

NATIONAL TAXONOMY FORUM

PROGRAMME 2007

TIME

PROGRAMME

DAY I — THURSDAY 4 OCTOBER

Morning

9.00 – 9.15 Housekeeping

9.15 – 9.30 Introduction
Cameron Slatyer (ABRS)

9.30 **Who cares? Taxonomy, *realpolitik*, funding and student expectations**
Bradley Smith (Executive Director, Federation of Australian Scientific and Technological Societies — FASTS)

It cannot be assumed that the significance of taxonomy is self-evident. Taxonomy needs to build a clear case for political and funding support, including identification of end-users, gaining third party endorsement and identification of value propositions.

However, taxonomy is not alone in feeling the pressure of declining students, few jobs, poorly articulated career pathways and loss of visibility in universities. There are many areas where the nation may only require a small number of bachelor and PhD graduates a year, nevertheless they are needed. However, universities have an incentive to delete areas of comparatively low demand. Thus there is a need to consider how to support small subjects and niche research areas.

Do we need pragmatic interventions like loadings or guaranteed minimum EFTSU? Such interventions in the existing funding framework may be economically sensible. However, they do not go to the deeper and more complex issue of how to attract students to areas where the threshold of intellectual payback for students may take a long time due to their intrinsic difficulty or detail.

9.45 **Australia's Taxonomic Impediment: A Global Perspective and Industrialising the Taxonomic Method**
Prof Gerry Cassis (University of NSW)

It has been shown repeatedly that the taxonomic impediment is primarily an issue for organisms of the Southern Hemisphere. Australia is a case in point where the classificatory framework, adequacy of existing collections, and magnitude of the descriptive effort are issues that require attention. Within-country capacity to address these perceived shortfalls is tacitly thought to be insufficient in Australia and heading in the wrong direction. Global perspectives, such as the US National Science Foundation Program, the Planetary Biodiversity Inventory, are designed to bring together international teams, with an emphasis on cybertaxonomy and postgraduate training. This is one approach to expediting the taxonomic effort, and it serves as a model for a discussion of an alternative for and/or an enhancement of existing solutions.

10.00 Morning tea

10.30 **Systematics — University research and training**
Prof Pauline Ladiges (University of Melbourne)

Universities make an important contribution to systematic research, training and collections. A challenge is to reverse the past decline in the number of academic staff positions in a university environment where attracting significant research funding and having high citations are success measures (the Research Quality Framework is driving choices). Current granting bodies provide insufficient funding for systematic research and fellowships. Systematics may be in a renaissance, but improved funding and career pathways are pivotal; some strategies for building capacity are suggested.

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- 10.45 **Molecular genetic applications and barcoding**
**Prof Andy Lowe (University of Adelaide and Head of Science,
 Adelaide Botanic Gardens and State Herbarium)**

Molecular genetic techniques have helped revolutionise the study of the evolution of species. Phylogenies based on neutral genes are used standardly to anchor hypotheses of systematic relationships, both at deep and shallow taxonomic divisions. A range of other applications of genetic markers, such as studies of phylogeography, genome scans and population genetics, have allowed further insight into species range expansions/contractions, hybridisation, speciation and species coherence models. Rather than making redundant traditional morphological methods, application of molecular methods have often been complementary (co-phylogenies), allowed more rigorous testing of evolutionary adaptation hypotheses (character evolution) or allowed direct insight into morphological evolution (gene evolution or expression). A new combination of morphological and molecular methods is presenting itself in the form of DNA bar coding. Rather than trivialising traditional modes of taxonomy, this new technique, by making accessible rapid biodiversity assessment for a range of applications, will make our current taxonomic collections and expertise valuable and useable in new ways. This is an opportunity that the Australian taxonomic community should embrace and be prepared for, not shun.

- 11.00 **Alpha taxonomy underpinning land management and conservation planning in Western Australia**
Dr Kevin Thiele (Curator, WA Herbarium)

13% of known taxa in Western Australia (c. 1,700 taxa) are undescribed. A high proportion (30%) of these are of conservation significance and listed as Declared Rare or Priority Flora under State legislation. Although undescribed taxa can be listed under State legislation, the lack of knowledge of these taxa and poor taxonomic resolution limits conservation policy and planning. With funding from the Western Australian State Government's Saving Our Species Initiative, the Western Australian Herbarium in 2006 appointed three early career researchers to work towards high-throughput taxonomic resolution of a range of undescribed species occurring in areas of high mining prospectivity. This paper will describe the experience and the spectacular results obtained from this highly professional, focused, taxonomic SWAT team.

- 11.15 **Future directions for taxonomy in Australia**
Frank Howarth (Director, Australian Museum)

Taxonomy in Australia faces the problems of few students wanting to study in the field, universities not teaching it, and very few jobs. The broader community doesn't understand the need, and/or thinks we already know enough. Taxonomists can't agree among themselves about where the priorities are. We need agreement on the priorities and a broader-based training approach and career structure with taxonomy as a part, not an end in itself, and we need coordination and communication between educators, funders, problem owners and problem solvers about how to achieve this.

- 11.30 General Discussion

- 12.00 Lunch

TIME	PROGRAMME
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DAY 1 — THURSDAY 4 OCTOBER

Afternoon

13.30 – 14.00 Introduction to workshop* sessions & organisation
Mark Butz (Futures by Design)

14.00 – 15.00 **First workshop* session**

- Atlas of Living Australia OR
- Taxonomic priorities and research gaps OR
- User needs OR
- Taxonomic impediments and resourcing

15.00 – 15.30 Afternoon tea

15.30 – 16.30 **Second workshop* session**

- Barcoding OR
- Taxonomic priorities and research gaps OR
- User needs OR
- Taxonomic impediments and resourcing

DAY 2 — FRIDAY 5 OCTOBER

Morning

9.00 – 10.00 **Third workshop* session**

- Atlas of Living Australia OR
- Taxonomic priorities and research gaps OR
- User needs OR
- Taxonomic impediments and resourcing

10.00 – 10.30 Morning tea

10.30 – 11.30 **Fourth workshop* session**

- Barcoding OR
- Taxonomic priorities and research gaps OR
- User needs OR
- Taxonomic impediments and resourcing

11.30 – 12.00 Introduction to afternoon plenary session

12.00 Lunch

Afternoon

13.30 – 15.00 Plenary session

15.00 – 15.30 Afternoon tea

15.30 – 16.30 Summarising results

* SEE PAGE 4 FOR A DESCRIPTION OF THE WORKSHOPS.

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WORKSHOPS

ATLAS OF LIVING AUSTRALIA

The Atlas of Living Australia is an attempt to make current electronic biodiversity information publicly available via a single portal on the Internet. This workshop will consist of a short presentation plus a question and answer session. To be run by Dr Kevin Thiele or Cameron Slatyer, members of the ALA Management Committee.

(2 sessions, Thursday 14.00–15.00 and Friday 9.00–10.00)

BARCODING

There is currently a proposal, supported by a several institutions around the country, to establish an Australian node of the Barcode of Life. This workshop will consist of a short presentation plus a question and answer session. To be run by Dr Les Christidis, Chair of the Consortium looking into the Australian node.

(2 sessions, Thursday 15.30–16.30 and Friday 10.30–11.30)

TAXONOMIC PRIORITIES AND RESEARCH GAPS

This workshop will identify high-level priorities both in terms of important taxonomic groups and groups that have lost (or are in danger of losing) taxonomic expertise in Australia. Ideas put forward at each session will be used to compile a list that will direct ABRS and national priorities over the next four years. To be run by a professional facilitator.

(4 sessions, Thur 14.00–15.00 and 15.30–16.30, Friday 9.00–10.00 and 10.30–11.30)

USER NEEDS

Conservation agencies and industries such as agriculture, fisheries and mining often expect taxonomic resources to be available to meet their demands. Such expectations could become increasingly difficult to meet over the next four years because of resource shortages. There is an urgent need to identify user priorities and needs in terms of taxonomic services so that these can be planned for. Participants in this workshop will be asked to identify priorities to inform future directions for ABRS and other institutions involved in taxonomic research. To be run by a professional facilitator.

(4 sessions, Thur 14.00–15.00 and 15.30–16.30, Friday 9.00–10.00 and 10.30–11.30)

TAXONOMIC IMPEDIMENTS AND RESOURCING

Numbers of practising taxonomists and systematists are dwindling and there are increasingly serious shortfalls in the numbers of graduate and undergraduate students able and inclined to take their place. This workshop will canvass ideas from participants for innovative potential solutions to resource issues such as the scarcity of employed taxonomists, absence of career paths and shortages in student numbers. To be run by a professional facilitator.

(4 sessions, Thur 14.00–15.00 and 15.30–16.30, Friday 9.00–10.00 and 10.30–11.30)