



RATS

ecological

anarchists

*‘And the muttering grew to a grumbling;
And the grumbling grew to a mighty rumbling;
And out of the house the rats came tumbling.
Great rats, small rats, lean rats, brawny rats,
Brown rats, black rats, gray rats, tawny rats,
Grave old plodders, gay young friskers,
Fathers, mothers, uncles, cousins,
Cocking tails and pricking whiskers,
Families by tens and dozens,
Brothers, sisters, husbands, wives —
Followed the Piper for their lives.’*

The Pied Piper of Hamelin
Robert Browning

by David Gregorie, Tourist and Publicity Department journalist, working with Lands and Survey Department.

Rats are the weeds of the animal world — opportunistic species that will take advantage of any change made in the natural order of things by a natural disaster, or of the many radical alterations in the world ecology made by human beings.

They are the camp-followers of the human race, living on our rubbish, surreptitiously sharing our homes, spreading disease, and waxing prosperous on our precious stores of food.

They are tough, adaptable, intelligent and prolific.

Where rats are endemic, such as on the Eurasian land mass, they are kept partly in check by predators, but more importantly by fierce competition for the available food. In densely populated areas like China, India, and Europe, they take advantage of the enormous increase in available food — chiefly stores of food grains and edible rubbish produced by cities.

Ecological chaos

Rats are capable of creating ecological chaos, especially when they invade territories such as islands which have hitherto been rat-free.

The oft-quoted example of the 1964 rat irruption on Big South Cape Island — off the south coast of Stewart Island — shows the catastrophic effect rats can have on wildlife.

When Brian Bell of the Wildlife Service arrived on the island for a survey in 1964, he found no saddleback, wren, fernbird, robin or snipe, and there were few bellbird or parakeet.

Birds were not the only sufferers. The Stewart Island short-tailed bat is apparently extinct and the once-abundant insect life has been all but eliminated. Plants were seriously damaged too, especially *Pseudopanax* species and the punui (*Stilbocarpa lyallii*), but these have recovered somewhat since the ship rat population has declined to a lower level.

The tragedy of Big South Cape Island

could have been prevented if boat owners had been more aware of the importance of keeping their boats rat-free, or of the dangers of mooring their boats with shore lines to rat-free islands.

New rat infestations of offshore islands have happened too recently for us to be complacent about them — Lord Howe Island (1918 — ship rats); Raoul Island (1921 — Norway rats); Big South Cape (1962 — ship rats); Somes Island in Wellington Harbour (1968 — ship rats); Lizard Island, near Great Barrier Island (1977 — kiore).

Many people take the attitude that since there are rats already on about 80 percent of the world's oceanic island, it is only a matter of time before they reach them all. But New Zealand's experience suggests that with proper precautions and an aware population, it need not happen.

Suggested precautions include allowing no wharves or shoreline mooring points, on rodent-free islands. Boats should moor at least 300 metres offshore, stores and equipment should be packed in rodent-proof containers and poison bait used on boats.

On the mainland, rats must be deterred from boarding boats. They are known to get on to boats moored near the shore at night. Apparently, most leave by the morning or earlier if disturbed, but there is no guarantee that all will go, and a few might remain if the boat leaves its anchorage before daylight.

Unfortunately, it seems that except on the smallest of islands, once rats have become established, they are there for keeps. The DSIR, Lands and Survey and the Wildlife Service have experimented with various rodent control methods to see if there is any feasible way of exterminating rats that have become established, but the answer has been far from encouraging.

In this case, prevention is the only cure. People who use boats and visit offshore islands will have to be made to

realise the responsibility they face in keeping islands rat-free.

Aggressive and omnivorous

New Zealand does not have the huge populations of the longer-inhabited countries, but we do have a natural environment that is extremely vulnerable to an aggressive, omnivorous animal — the rat.

Rats' main food is invertebrates, particularly insects, and seeds and fruits. They will eat small birds, nestlings and eggs, lizards, and the growing shoots of some plants. Our native animals are particularly vulnerable because they have evolved in an environment without mammalian predators and because they are not generally very prolific. Newly-arrived rats found themselves presented with a food bonanza without any effective predators to keep their numbers down.

Mice are not a direct threat to our bird life but they do compete with them and with the larger invertebrates for food so we must do our utmost to stop their spread.

There are three species of rat found in New Zealand — the kiore or Polynesian rat (*Rattus exulans*), the ship or black rat (*R. rattus*), and the Norway or brown rat (*R. norvegicus*) — and one species of mouse, the house mouse (*Mus musculus*). All were brought to New Zealand by human settlers or arrived as stowaways in their canoes or ships.

The kiore is believed to have spread into the Pacific from South-East Asia with the first human settlers more than 3000 years ago, island-hopping with the Polynesian people and eventually reaching New Zealand with the Maori people about 1000 years ago.

The ship rat was the common rat in European ports and cities until about the beginning of the 18th century. It began its spread around the world with the voyages of Christopher Columbus in 1492. Most of the ships leaving Europe