But Professor Bond thinks otherwise. "We believe that although weather patterns are a factor, these plants evolved primarily as protection against moa feeding. Back in the seventies, Atkinson and Greenwood did not have access to emu and ostrich farms, so they were not able to demonstrate the link and mechanism as thoroughly as we have". Dr Lee says as well as shedding new light on the moa's role in the environment, the findings have important conservation implications for today. "If plants in New Zealand have adapted to protect themselves against tugging rather than cutting, they will be especially vulnerable to mammalian browsers, like deer and goats".

"Another question this study raises is whether moa feeding performed useful functions that we should look at restoring, if we want to return these wiry plants to native ecosystems. For example, should we introduce emus and ostriches to some protected natural forest or scrubland areas to restore important biotic processes?"

Professor Bond has other reasons as well for finding interest in this study. "The moa is the most recent large-animal extinction in the world: it only died out three or four hundred years ago. The last large-animal extinctions before that happened three to four thousand years ago. New Zealand's plant life is unique, and is still adapting to life without the moa"

Five new species of kowhai named - *ODT 18.05.01; Landcare Media Release*

Scientists Peter Heenan (Landcare) and Peter de Lange (Department of Conservation) have just published the names of 5 new species of kowhai in the New Zealand Journal of Botany.

Until this, only 3 species were recognised here; *Sophora tetraptera*, a large-leaved, North Island tree, *Sophora prostrata*, a sprawling , small-leaved South Island tree, and, *Sophora microphylla*, which covered everything else in between.

The new species are:

- ***Sophora longicarinata***, which grows on limestone and marble in NW Nelson;
- ***Sophora godleyi***, found growing on sandstone, siltstone and mudstone in areas like Rangitikei, Wanganui, Taihape and eastern Taranaki;
- ***Sophora molloyi***, which grows on dry, exposed headlands around Cook Strait, Kapiti Island, and parts of the lower North Island. Like its namesake, Dr Brian Molloy, it is 'tough as old boots and hardy in all extremes of weather;
- ***Sophora fulvida***, which grows on basalt and other volcanic outcrops from Marlborough to Waikato, and has particularly hairy leaves;
- ***Sophora chatamica***, which grows mainly in western coastal areas of the northern North Island, and also around Wellington and on the Chatham Islands. Dr Heenan speculates that this species does not occur naturally in Wellington and the Chathams, but was moved there around 300 years ago by the Waikato and Taranaki Maori, who regard it as a taonga, a treasure.

Sophora tetraptera *Sophora microphylla* agg. *Sophora prostrata*

Relative leaf sizes of 3 species of kowhai growing in Dunedin gardens, May 2001 – *Allison Knight*

ON-LINE NEWS

More information and pictures from the previous two and other **Landcare** press releases can be found on the web at:
http://www.landcare.cri.nz/information_services/media/

The **New Zealand Ecological Restoration Network** has a web page at:
http://www.bush.org.nz
This has details of restoration planting projects and native plant nurseries.

International plant names index

Over 1.3 million names for seed plants are now listed on the International Plant Names Index (IPNI), as part of a collaboration between the Royal Botanic Gardens, Kew, UK, the Harvard University Herbaria, USA and the Centre for Plant Diversity Research, Canberra, Australia. New names continue to be published at a rate of up to 6,000 a year as new species continue to be described. This is the first freely available, comprehensive global database of plant names linked to bibliographic sources.

For more information, and access to the International Plant Names Index, see
http://www.ipni.org