



dous proportions, would also perish. Within a few decades the world would return to the state of a billion years ago, composed primarily of bacteria, algae and a few other very simple multicellular plants.'

Approximately 80% of New Zealand's insects are endemic. This means that, like our plants and birds, they evolved, live and, all too often, have become extinct here. They are different to everything else in the world, and are a vast library of unique genetic material. They comprise millions of years of problem solving, attractively and usefully packaged and presented freely to those who have the abilities to utilise the information.

However, most of our indigenous insects can only survive in their own natural ecosystem, i.e., their own 'house'. Therefore, the way to conserve them is to conserve their habitat. The best thing you can do for global conservation is to conserve or rehabilitate the plant community (not just the individual species) that is natural to your area, because this is the only place

in the world where this particular community exists.

Many farmers leave natural areas for stock shelter and because they genuinely appreciate these areas. However, if they are not fenced, the effect of grazing is the equivalent of tearing the walls and floor off the shelter and removing the furnishings. Once that vital shelter is gone the winds get in, and over a relatively short period of time, compared with their normal life-span, the remaining trees and shrubs die out. With no protection from browsing, the natural recycling by insects is disrupted and all attempts by the system to rebuild, through rejuvenation or regeneration, fail.

Can we do anything about it?

Yes we can. Once we understand what's happening, we can change the degenerative process. If browsing is stopped, the insect workers will begin construction of shelter from the available materials, and the process of regrowing the natural community will have begun. Once natural areas are fenced, the major damage source is gone and the feral browsers can be

Above: The forest weevil *Rhyncodes ursus* is found throughout New Zealand, its larvae feed on dead beech and rimu wood. Adults can sometimes be found feeding on sap exuding from rimu trees.

Opposite left: New Zealand's cicadas are very obvious from their song. Maori people identified different species from their song, as did Sir Charles Fleming when he carried out his classic study on New Zealand's cicada. Cicadas belong to the bug family, they suck sap from plants. Cicada nymphs live underground sucking sap from roots, and can take up to three years to develop into an adult. Here a green cicada, *Kikihea ochrina* emerges from its nymphal sac. This species lives in the lower North Island, but has recently arrived in Picton. It is suspected of hitch-hiking across Cook Strait on the rail ferry.

All photos by Mike Meads, D.S.I.R. Land Resources.