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List of contributors

List of contributors to this report.			
Name	Institution/affiliation	Qualifications/area of expertise	Level/form of contribution
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Abstract

1575 (+/-5) specimens of Coleoptera were collected of 378 (+/-5) species. Various collecting methods were employed, but particularly grasstuffing and sweeping/beating foliage. The species diversity of the sample is dominated by Chrysomelidae (leaf beetles) = 87spp, Staphylinidae (rove beetles) = 49spp, Curculionidae (true weevils) = 42spp, and Scarabaeidae (scarabs) = 27spp. Flightless beetles at high elevation were particularly targeted, especially in groups Adeliini (adeliine darkling beetles), Chrysomelinae (chrysomeline leaf beetles) and Carabidae (ground beetles).

1. Introduction

Coleoptera dominate most terrestrial habitats in Australia in diversity of species. Estimates of total number of species in Australia vary widely but it is generally considered to be around 80,000. Any ecological survey in Australia will find many species of Coleoptera.

Climate change is arguably most threatening to montane ecosystems. Montane insects are often flightless local endemics and unable to mountain hop, therefore, with predicted climate warming, are likely to be early victims of this change. However the montane Coleoptera fauna of the Southern Alps is not well-known, with many species awaiting description and many new species being found during recent surveys by myself and colleagues.

My taxonomic expertise includes two beetle groups known to be speciose on mountains, with many flightless species and high local endemicity, Adeliini and Chrysomelinae, so they were the focus of my study. A few beetle specimens were casually collected by other members of the Bush Blitz expedition.

The Southern Alps Bush Blitz provided an opportunity to access a remote part of the Alps for which there were few or no records of these groups. I also sampled much lower areas of the Kosciuszko NP for comparison.

2. Methods

2.1 Site selection

Sites were selected based on availability thru the Bush Blitz team (e.g. helicoptering) and prioritising access to a range of high elevation sites. A range of other sites were selected based on sampling a wide spread of elevations in the National Park. The accommodation site, outside the National Park but including some seminatural woodland, was also sampled.

2.2 Survey techniques

Beating, sweeping and hand picking were used to sample beetles from foliage. 'Grasstuffing' - pulling up growing small ground plants and shaking them over a sheet - was used to obtain ground dwelling beetles, many of which are nocturnal, hiding in the ground layer during the day. Other specimens were found casually under bark, at light and in water.

2.2.1 Methods used at standard survey sites

Standard survey sites were not sampled.

2.3 Identifying the collections

All Coleoptera have been sorted to species and where possible identified by myself.

3. Results and Discussion

Appendix 1 lists all 378 species of Coleoptera recorded during the Bush Blitz. Collections made during this Bush Blitz will result in 1575 (+/-5) specimens being added to public collections and an as yet unknown number of records being added to publicly accessible databases.

3.1 Un-named or not formalised taxa

Taxon	Comment
Coleoptera	It would take many years to identify and name every species collected. Therefore species are listed as code numbers under each family name, with a few being named where that species name is obvious.

3.2 Putative new species (new to science)

In this report, 'putative new species' means an unnamed species that, as far as can be ascertained, was identified as a new species as a direct result of this Bush Blitz.

Species	Comment
Adeliini - 2 new species	certainly new flightless short range endemics and a direct result of this Bush Blitz
Chrysomelinae - 3 new species	2 certainly new flightless short range endemics and a direct result of this Bush Blitz 1 new species feeding on Baeckea
there are undoubtedly numerous other new species but I have not had time to work on them	

3.3 Exotic and pest species

Exotic/pest species	Location sighted/observed	Indication of abundance	Comments
Horse	everywhere, from the banks of the Murray River to the summit of The Pilot	dungpiles and damage to water edges	very likely to be a factor in local beetle extinctions through vegetation community change
<i>Chrysolina quadrigemina</i>	Adventist Resort; Thredbo River picnic ground	Sheltering under eucalypt bark, clustered on Hypericum leaves	Long-established biocontrol agent for European Hypericum (the beetle is abundant but clearly doesn't work)

3.4 Threatened species

Nil

3.5 Range extensions

Unable to say at this point in time.

3.6 Genetic information

Nil.

4. Information on species lists

As noted above, there is little point, in the short time available, in trying to provide species names for the vast majority of the 378 species collected. There are no keys and species concepts are unrevised since description for most genera. Some names are provided in Appendix 1 where these are obvious, and genera are identified for all target taxa in Adeliini and Chrysomelinae.

5. Information for land managers

The Pilot seems to have its own endemic flightless species of beetle on its summit. It is therefore alarming to see the amount of horse dung on that summit, indicating considerable disturbance to the vegetation.

6. Other significant findings

Still to be worked out.

7. Conclusions

There are still many new species of Coleoptera to be found in the Southern Alps. There are almost certainly local endemics on the isolated peaks in the Southern Alps, for example The Pilot. Further work in the area would clarify this point.

Acknowledgements

Thanks to the Bush Blitz team, to the helicopter pilots and to the National Parks staff for the organisation of this survey. Thanks also to the colleagues on the Bush Blitz who provided specimens and the good natured camaraderie back at the ranch.

Appendix 1. List of Coleoptera recorded during the Southern Alps Bush Blitz							
Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
Aderidae	1			unknown	no	no	no
Anthicidae	1						
	2						
	3						
Anthribidae	1		fungus weevils				
Attelabidae	1						
Belidae	1						
	2						
	3						
	4						
	5						
Bothrideridae	1						
Buprestidae	1		jewel beetles				
	2						
	3						
	4						
	5						
	6						
	7						
Byrrhidae	1						
Cantharidae	1		soldier beetles				
	2						
	3						
	4						
	5						
	6						
Carabidae	1		ground beetles				
	2						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	3						
	4						
	5						
	6						
	7						
	8	Scopodes sp 1					
	9	Scopodes sp 2					
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
Cerambycidae	1		longhorn beetles				
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	14						
Chrysomelidae: Cryptocephalinae	1		leaf beetles				
	2	Cadmus litigiosus					
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10	Ditropidus sp 1					
	11	Ditropidus sp 2					
	12	Ditropidus sp 3					
	13	Ditropidus sp 4					
	14	Ditropidus sp 5					
	15	Ditropidus sp 6					
	16	Ditropidus sp 7					
	17	Aprionota sp					
	18	Ditropidella sp					
Chrysomelidae: Eumolpinae	19	Edusa sp 1					
	20	Edusa sp 2					
	21	Edusa sp 3					
	22	Eboo sp 1					
	23	Eboo sp 2					
	24	Eboo sp 3					
	25	Eboo sp 4					
Chrysomelidae: Chrysomelinae	26	Chalcolampra walgalu					
	27	Chalcolampra sp					
	28	Geomela sp					
	29	Ethomela sp 1					

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	30	Ethomela sp 2		new species			
	31	Ethomela sp 3		new species			
	32	Ethomela podagrosa					
	33	Paropsisterna sp 1					
	34	Paropsisterna sp 2					
	35	Paropsisterna obliterata					
	36	Paropsisterna sp 3					
	37	Paropsisterna m-fuscum					
	38	Paropsisterna agricola					
	39	Paropsisterna hectica					
	40	Paropsisterna sp 4					
	41	Paropsisterna cloelia					
	42	Paropsisterna sp 5					
	43	Paropsisterna sp 6					
	44	Trachymela sp 1					
	45	Trachymela sp 2					
	46	Trachymela sp 3					
	47	Trachymela sp 4					
	48	Trachymela sp 5					
	49	Trachymela sp 6					
	50	Trachymela sp 7					
	51	Peltoschema sp 1					
	52	Peltoschema sp 2					
	53	Peltoschema sp 3					
	54	Peltoschema sp 4					
	55	Peltoschema sp 5					
	56	Paropsis pictipennis					
	57	Paropsis porosa					
	58	Paropsis atomaria					
	59	Paropsis charybdis					

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	60	Paropsis variolosa					
	61	Calomela bartoni					
	62	Calomela vittata					
	63	Calomela curtisii					
	64	Faex sp					
	65	Paropsides umbrosa					
	66	Paropsides sp 1		new species			
	67	Chrysolina quadrigemina					exotic species
	68	Dicranosterna immaculatum					
Chrysomelidae: Galerucinae	69	Sutrea sp					
	70	Arsipoda sp 1					
	71	Arsipoda sp 2					
	72	Arsipoda sp 3					
	73	Arsipoda sp 4					
	74	Chaetocnema sp 1					
	75	Chaetocnema sp 2					
	76	Microdonacia grevillea					
	77	Microdonacia sp					
	78	Microdonacia incerta					
	79	Monolepta sp 1					
	80	Monolepta sp 2					
	81	Monolepta sp 3					
	82	Monolepta sp 4					
	83	Monolepta sp 5					
	84	Monolepta sp 6					
	85	Monolepta sp 7					
	86	Monolepta sp 8					
	87	Metrioidea sp					
Cleridae	1						
	2						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
Coccinellidae	1	Cleobora mellyi	ladybirds				
	2	Harmonia conformis					
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
Corylophidae	1						
	2						
	3						
	4	Periptyctus					
Cryptophagidae	1						
Cupedidae	1	Distocupes varians					
Curculionidae	1		true weevils				
	2						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
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	15						
	16						
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	26						
	27						
	28						
	29						
	30						
	31						
	32						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	33						
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
Dermestidae	1						
Dytiscidae	1		water beetles				
	2						
	3						
	4						
Elateridae	1		click beetles				
	2						
	3						
	4						
	5						
	6						
	7						
	8						
Eucinetidae	1						
Hydrophilidae	1						
	2						
	3						
	4						
Latridiidae	1						
	2						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	3						
Leiodidae	1						
	2						
	3						
Lucanidae	1	Lamprima aurata	stag beetles				
Lycidae	1						
	2						
	3						
	4						
	5						
Melyridae	1						
	2						
	3						
	4						
	5						
	6						
Mordellidae	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
Nitidulidae	1						
	2						
	3						
Oedemeridae	1						
	2						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
Phalacridae	1						
	2						
	3						
Ptinidae	1						
	2						
Scarabaeidae: Cetoniinae	1	Polystigma punctatum	scarabs				
	2	Microvalgus sp 1					
	3	Microvalgus sp 2					
Scarabaeidae: Scarabaeinae	4						
Scarabaeidae: Aphodiinae	5						
Scarabaeidae: Rutelinae	6	Anoplogathus suturalis					
Scarabaeidae: Dynastinae	7						
	8						
Scarabaeidae: Melolonthinae	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						
	24						
	25						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	26						
	27						
Scirtidae	1						
	2						
	3						
	4						
	5						
Scraptiidae	1						
Silvanidae	1						
	2						
Sphindidae	1						
Staphylinidae	1		Rove beetles	unknown	No	No	no
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
	20						
	21						
	22						
	23						
	24						
	25						
	26						
	27						
	28						
	29						
	30						
	31						
	32						
	33						
	34						
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	41						
	42						
	43						
	44						
	45						
	46						
	47						
	48						
	49						

Family	Species	species name	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State Act)	Exotic/pest
Tenebrionidae: Adeliini	1	Adelium sp 1	darkling beetles				
	2	Adelium sp 2					
	3	Adelium sp 3					
	4	Adelium sp 4					
	5	Cardiothorax australis					
	6	Adelium sp 5					
	7	Isopteron sp 1					
	8	Daedrosis sp 1		new species			
	9	Nolicima sp 1					
	10	Coripera geminata					
	11	Brycopia sp 1		new species			
	12	Apasis sp 1					
	13	Leptogastrus sp 1 (unidentifiable fragment)					
Tenebrionidae: other tribes	14						
	15						
	16						
	17						
Trogidae	1						
	2						
Zopheridae	1						