Australia's official floral emblem, the wattle, has been at the centre of a recent debate over the application of its scientific name: *Acacia*. The resulting decision, regarded as one of the most significant in several decades, will benefit both Australian and international botanical communities.

by Danielle Le Moignan

Acacia or Racosperma?
The great wattle debate

One of the most significant developments in botanical nomenclature in recent years occurred in July 2005 at the International Botanical Congress in Vienna. In a somewhat controversial decision, the congress voted to allow the Australian group of wattle species to keep its current scientific name, *Acacia*. The decision, based on the need to provide stability of naming, as well as logistical considerations, has avoided considerable scientific disruption and saved millions of dollars.

There are more than 1350 species of wattle recognised throughout the world, distributed through warm and temperate areas of the globe. *Acacia* is the second largest genus in the pea family. It is the largest genus of flowering plants in Australia and is an iconic national floral group. Of the 1350 or so species of wattle recognised, Australia is home to about 955, while the Americas host 185, Africa 144 and Asia 89. There are two main areas of richness for wattles in Australia: the arid inland region of south-west Western Australia and the tablelands associated with the Great Dividing Range in eastern Australia.

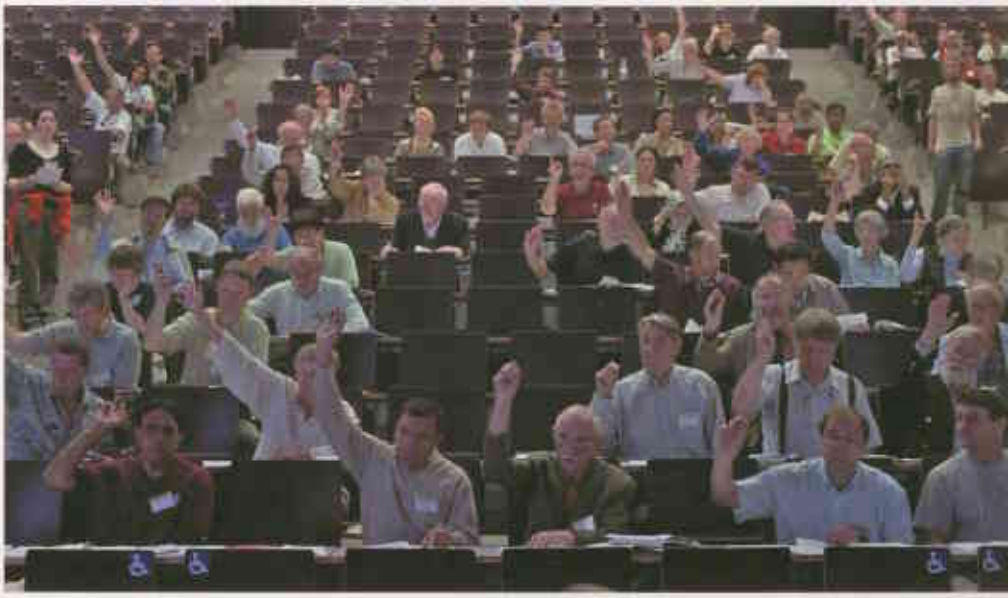
Wattle we call it?

Over the past few decades, it has become clear to scientists that most Australian wattle species are dissimilar in many ways from those found in Africa, Asia and the Americas. The results of recent molecular studies confirmed morphological evidence that a formal division of the genus *Acacia* into a number of separate genera needed to take place. This division would trigger the need for several new generic names, and result in considerable nomenclatural disruption. One of the most important questions relating to the issue was: to which group should the original name *Acacia* be applied?

Since 1986, considerable work has been undertaken to reassess the generic status of wattle. The previous system of classification recognised three subgroups: subgenus *Acacia*, subgenus *Aculeiferum* and subgenus *Phyllodineae* (the 'Australian group'). New research suggests that there should really be five subgroups rather than three.

The rule of priority followed by the International Code of Botanical Nomenclature means that, under usual circumstances, in the event of a genus being split, the group containing the 'type species' retains the name of the genus. The 'type species' is usually one of the first species to be named in the genus and, in the case of *Acacia*, this has long been accepted as *A. nilotica*, which is a native of Africa and Asia. Thus, in the event of *Acacia* being split, and with *A. nilotica* regarded as the 'type species', the name *Acacia* would have to be applied to subgenus *Acacia*, which is one of the smallest groups with only 163 species, 13 per cent of the total genus.

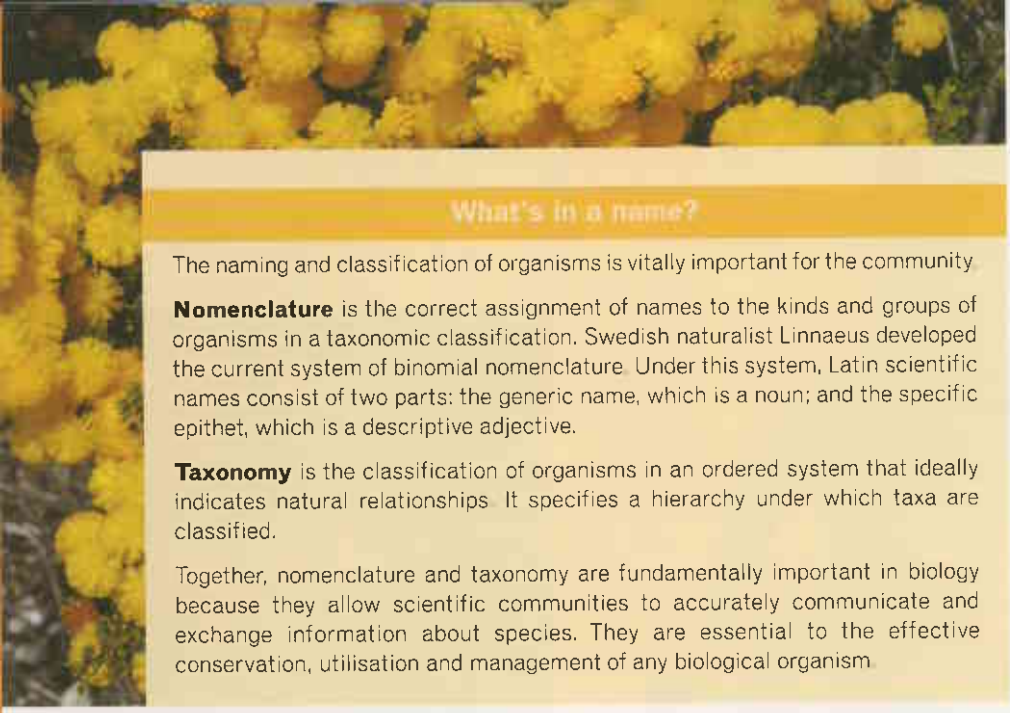
Under this scenario, most of the Australian species would have to be given a new generic name, *Racosperma*. However, in circumstances that are regarded as exceptional, the International Code of Botanical Nomenclature allows for the 'type species' to be changed. These exceptional circumstances must be ones that are judged to be in the best interest of stability for the group concerned, and a formal process must be followed.



Left *Acacia multispicata.*
Photo – Marie Lochman

Above right Winged wattle (*Acacia alata*).
Photo – Jiri Lochman

Right Section voting on one of the many proposals.
Photo – courtesy of the XVII International Botanical Congress Organising Committee.



What's in a name?

The naming and classification of organisms is vitally important for the community.

Nomenclature is the correct assignment of names to the kinds and groups of organisms in a taxonomic classification. Swedish naturalist Linnaeus developed the current system of binomial nomenclature. Under this system, Latin scientific names consist of two parts: the generic name, which is a noun; and the specific epithet, which is a descriptive adjective.

Taxonomy is the classification of organisms in an ordered system that ideally indicates natural relationships. It specifies a hierarchy under which taxa are classified.

Together, nomenclature and taxonomy are fundamentally important in biology because they allow scientific communities to accurately communicate and exchange information about species. They are essential to the effective conservation, utilisation and management of any biological organism.

Left *Acacia lasiocarpa.*
Photo – Tom Chvojka

Below The official photo of the full complement of scientists attending the 2005 Nomenclature Section of the International Botanical Congress.
Photo – courtesy of the XVII International Botanical Congress Organising Committee.

Australia needs *Acacia*

In 2003, Bruce Maslin, Senior Principal Research Scientist with the Department of Conservation and Land Management (CALM), and Tony Orchard, from the Commonwealth Department of Environment and Heritage, put forward a proposal to change the 'type species' of *Acacia* from *A. nilotica* to *A. penninervis*, which occurs in the 'Australian group' of wattle. If accepted, this proposal would mean that species of the 'Australian group' would retain the name *Acacia* in the event of the genus being split. On a global scale, the Australian group (subgenus *Phyllodineae*) is the largest by far, with almost 1000 species. Applying the name *Acacia* to the largest group would result in the least amount of change, and would minimise nomenclatural disruption and uncertainty around the world. The alternative to this solution, recognising subgenus *Phyllodineae* as the genus *Racosperma*, would create a mass of work, which could cost the forestry and horticultural industries, community groups, botanical institutions and many others millions of dollars.

Alex Chapman, Research Scientist from CALM's Western Australian Herbarium represented the State at the XVII International Botanical Congress in Vienna. On 16 July 2005, the Nomenclature Section of the Congress, after considerable debate, voted to accept the proposal put forward by Tony Orchard and Bruce Maslin. This means that the name *Acacia* will be retained for almost 1000 species of Australian wattle.

While the decision was based on scientific, practical and logistical considerations, it is also significant in economic and historic contexts. Australian species of *Acacia* are grown in more than 70 countries and cover about two million hectares in plantations. A large international forestry industry utilises Australian wattles, producing large-scale commercial plantations for industrial timber, fibre and tannin, and smaller-scale plantations for fodder, soil conservation, human food, firewood and floriculture.

Wattles are also highly significant to Australia's cultural heritage, used symbolically on the Australian Coat of Arms, in the Australian Honours System and the official Australian national colours: green and gold. The golden wattle (*Acacia pycnantha*) is our official national floral emblem, and 1 September is celebrated as National Wattle Day.

The decision made at the International Botanical Congress has ensured that Australia's *Acacia*, internationally significant in scientific, economic and historic frameworks, continues to blossom.

Danielle Le Moignan completed professional placement with CALM's Strategic Development and Corporate Affairs division as part of a Communication and Cultural Studies degree at Curtin University of Technology.

She would like to thank the following CALM staff: Senior Principal Research Scientist Bruce Maslin and Research Scientist Alex Chapman, both from the Western Australian Herbarium, for their time and assistance.

For more information on the *Acacia* name issue, visit www.worldwidewattle.com.

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