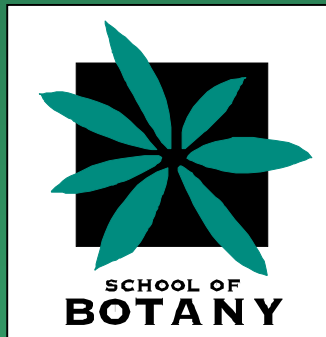


# Mining and Metallophytes: Conservation of Biodiversity

**Prof. Alan J.M. Baker**

Prof. Roger D. Reeves

Dr Steven N. Whiting



# What is a metallophyte?

- **Grow on (toxic) metalliferous soils**
- **Metal tolerance mechanisms**
- **Evolved over 10's to 1,000,000's of years**
- **Unique, often endemic**

# **Metallophytes:**

- **Current numbers/status unknown**
- **Valuable...**
  - **Biologically significant**
  - **Ecological restoration**
  - **Bioindicators**
  - **Phytoremediation / Phytomining**

**Are under threat!**

# Rio Tinto – RBG Kew Workshop

(July 2001)

## AIMS:

- **Current status of metallophytes?**
- **Conservation of Biodiversity?**
- **Applications and risks?**
- **Access to resources and benefits?**

# Seven Key Issues Identified:

## 1. Who should be aware of metallophytes?

- Identify consortium of interested companies
- Promote awareness
- Involve local researchers

## **2. Develop policies for metallophyte conservation**

- **To ensure effective conservation**
- **Consistent with Convention on Biological Diversity**
- **Fair and equitable benefit sharing with provider countries**

### **3. Identification of metallophyte diversity**

- **Where to survey? - priority areas**
- **When to survey? - before development**
- **How to survey? - ecological methodologies**

## **4. Development of resource base**

- **Database information - internet/CD's**
- **Germplasm storage - seed banks, herbaria**
- **Living collections - botanic gardens,  
reserves, seed orchards**



## **5. Access to metallophytes resources**

- **Mechanisms to promote access**
- **Prior informed consent of provider country**
- **Fair and equitable access**

## **6. Commercial and non-commercial uses for metallophytes**

- **“Green” technologies**
- **Bioindicators, ecological resoration, phytoremediation, phytomining**
- **Future research needs?**

# **7. Assessment and management of environmental risk**

- **Consequences of using metallophytes?**

- **Next steps?**
- **Ideas are consonant with tenets of Sustainable Development**
- **MMSD – perfect vehicle for promoting conservation and use of metallophyte biodiversity**

# **Metallophytes:**

- **Current numbers/status unknown**
- **Valuable...**
  - **Biologically significant**
  - **Remedial applications**
  - **Commercial applications**

**\* Are under threat!**