

**House of Representatives Standing Committee on Primary Industries and Regional Services**  
**Inquiry into the regional development of bioprospecting industries**

Submission on behalf of the Royal Society of Western Australia, Inc.

The Royal Society of Western Australia Inc. makes the following submission to the Standing Committee. We address in particular the matters of the impact on scientific research, intellectual property rights (especially those of indigenous peoples), and conservation. The links between protection and conservation of biological diversity, and the place of indigenous peoples' knowledge, practices and innovations, are of more than academic interest.

*Support for taxonomic research*

Barriers to growth of bioprospecting include the 'taxonomic impediment'. The suggestion in the issues paper that 'within as little as five years all Australia's biota could be screened with the resulting intellectual property and knowledge sold off' betrays ignorance of the situation in describing our biota. Tens of thousands of taxa (especially micro-organisms) are as yet undescribed, and large areas unexplored (*Biodiversity Research: Australia's Priorities A discussion paper*, Environment Australia, 2000). A significant part of this impediment is the lack of trained specialists in the fields of invertebrates and other microfauna, microflora and other non-vascular flora. Although some groups of organisms are well-known, at current rates of research it will take many decades before we approach a reasonable knowledge of the whole biota. There should be a requirement in any bioprospecting agreement that a proportion of royalties or payments from bioprospecting companies be set towards supporting research in systematics, and towards maintaining collections where voucher material is stored.

Agreements with bioprospecting companies should not include any clause that would restrict scientific research on the biota. For example, there should be no restriction (for the purpose of commercial confidentiality) on the description of new taxa that may come to light during bioprospecting.

*Intellectual property rights*

The major issues are:

1. To what extent does a person or community have rights over their knowledge of the biological source of valuable chemicals?
2. How are these rights protected?

Indigenous peoples are increasingly concerned about exploitation of plants and animals, and other biological products and derivatives, and of the knowledge about them. Indigenous biological knowledge is being collected and utilised by pharmaceutical, cosmetic and other research companies, without regard to the custodians and holders of this knowledge, and with little or no financial return to the indigenous communities. The protection of indigenous biological and other types of knowledge is not within the scope of existing patent or other intellectual property laws.

The Convention on Biological Diversity (the Rio 'Earth Summit'), was ratified by the Australian Government in June 1993 and entered into force on 29 December 1993. The Convention recognises that states have sovereign rights over their natural resources, and that terms and conditions for access to these materials are within the domain of national legislation. The Convention also recognises the 'knowledge, innovations and practices of indigenous and local communities' and specifically 'encourage[s] the equitable sharing of benefits arising from the utilisation of such knowledge, innovations and practices' (Article 8(j)).

Although multinational corporations are free to patent bio-materials, no effective guidelines and conditions are defined for recognising and rewarding the contributions of indigenous peoples and other informal innovators who are responsible for nurturing and using biodiversity worldwide. For example, there is no mention of this aspect in the prospectus issued in Western Australia by BioProspect Ltd on 24 November 2000. BioProspect Ltd has signed an agreement with the Western Australian Department of Conservation and Land Management (CALM) that appears to give the company sole rights to research the 'entire biota of Western Australia from areas under CALM control' for the next 15 years.

It is clear that valuable chemical compounds derived from plants, animals and microorganisms are more easily identified and of greatest commercial value when collected with indigenous knowledge and/or found in territories traditionally inhabited by indigenous peoples. For example, (1) scientists found that 86 percent of the plants used by Samoan healers displayed significant biological activity when tested in the laboratory; (2) crude extracts of plants used by one healer in Belize gave rise to four times as many positive results in laboratory tests for anti-HIV activity as specimens collected randomly. A great deal of data is available on Aboriginal knowledge of native animals and plants, e.g. E.Reid, *The records of Western Australian plants used by Aboriginals as medicinal agents* (Western Australian Institute of Technology, Bentley, 1977).

In 1996, the Commonwealth, State and Territory governments endorsed the National Strategy for the Conservation of Australia's Biological Diversity. Action 1.8.2 of this Strategy is to ensure that the use of traditional biological knowledge in the scientific, commercial and public domains proceeds only with the co-operation and control of the traditional owners of that knowledge, and to ensure that the use and collection of such knowledge result in social and economic benefits to the traditional owners. This includes:

- (a) encouraging and supporting the development and use of collaborative agreements safeguarding the use of traditional knowledge of biological diversity, taking into account existing intellectual property rights; and
- (b) establishing a royalty payments system from commercial development of products resulting, at least in part, from the use of traditional knowledge.

One issue requiring clarification is that of the relationship between indigenous knowledge and intellectual property rights, and whether indigenous knowledge can be construed as a property right. There are various ways by which indigenous intellectual property rights may be better protected. These range from amendments to a range of existing laws, through more creative uses of these laws, a variety of common law and non-legislative approaches, to new *sui generis* systems designed specifically for indigenous peoples' intellectual property rights, which would provide greater community control over cultural products and expressions.

In summary, Aboriginal/traditional knowledge should be recognised, protected, acknowledged and, where appropriate, rewarded with economic benefits.

#### *Impacts on the environment, conservation*

In the mid-1980s, pharmaceutical industry analysts warned that each medicinal plant lost from tropical rainforests could lose drug firms possible sales of more than \$200 million. Australia has significant areas of rainforest, but research has now shown that other areas, such as the heathlands of south-western Australia, have levels of biodiversity richness equivalent to rainforest.

With advances in molecular biology and the availability of more sophisticated diagnostic tools for screening, it is increasingly cost effective for pharmaceutical corporations and others to conduct natural product research.

While testing for useful chemicals does not present a problem, once a source of such a chemical is identified there can be threat to the survival of biota in the wild. Large amounts of the chemical are required for the clinical trials required to get a chemical into the marketplace, and this harvest can compromise the survival of the species. In particular, trawling for marine organisms can severely damage habitats.

Although the 'Rio' Convention offers a multilateral facade for addressing conservation and sustainable use of biodiversity, it offers no multilateral mechanisms for making this happen. In reality, the Convention promotes bilateral deals (commercial contracts and other agreements for access to biodiversity) but fails to provide a strong plan of action based on broad, multi-country collaboration for access to—and development of—biological diversity. The Council of Australian Governments agreed in 1992 to implement a National Strategy for Ecologically Sustainable Development, which includes the conservation of biological diversity as one of its central objectives. This must be taken into account in any agreement on bioprospecting.

Collection of material from the wild must be strictly supervised, especially for rare taxa, e.g. those known from single small populations (some plant species are known from only one or two plants). In Western Australia there may be opportunities for local people to be involved in collection, both indigenous communities and, for example, through the CALM regional herbarium program.

In Western Australia, options for better practices may have already been constrained by the agreement between CALM and BioProspect Ltd.

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President

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