Australian Capital Territory Bush Blitz

Heteroptera (True Bugs)

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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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Appendix 1: List of Heteroptera recorded in Namadgi National Park (including Bimbiri WIlderness Area), Tidbinbilla Nature Reserve/ Birrigai Outdoor School, and Melrose/Tuggeranong Hill/ Rob Roy Reserves during the Australian Capital Territory Bush Blitz.

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

Over the course of this survey 93 species representing 23 families of Heteroptera were collected from 29 different host plant species. No new species were found in the survey. Collecting was generally poor, mainly due to the prevailing dry conditions and early timing of the survey. We anticipate both greater abundance and higher species diversity would be collected under optimal conditions.

1. Introduction

The ACT has been well-sampled for many groups of insects, in part due to the close proximity of good quality habitat to Canberra and nearby urban areas. This is exemplified by the extensive local holdings of the Australian National Insect Collection. Despite this, there remain several areas within the ACT, most notably at higher elevation, which are hard to access and thus have been little-studied.

The Heteroptera of the ACT have been sampled to some extent, particularly during the 2013 Namadgi Bush Blitz survey to the Australian Capital Territory, where 98 species were found (incl. 29 new species). Prior to commencement of the 2019 ACT Bush Blitz survey, we anticipated the possibility of additional new records for the ACT because of the high taxonomic impediment for the Heteroptera in Australia. This assumption was tempered by the seasonal dependence of heteropterans (incl. abundance), particularly in relation to peak flowering times, which in turn vary from year to year depending on rainfall. As it was quite dry in the lead-up to this survey, we were also prepared for the possibility of suboptimal collecting conditions, with few plants in flower.

2. Methods

2.1 Site selection

A total of 29 sites were sampled over the course of the survey. As the majority of Heteroptera species are strongly affiliated with flowering plants, sites were mostly chosen based on floristic attributes. At a broad scale this was initially done using floral maps, geological maps, and Google Earth, while on the ground sites were selected *ad hoc*, based on the presence of suitable plants, preferably in flower.

2.2 Survey techniques

Specimens were primarily collected by beating vegetation, as this allowed us to link specimens caught with their host plants. Clippings of plants were also taken in order to confirm their identification by herbarium staff, who were present on the survey. Specimens were also collected by hand, via general sweeping, off the water surface, and at night via light trap.

2.2.1 Methods used at standard survey sites

Standard survey sites were sampled via plant beating and sweeping. Due to the small size of the sites and their relatively poor condition (i.e. very dry conditions at SSS2, few plants in flower at either site), the majority of plants present at each site were sampled regardless of condition (flowering or not).

2.3 Identifying the collections

Specimens were identified by eye with reference to pinned collections at UNSW and the WA Museum, and through comparison to photographed museum specimens registered in the Atlas of Living Australia. Where available, published keys were used to derive some identifications. Identifications were undertaken by Dr Gerry Cassis, Professor of Biology, UNSW; Dr Ryan Schofner, Postdoctoral Researcher, UNSW; Dr Nikolai Tatarnic, Curator of Entomology, WAM; and Ms Amelia Gross, University of Notre Dame (USA) student, volunteering at WAM (under supervision of NT).

3. Results and Discussion

Appendix 1 lists all heteropterans collected during the 2019 ACT Bush Blitz survey.

3.1 Un-named or not formalised taxa

A total of 64 un-named taxa were collected. These have been given morphospecies codes pending further taxonomic work.

Table 1. Putatively un-named or not formalised taxa

Taxon	Property
"Austroloxops" sp_BBACT18_msp_087	Tidbinbilla Nature Reserve
Amphaces sp_BBACT18_msp_022	Namadgi National Park
Amphaces sp_BBACT18_msp_049	Tidbinbilla Nature Reserve
Ausejanus sp_BBACT18_msp_028	Tidbinbilla Nature Reserve
Ausejanus sp_BBACT18_msp_028	Woods Reserve
Austrocapsus sp_BBACT18_msp_031	Tidbinbilla Nature Reserve
Austrocapsus sp_BBACT18_msp_050	Namadgi National Park
Austromiris sp_BBACT18_msp_025	Tidbinbilla Nature Reserve
Baclozygum sp_BBACT18_msp_077	Namadgi National Park
Coranus sp_BBACT18_msp_015	Birrigai Outdoor School
Coranus sp_BBACT18_msp_015	Namadgi National Park
Coranus sp_BBACT18_msp_015	Namadgi Wilderness
Coridromius sp_BBACT18_msp_016	Birrigai Outdoor School
Crompus sp_BBACT18_msp_035	Birrigai Outdoor School
Crompus sp_BBACT18_msp_035	Tidbinbilla Nature Reserve
Crompus sp_BBACT18_msp_035	Namadgi Wilderness
Cryptorhamphus sp_BBACT18_msp_073	Tidbinbilla Nature Reserve
Cuspicona sp_BBACT18_msp_024	Namadgi Wilderness
Cuspicona sp_BBACT18_msp_024	Namadgi National Park
Dictyotus sp_BBACT18_msp_075	Australian National Botanic Gardens
Diemenia sp_BBACT18_msp_009	Namadgi Wilderness
Diemenia sp_BBACT18_msp_009	Woods Reserve
Diemenia sp_BBACT18_msp_055	Tidbinbilla Nature Reserve

Dilompus sp_BBACT18_msp_034	Namadgi Wilderness
Dilompus sp_BBACT18_msp_034	Tidbinbilla Nature Reserve
Dilompus sp_BBACT18_msp_034	Woods Reserve
Dilompus sp_BBACT18_msp_034	Namadgi National Park
Dysdercus sp_BBACT18_msp_092	Namadgi National Park
Engynoma sp_BBACT18_msp_090	Namadgi Wilderness
Eupolemus sp_BBACT18_msp_045	Birrigai Outdoor School
Eupolemus sp_BBACT18_msp_045	Namadgi Wilderness
Eupolemus sp_BBACT18_msp_045	Tidbinbilla Nature Reserve
Eupolemus sp_BBACT18_msp_045	Australian National Botanic Gardens
Eupolemus sp_BBACT18_msp_046	Tidbinbilla Nature Reserve
Eupolemus sp_BBACT18_msp_046	Tidbinbilla Nature Reserve
Gelonus sp_BBACT18_msp_076	Namadgi National Park
Germalus sp_BBACT18_msp_063	Australian National Botanic Gardens
Germalus sp_BBACT18_msp_063	Namadgi National Park
Gn_Anthocoridae sp_BBACT18_msp_100	Namadgi National Park
Gn_Berytidae sp_BBACT18_msp_032	Tidbinbilla Nature Reserve
Gn_Cremnorrhinina sp_BBACT18_msp_006	Namadgi Wilderness
Gn_Cremnorrhinina sp_BBACT18_msp_026	Tidbinbilla Nature Reserve
Gn_Cremnorrhinina sp_BBACT18_msp_026	Australian National Botanic Gardens
Gn_Cremnorrhinina sp_BBACT18_msp_078	Namadgi National Park
Gn_Harpactocorinae sp_BBACT18_msp_084	Woods Reserve
Gn_Harpactocorniae sp_BBACT18_msp_074	Australian National Botanic Gardens
Gn_Lethaeini sp_BBACT18_msp_067	Tidbinbilla Nature Reserve
Gn_Myodochini sp_BBACT18_msp_065	Parliament House
Gn_Orthotylini sp_BBACT18_msp_012	Birrigai Outdoor School
Gn_Orthotylini sp_BBACT18_msp_029	Tidbinbilla Nature Reserve
Gn_Orthotylini sp_BBACT18_msp_040	Tidbinbilla Nature Reserve
Gn_Orthotylini sp_BBACT18_msp_080	Namadgi Wilderness
Gn_Pentatominae sp_BBACT18_msp_059	Tidbinbilla Nature Reserve
Gn_Pentatominae sp_BBACT18_msp_059	Namadgi Wilderness
Gn_Phylinae sp_BBACT18_msp_039	Australian National Botanic Gardens
Gn_Phylinae sp_BBACT18_msp_041	Namadgi National Park
Gn_Phylini sp_BBACT18_msp_042	Namadgi National Park
Gn_Phylini sp_BBACT18_msp_091	Namadgi National Park
Gn_Pieratinae sp_BBACT18_msp_097	Woods Reserve
GN_Reduviinae sp_BBACT18_msp_099	Namadgi National Park
Iphicrates sp_BBACT18_msp_021	Namadgi Wilderness
Kirkaldyella sp_BBACT18_msp_030	Tidbinbilla Nature Reserve

Mcateella sp_BBACT18_msp_010	Birrigai Outdoor School
Melanacanthus sp_BBACT18_msp_081	Namadgi National Park
Nabis sp_BBACT18_msp_070	Parliament House
Nerthra sp_BBACT18_msp_083	Namadgi National Park
Nysius sp_BBACT18_msp_004	Namadgi Wilderness
Oncocoris sp_BBACT18_msp_058	Tidbinbilla Nature Reserve
Oncocoris sp_BBACT18_msp_058	Namadgi National Park
Oncocoris sp_BBACT18_msp_058	Woods Reserve
Oxycarenus sp_BBACT18_msp_064	Parliament House
Oxycarenus sp_BBACT18_msp_064	Australian National Botanic Gardens
Palassocoris sp_BBACT18_msp_033	Birrigai Outdoor School
Palassocoris sp_BBACT18_msp_033	Tidbinbilla Nature Reserve
Physatocheila sp_BBACT18_msp_017	Namadgi Wilderness
Pontanus sp_BBACT18_msp_003	Namadgi Wilderness
Ptilocnemus sp_BBACT18_msp_094	Birrigai Outdoor School
Rayeria sp_BBACT18_msp_085	Australian National Botanic Gardens
Sciomenida sp_BBACT18_msp_088	Namadgi Wilderness
Sciomenida sp_BBACT18_msp_088	Namadgi National Park
Stauralia sp_BBACT18_msp_005	Namadgi Wilderness
Stauralia sp_BBACT18_msp_005	Namadgi National Park
Stauralia sp_BBACT18_msp_051	Namadgi National Park
Stenolemus sp_BBACT18_msp_007	Parliament House
Tepperocoris sp_BBACT18_msp_082	Namadgi National Park
Tholosanus sp_BBACT18_msp_008	Namadgi Wilderness
Trilaccus sp_BBACT18_msp_043	Tidbinbilla Nature Reserve
Ulonemia sp_BBACT18_msp_001	Namadgi Wilderness
Ulonemia sp_BBACT18_msp_001	Namadgi National Park

3.2 Putative new species (new to science)

In Bush Blitz III reporting, ‘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.

No new heteropteran species were found.

Table 2. Putative new species (new to science)	
Species	**Comment**
N/A	

3.3 Exotic and pest species

Table 3. Exotic and pest species recorded			
Exotic/pest species	**Location sighted/observed**	**Indication of abundance**	**Comments**
N/A			

3.4 Threatened species

Because our baseline knowledge of most invertebrates - including the Heteroptera - is so poor, at this time we are unable to comment on the conservation status of any of the species collected during this survey.

Table 4. Threatened species			
Species	**Listing status and level (EBPC, State/Territory)**	**Location sighted/observed**	**Indication of abundance**
N/A			

3.5 Range extensions

Due to the paucity of baseline data, we cannot make any meaningful comment on any range extensions at this time.

Table 5. Range extensions or significant infill in distribution records for species			
Species	**Location sighted/observed**	**Distance from nearest known record (km)**	**Comments**
N/A			

3.6 Genetic information

While none of the specimens collected during this survey have been sequenced, a subset of specimens has been placed in 100% ethanol in the freezers at the WA Museum and at UNSW for long-term storage and future molecular study.

4. Information on species lists

The species list from the prior ACT Bush Blitz trip in 2013 provides a baseline to compare with the current survey. The lists are highly similar, with expected variations in some species identity, and the only major deviation being the decreased diversity of mirids compared to the 2013 survey.

5. Information for land managers

Based on this survey we can provide no specific land management recommendations. We note, however, that insect conservation is generally best-achieved through the conservation of native flora. Thus, protecting the native plants (which are relatively well-known in Australia) will provide some coverage for plant associated heteropterans.

6. Other significant findings

No other significant findings were reported.

7. Conclusions

The survey yielded 93 morphospecies of true bugs from 23 different families. Diversity was likely negatively impacted due to dry conditions, but is in line with what was expected for the region. No putatively new species were found, and no introduced or pestiferous taxa were collected.

Acknowledgements

We wish to thank the staff at Birrigai Outdoor School, the Teach Live teachers, Bush Blitz staff, and everyone else who helped to make this a successful Bush Blitz. We also thank WA Museum volunteer Amelia Gross, who photographed specimens from the survey and assisted with species identifications.

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Appendix 1. List of Heteroptera recorded in Tidbinbilla Nature Reserve, Namadgi National Park, Namadgi Wilderness Area, Woods Reserve, Australian National Botanical Gardens, Parliament House, and Birrigai Outdoor School.

Family	Species	Record type*	Tidbinbilla Nature Reserve	Namadgi National Park	Namadgi Wilderness	Woods Reserve	ANBG	Parliament House	Birrigai Outdoor School
Acanthosomatidae	Amphaces sp_BBACT18_msp_022	S		X					
Acanthosomatidae	Amphaces sp_BBACT18_msp_049	S, G	X						
Acanthosomatidae	Eupolemus insularis	S, G	X		X		X		X
Acanthosomatidae	Eupolemus sp_BBACT18_msp_045	S, G	X		X		X		X
Acanthosomatidae	Eupolemus sp_BBACT18_msp_046	S	X						
Acanthosomatidae	Eupolemus venustulus	S		X	X				
Acanthosomatidae	Panaetius lobulatus	S, G		X					
Acanthosomatidae	Stauralia sp_BBACT18_msp_005	S		X	X				
Acanthosomatidae	Stauralia sp_BBACT18_msp_051	S		X					
Alydidae	Melanacanthus sp_BBACT18_msp_081	S, G		X					
Alydidae	Mutusca brevicornis	S		X	X				
Anthocoridae	Gn_Anthocoridae sp_BBACT18_msp_100	S, G		X					
Artheneidae	Dilompus sp_BBACT18_msp_034	S	X	X	X	X			
Beritidae	Gn_Berytidae sp_BBACT18_msp_032	S	X						
Blissidae	Iphicrates sp_BBACT18_msp_021	S			X				
Coreidae	Gelonus sp_BBACT18_msp_076	S, G		X					
Coreidae	Gelonus tasmanicus	S, G	X						
Cryptorhamphidae	Cryptorhamphus sp_BBACT18_msp_073	S, G	X						
Gelastocoridae	Nerthra sp_BBACT18_msp_083	S, G		X					
Geocoridae	Germalus sp_BBACT18_msp_063	S, G		X			X		
Lygaeidae	Crompus opacus	S, G	X	X	X	X			X
Lygaeidae	Crompus sp_BBACT18_msp_035	S, G	X		X				X
Lygaeidae	Nysius sp_BBACT18_msp_004	S			X				
Miridae	"Austroloxops" sp_BBACT18_msp_087	S, G	X						
Miridae	Ausejanus sp_BBACT18_msp_028	S	X			X			
Miridae	Austrocapsus sp_BBACT18_msp_031	S, G	X						
Miridae	Austrocapsus sp_BBACT18_msp_050	S		X					
Miridae	Austromiris sp_BBACT18_msp_025	S, G	X						
Miridae	Coridromius sp_BBACT18_msp_016	S							X
Miridae	Gn_Cremnorrhinina sp_BBACT18_msp_006	S			X				
Miridae	Gn_Cremnorrhinina sp_BBACT18_msp_026	S	X				X		
Miridae	Gn_Cremnorrhinina sp_BBACT18_msp_078	S, G		X					
Miridae	Gn_Orthotylini sp_BBACT18_msp_012	S							X
Miridae	Gn_Orthotylini sp_BBACT18_msp_029	S	X						
Miridae	Gn_Orthotylini sp_BBACT18_msp_040	S	X						
Miridae	Gn_Orthotylini sp_BBACT18_msp_080	S, G			X				
Miridae	Gn_Phylinae sp_BBACT18_msp_039	S					X		

Family	Species	Record type*	Tidbinbilla Nature Reserve	Namadgi National Park	Namadgi Wilderness	Woods Reserve	ANBG	Parliament House	Birrigai Outdoor School
Miridae	Gn_Phylinae sp_BBACT18_msp_041	S		X					
Miridae	Gn_Phylini sp_BBACT18_msp_042	S, G		X					
Miridae	Gn_Phylini sp_BBACT18_msp_091	S		X					
Miridae	Kirkaldyella sp_BBACT18_msp_030	S	X						
Miridae	Palassocoris sp_BBACT18_msp_033	S	X						X
Miridae	Pseudopantilius australis	S, G				X			
Miridae	Rayeria sp_BBACT18_msp_085	S					X		
Miridae	Trilaccus sp_BBACT18_msp_043	S	X						
Nabidae	Nabis sp_BBACT18_msp_070	S						X	
Oxycarenidae	Oxycarenus sp_BBACT18_msp_064	S					X	X	
Pachygronthidae	Stenophyella macreta	S, G	X						
Pentatomidae	Commius elegans	S, G		X					
Pentatomidae	Cuspicona apotheracica	S, G	X		X		X		
Pentatomidae	Cuspicona simplex	S, G					X		
Pentatomidae	Cuspicona sp_BBACT18_msp_024	S, G		X	X				
Pentatomidae	Cuspicona strenuella	S, G	X	X		X			
Pentatomidae	Diemenia sp_BBACT18_msp_009	S, G			X	X			
Pentatomidae	Diemenia sp_BBACT18_msp_055	S	X						
Pentatomidae	Gn_Pentatominae sp_BBACT18_msp_059	S, G	X		X				
Pentatomidae	Notius depressus	S, G	X		X				
Pentatomidae	Ocirrhoe unimaculata	S			X				
Pentatomidae	Ocirrhoe wilsoni	S		X	X				
Pentatomidae	Omyta centrolinata siccior	S, G					X		
Pentatomidae	Oncocoris geniculatus	S, G		X			X		
Pentatomidae	Oncocoris sp_BBACT18_msp_058	S, G	X	X		X			
Pentatomidae	Poecilometis strigatus	S, G					X		
Pentatomidae	Sciomenida sp_BBACT18_msp_088	S		X	X				
Pentatomidae	Tepperocoris sp_BBACT18_msp_082	S, G		X					
Pentatomidae	Tholosanus sp_BBACT18_msp_008	S			X				
Piesmatidae	Mcateella sp_BBACT18_msp_010	S, G							X
Pyrrhocoridae	Dindymus versicolor	S		X				X	
Pyrrhocoridae	Dysdercus sp_BBACT18_msp_092	S		X					
Reduviidae	Coranus sp_BBACT18_msp_015	S		X	X				X
Reduviidae	Dicrotelus prolixa	S				X		X	
Reduviidae	Dictyotus sp_BBACT18_msp_075	S, G					X		
Reduviidae	Gn_Harpactocorinae sp_BBACT18_msp_084	S, G				X			
Reduviidae	Gn_Harpactocorniae sp_BBACT18_msp_074	S, G					X		
Reduviidae	Gn_Pieratinae sp_BBACT18_msp_097	S, G				X			
Reduviidae	GN_Reduviinae sp_BBACT18_msp_099	S		X					
Reduviidae	Ptilocnemus sp_BBACT18_msp_094	S, G							X
Reduviidae	Stenolemus sp_BBACT18_msp_007	S, G						X	

Family	Species	Record type*	Tidbinbilla Nature Reserve	Namadgi National Park	Namadgi Wilderness	Woods Reserve	ANBG	Parliament House	Birrigai Outdoor School
Rhyparochromidae	Gn_Lethaeini sp_BBACT18_msp_067	S	X						
Rhyparochromidae	Gn_Myodochini sp_BBACT18_msp_065	S						X	
Thaumastocoridae	Baclozygum sp_BBACT18_msp_077	S, G		X					
Tingidae	Engynoma sp_BBACT18_msp_090	S			X				
Tingidae	Engynoma tasmaniae	S	X						
Tingidae	Malandiola semota	S, G							X
Tingidae	Nethersia magna	S		X					
Tingidae	Physatocheila sp_BBACT18_msp_017	S, G			X				
Tingidae	Pontanus sp_BBACT18_msp_003	S, G			X				
Tingidae	Stephanitis rhododendri	S						X	
Tingidae	Ulonemia burckhardti	S, G		X	X		X		
Tingidae	Ulonemia sp_BBACT18_msp_001	S, G		X	X				
Veliidae	Microvelia (Pacificovelia) oceanica	S, G		X					
Veliidae	Nesidovelia fluvialis	S, G		X					
Veliidae	Nesidovelia peramoena	S		X					