



at display sites which females visit for mating.

The lesser short-tailed bat feeds on a variety of foods: fruit, insects, meat and nectar. Muttonbirders on the islands off Stewart Island used to smoke bats out of caves and kill them because they occasionally chewed on the fat and meat of hanging muttonbird carcasses.

This omnivorous feeding behaviour enables the short-tailed bat to remain active all year round, unlike the strictly insectivorous long-tailed species which hibernates in cooler regions over winter, when insects are less active.

THE ANCESTORS of the long-tailed bat were probably blow-ins from Australia. Daniel says it is surprising that New Zealand has only one bat derived from Australian stock, considering that country's 60-odd species and the prevailing westerly winds.

Bat genealogy

Bats form the order **Chiroptera** (from the Greek "hand-wing"). With almost 1,000 species they are the second largest order of mammals after rodents. There are two sub-orders:

Megachiroptera (fruit bats or flying foxes)

1 family, 173 species in tropical and sub-tropical areas worldwide. Navigate by sight alone and eat nectar and fruit. None in New Zealand.

Microchiroptera

18 families, 2 of them in New Zealand.

Family Vespertilionidae

320 species. Genus *Chalinolobus* 6 species in the west Pacific region including the New Zealand long-tailed bat which is probably descended from bat(s) blown across the Tasman Sea about a million years ago.

Family Mystacinidae (short-tailed bats).

Endemic to New Zealand. Only 1 living species, the lesser short-tailed bat, *Mystacina tuberculata*, and 2 extinct species. These bats are thought to be distantly related to three families of South American and Central American bats. They possibly arrived in New Zealand via a forested Antarctica about 35 million years ago.

there are 16 other families.