

# OF HERBS AND HERPS

*New Zealand lizards have long been known to consume large amounts of fleshy fruit. Recent studies have shown they also take considerable quantities of nectar. Here Tony Whitaker summarises a forthcoming paper which examines how geckos and skinks may aid the pollination and seed dispersal of several native plants.*

The combined impacts of habitat destruction and introduced predators have taken their toll on the New Zealand lizard fauna. Some species have become extinct, several are now confined to predator-free islands, and yet others show disjunct or markedly reduced ranges. The species which remain on the New Zealand mainland are generally secretive, elusive and/or nocturnal, and of small size. Furthermore, in most districts they are now relatively scarce. It is hardly surprising, therefore, that botanists have failed to recognise the potentially important role these animals may play in the reproductive strategies of many New Zealand plants.

## Pollination

For many decades the instructions for keeping lizards in captivity (before they were protected under the Wildlife Act) usually said they could be fed on "honey-water". Whilst such a diet is hardly a balanced one it provides a long-neglected clue to their potential role in pollination.

First records of lizards taking nectar in the wild were obtained in New Zealand over 20 years ago but the significance of these observations to pollination biology was overlooked. More recently reports from other parts of the world have shown several species of small lizards regularly visit flowers to feed on nectar or pollen but only one of these studies suggested lizards should be seriously considered as pollinators. Work with New Zealand lizards over the last few years has now shown that some geckos are indeed capable of acting as pollinators for some native plants.

In New Zealand the lizards most commonly seen feeding on nectar are the nocturnal geckos, in particular the giant (or Duvaucel's) gecko and the Pacific gecko. Where these two species are still abundant, such as on the northern off-shore islands, they can easily be observed feeding from the flowers of a variety of trees and on honey dew. There are also records of the diurnal green geckos feeding on manuka nectar but as yet there have been no reports of skinks visiting flowers.

## Pohutukawa, flax and ngaio

Favourite nectar sources of the nocturnal



*Above: While feeding on nectar from flax flowers a giant gecko becomes covered in pollen – visible here on its jaws, throat and even on its eye. Geckos feeding on flax prise the petals apart and lap the nectar through the side of the flower. Photo: Tony Whitaker*



*Left: When feeding from pohutukawa flowers Pacific geckos crawl over the blossoms and push their heads down between the stamens to reach the nectar. In doing so pollen adheres to their feet and the underside of their body, particularly the throat. Ultrastructural differences of the skin on the throat may indicate a specific adaptation for pollen transmission. Photo: Tony Whitaker*