

Bush Blitz of the Heteroptera of Little Desert, Victoria

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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

The Bush Blitz survey of the Little Desert, Victoria, resulted in the collection of 59 species of Heteroptera, of which 8 are putatively new to science. Several species are also known from collections yet remain to be described. 10 families of Heteroptera were collected, with the greatest species richness occurring in the family Miridae with a total of 28 species.

Specimens were collected by beating vegetation, hand collecting and from light sheet collection at night. Specimens were collected from 10 localities and 21 hosts.

1. Introduction

Australian Heteroptera comprises over 2500 described species (Australian Faunal Directory). Bush Blitz Phase 1 surveys revealed 1391 Heteropteran species, of which 391 are new to science. Prof. Cassis and Prof. Laffan predicated there are approximately 6500 Australian heteropteran species, in their report to the ABRS on Bush Blitz Phase 1.

The Little Desert Bush Blitz survey consisted of a collaboration between Prof. Cassis and Arlee McMahan of the University of New South Wales (UNSW). This survey focused on the discovery of plant-associated heteropteran taxa, using survey methods employed in Bush Blitz phases 1 and 2. This report documents the third survey of the Little Desert National Park by a member of the Cassis Laboratory. Prof. Cassis conducted sampling in the Little Desert in 1995 and 2002.

2. Methods

2.1 Site selection

A total of 10 sites were surveyed over the four-day period. Full descriptions of the sites are included in the attached Point Data spreadsheet.

Sites were selected primarily on vegetation present including the presence of flowering vegetation and known plant hosts.

2.2 Survey techniques

Specimens were collected in three main ways:

1. Beating of vegetation using a beating sheet and pole: Vegetation was beaten to dislodge specimens, which were collected from the beating sheet using a pooter.
2. Collection at light sheet: One Lepi-LED light (<http://www.gunnarbrehm.de/en/contact.html>) was suspended in front of a white sheet stretched flat between two trees. Specimens were collected off the sheet using falcon tubes and/or a pooter. The light sheet was set up at base camp (Nhillbilly Farm) on four nights, in similar positions each night.
3. Hand collecting: Insects were captured by hand or with a collecting jar/falcon tube from vegetation, the ground and rocks.

2.2.1 Methods used at standard survey sites

Techniques used at the standard survey sites included beating of vegetation and hand collecting.

Vegetation was beaten for 1 hour by each scientist, and specimens collected using a beating sheet and pooter. The number of specimens collected was influenced by the season of collection, and the lack of flowering vegetation present at the sites.

2.3 Identifying the collections

Prof. Gerry Cassis of UNSW and Arlee McMahan of UNSW identified specimens with reference to the Cassis Laboratory collections, as well as in consultation with the heteropteran literature. Nomenclature is in alignment with the Heteroptera section of the Australian Faunal Directory.

3. Results and Discussion

Appendix 1 lists all Heteroptera recorded during the Little Desert Bush Blitz. Collections made during this Bush Blitz will result in 226 specimens being added to public collections and an equivalent number of records added to publicly accessible databases.

3.1 Un-named or not formalised taxa

Table 1. Putatively un-named or not formalised taxa		
Family	Species	Comment
Acanthosomatidae	<i>Duadicus</i> sp_BBLDDUAD001_msp.023	
Acanthosomatidae	<i>Eupolemus</i> sp_BBLDEUP001_msp.035	
Coreidae	<i>Agriopocoris</i> sp_BBLDAGRI001_msp.045	
Lygaeidae	<i>Crompus</i> sp_BBLDCROM001_msp.020	
Lygaeidae	<i>Euryngysius</i> sp_BBLDORTHO001_msp.015	
Miridae	<i>Campylomma</i> sp_BBLDCAMP001_msp.032	
Miridae	Gn_Exaertini_LD001 sp_BBLDEXAE001_msp.018	
Miridae	Gn_Melaulocodies_LD001 sp_BBLDMELA002_msp.042	
Miridae	Gn_nr. Melalucoides_LD001 sp_BBLDMELA001_msp.027	
Miridae	Gn_nr. Palassocoris_LD001 sp_BBLDPALAS001_msp.026	
Miridae	Gn_Orthotylinae_LD001 sp_BBLDORTHO002_msp.021	
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO001_msp.009	
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO003_msp.028*	
Miridae	Gn_Orthotylini_LD002 sp_BBLDORTHO004_msp.031	
Miridae	<i>Myrtlemiris</i> sp_BBLDORTH007_msp.037	
Miridae	<i>Kirkaldyella</i> sp_BBLDKIRK001_msp.038	
Miridae	Gn_Phylinae_LD003 sp_BBLADPHYL003_msp.039	
Miridae	<i>Pseudopantillius</i> sp_BBLDMIRI002_msp.047	
Miridae	Gn_Orthotylini_LD0056 sp_BBLDORTH006_msp.033	
Miridae	Gn_nr. Melalucoides_LD001 sp_BBLDMELA001_msp.027	
Miridae	Gn_Orthotylini_LD005 sp_BBLDORTH005_msp.032	
Miridae	Gn_Zanchiini_LD001 sp_BBLDZANC001_msp.030	
Miridae	<i>Myrtlemiris</i> sp_BBLDMYRT002_msp.040	
Miridae	Gn_Phylinae_LD004 sp_BBLADPHYL004_msp.049	
Miridae	Gn_Exaertini_LD001 sp_BBLDEXAE001_msp.018	
Miridae	<i>Phyllofulvius</i> sp_BBLDCYLAP001_msp.008	
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO001_msp.009	
Miridae	Gn_Orthotylini_LD007 sp_BBLDORTH007_msp.034	
Miridae	Gn_Melaulocodies_LD001 sp_BBLDMELA002_msp.042	
Miridae	Gn_Phylinae_LD002 sp_BBLDPHYL002_msp.037	
Pentatomidae	<i>Cuspicona</i> sp_BBLDCUSP001_msp.022	
Pentatomidae	<i>Cuspicona</i> sp_BBLDCUSP002_msp.044	

Pentatomidae	<i>Aglaophon</i> sp_BBLDAGLA001_msp.010	
Pentatomidae	<i>Poecilotoma</i> sp_BBLDPOEC001_msp.029	
Pentatomidae	<i>Dictyotus</i> sp_BBLDDICT001_msp.015	
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.001	
Reduviidae	Gn_Harpactocorinae_LD003 sp_BBLDHARP003_msp.046	
Reduviidae	Gn_Stenopidinae_LD001 sp_BBLDSTEN001_msp.092	
Reduviidae	Gn_Harpactocorinae_LD002 sp_BBLDREDU002_msp.043	
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.002	
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.003	
Reduviidae	<i>Oncocephalus</i> sp_BBLDONCO001_msp.011	
Reduviidae	<i>Peirates</i> sp_BBLDREDU002_msp.012	
Reduviidae	Gn_Stenopaidinae_LD001 sp_BBLDSTENO001_msp.033	
Rhyparochromidae	Gn_Myodochini_LD001 sp_BBLDMYOD001_msp.014	
Rhyparochromidae	Gn_Udeocoini_LD001 sp_BBLDUDE001_msp.001	
Rhyparochromidae	Gn_Rhyparochromidae_LD001 sp_BBLDRHYP001_msp.002	
Rhyparochromidae	<i>Remauderiana</i> sp_BBLDMYOD001_msp.006	
Rhyparochromidae	Gn_Myodochini_LD002 sp_BBLDMYOD002_msp.036	
Tingidae	<i>Eritingis</i> sp_BBLDERIT001_msp.024	

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.

Family	Species	Comment
Miridae	<i>Zanessa</i> sp_BBLDZANE001_msp.025	One specimen only
Miridae	<i>Myrtlemiris</i> sp_BBLDMYRT002_msp.048	
Miridae	Gn_nr. Palassocoris_LD001 sp_BBLDPALAS001_msp.026	
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO003_msp.128	One specimen only
Miridae	<i>Austromiris</i> sp_BBLDAUST003_msp.041	One specimen only
Miridae	<i>Austromiris</i> sp_BBLDORTHO001_msp.013	One specimen only
Tingidae	<i>Nethersia</i> sp_BBLDNETH001_msp.016	
Rhyparochromidae	Gn_Myodochini_LD001 sp_BBLDMYOD001_msp.014	

3.3 Exotic and pest species

Exotic/pest species	Location sighted/observed	Indication of abundance	Comments
<i>Nysius vinitor</i>	(L3) Base Camp: Nhillbilly Farm	High hundreds to thousands	Observed at light sheet. Higher abundance on warmer nights.
<i>Creontiades dilutus</i>	(L3) Base Camp: Nhillbilly Farm	<100	Low abundance at light sheet.

3.4 Threatened species

No threatened species were encountered.

3.5 Range extensions

While the Cassis Lab has many specimens from previous Little Desert collection trips, specimens have not been fully identified and databased to provide evidence of range extensions.

3.6 Genetic information

Most taxa collected were subsamples into 100% ethanol for future molecular analyses. Samples are stored in the Cassis Lab, UNSW.

4. Information on species lists

The Heteroptera section of the Australian Faunal Directory was used to compile the species list that accompanies this report.

5. Information for land managers

Sites in which new species were collected are of conservation interest. More collecting is necessary to provide recommendations for land managers about species ranges, host specificity and whether taxa are endemic and/or rare.

6. Other significant findings

All notable and unexpected findings have been described above.

7. Conclusions

The Bush Blitz survey of Little Desert resulted in the discovery of 59 species of Heteroptera, from 10 families and 10 localities. Of these species, 8 are recognised as putatively new to science.

Acknowledgements

The ABRS is greatly thanked for their funding and logistical support in running this survey. We acknowledge that this survey was conducted on the ancestral lands of the Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Jupagulk peoples.

References

References are given in the Heteroptera section of the Australian Faunal Directory.

Appendix 1. List of Heteroptera recorded during the Little Desert Bush Blitz						
Family	Species	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State / Territory Act)	Exotic / pest
Acanthosomatidae	Duadicus sp_BBLDDUAD001_msp.023		No	No	No	No
Acanthosomatidae	Eupolemus sp_BBLDEUP001_msp.035		No	No	No	No
Coreidae	Agriopocoris sp_BBLDAGRI001_msp.045		No	No	No	No
Lygaeidae	Crompus sp_BBLDCROM001_msp.020		No	No	No	No
Lygaeidae	Eurynysius sp_BBLDORTHO001_msp.015		No	No	No	No
Lygaeidae	Nysius vinitor	Rutherglen Bug	No	No	No	Yes
Miridae	Austromiris sp_BBLDAUST003_msp.041		Yes	No	No	No
Miridae	Austromiris sp_BBLDORTHO001_msp.013		Yes	No	No	No
Miridae	Austromiris viridissimus		No	No	No	No
Miridae	Campylomma sp_BBLDCAMP001_msp.032		No	No	No	No
Miridae	Creontiades dilutus	Green Mirid	No	No	No	Yes
Miridae	Gn_Exaertini_LD001 sp_BBLDEXAE001_msp.018		No	No	No	No
Miridae	Gn_Melaulocodies_LD001 sp_BBLDMELA002_msp.042		No	No	No	No
Miridae	Gn_nr. Melalucoides_LD001 sp_BBLDMELA001_msp.027		No	No	No	No
Miridae	Gn_nr. Palassocoris_LD001 sp_BBLDPALAS001_msp.026		Yes	No	No	No
Miridae	Gn_Orthotylinae_LD001 sp_BBLDORTHO002_msp.021		No	No	No	No
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO001_msp.009		No	No	No	No
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO003_msp.028		No	No	No	No
Miridae	Gn_Orthotylini_LD001 sp_BBLDORTHO003_msp.128		Yes	No	No	No
Miridae	Gn_Orthotylini_LD002 sp_BBLDORTHO004_msp.31		No	No	No	No
Miridae	Gn_Orthotylini_LD005 sp_BBLDORTHO05_msp.032		No	No	No	No
Miridae	Gn_Orthotylini_LD0056 sp_BBLDORTHO06_msp.033		No	No	No	No
Miridae	Gn_Orthotylini_LD007 sp_BBLDORTHO07_msp.034		No	No	No	No
Miridae	Gn_Phylinae_LD002 sp_BBLDPHYL002_msp.037		No	No	No	No
Miridae	Gn_Phylinae_LD003 sp_BBLADPHYL003_msp.039		No	No	No	No
Miridae	Gn_Phylinae_LD004 sp_BBLADPHYL004_msp.049		No	No	No	No
Miridae	Gn_Zanchiini_LD001 sp_BBLDZANC001_msp.030		No	No	No	No
Miridae	Kirkaldyella sp_BBLDKIRK001_msp.038		No	No	No	No

Family	Species	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State / Territory Act)	Exotic / pest
Miridae	Myrtlemiris sp_BBLDMYRT002_msp.040		No	No	No	No
Miridae	Myrtlemiris sp_BBLDMYRT002_msp.048		Yes	No	No	No
Miridae	Myrtlemiris sp_BBLDORTH007_msp.037		No	No	No	No
Miridae	Phyllfulvius sp_BBLDCYLAP001_msp.008		No	No	No	No
Miridae	Pseudopantilius sp_BBLDMIRI002_msp.047		No	No	No	No
Miridae	Zanessa sp_BBLDZANE001_msp.025		Yes	No	No	No
Nabidae	Nabis kinbergii		No	No	No	No
Pentatomidae	Aglaophon sp_BBLDAGLAO001_msp.010		No	No	No	No
Pentatomidae	Cuspicona simplex		No	No	No	No
Pentatomidae	Cuspicona sp_BBLDCUSP001_msp.022		No	No	No	No
Pentatomidae	Cuspicona sp_BBLDCUSP002_msp.044		No	No	No	No
Pentatomidae	Dictyotus sp_BBLDDICT001_msp.015		No	No	No	No
Pentatomidae	Poecilotoma sp_BBLDPOEC001_msp.029		No	No	No	No
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.001		No	No	No	No
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.002		No	No	No	No
Reduviidae	Gn_Harpactocorinae_LD001 sp_BBLADHARP001_msp.003		No	No	No	No
Reduviidae	Gn_Harpactocorinae_LD002 sp_BBLDREDU002_msp.043		No	No	No	No
Reduviidae	Gn_Harpactocorinae_LD003 sp_BBLDHARP003_msp.046		No	No	No	No
Reduviidae	Gn_Stenopaidinae_LD001 sp_BBLDSTENO001_msp.033		No	No	No	No
Reduviidae	Gn_Stenopidinae_LD001 sp_BBLDSTEN001_msp.092		No	No	No	No
Reduviidae	Oncocephalus sp_BBLDONCO001_msp.011		No	No	No	No
Reduviidae	Peirates sp_BBLDREDU002_msp.012		No	No	No	No
Rhyparochromidae	Gn_Cleradini_LD001 sp_BBLDCLER001_msp.007		No	No	No	No
Rhyparochromidae	Gn_Myodochini_LD001 sp_BBLDMYOD001_msp.014		Yes	No	No	No
Rhyparochromidae	Gn_Myodochini_LD002 sp_BBLDMYOD002_msp.036		No	No	No	No
Rhyparochromidae	Gn_Rhyparochromidae_LD001 sp_BBLDRHYP001_msp.002		No	No	No	No
Rhyparochromidae	Gn_Udeocoini_LD001 sp_BBLDUDE001_msp.001		No	No	No	No
Rhyparochromidae	Remauderiana sp_BBLDMYOD001_msp.006		No	No	No	No
Scutelleridae	Choerocoris paganus		No	No	No	No
Tingidae	Eritingis sp_BBLDERIT001_msp.024		No	No	No	No

Family	Species	Common name	Putative new species	Threatened (EPBC Act)	Threatened (State / Territory Act)	Exotic / pest
Tingidae	Nethersia sp_BBLDNETH001_msp.016		Yes	No	No	No