

Bumblebees to New Zealand

By Dr David Sheppard, Natural England Invertebrate Ecologist, 21st May 2009

The first recorded attempt to establish bumblebees in New Zealand was in 1875. Charles Darwin had discovered that only the long-tongued bumblebees were capable of pollinating red clover. The Canterbury Acclimatization Society asked Frank Buckland to help with establishing bumblebees in New Zealand where red clover seed had to be imported and sown regularly because of the absence of appropriate bees to pollinate the clover crop. Frank Buckland was Her Majesty's Inspector of Fisheries and enthusiastic about 'acclimatizing' exotic species in public parks. However he did not seem to know much about bumblebees. Buckland did send someone to consult with Fred Smith at the British Museum but seems to have ignored or misunderstood the advice given to him. Smith recommended taking hibernating queens of *Bombus terrestris*, *B. lucorum*, *B. hortorum* and *B. subterraneus*, keeping them cold during the voyage and releasing them in the New Zealand spring. Buckland, instead, collected two active late summer nests of what was probably either *Bombus pascuorum* or *Bombus muscorum*. Each nest was packed in a box and sent by Dr Featherston to the Hon John Hall, a member of the New Zealand council in Plymouth. From here they were to be placed aft right of the ship but brought into John Hall's cabin if they got too cold! The ship sailed in October but the bees died before the ship reached Canterbury in early January. The whole scheme was considered to be doomed from the start and received scathing comments in the entomological literature of the time.

Another attempt was made in December 1883/January 1884 when 80 fertile queens were sent but this also failed, all of the bees arriving dead. The problems lay in the moss in which the hibernating bees were placed becoming too moist and mould-ridden, and the difficulty of keeping the consignment cool enough whilst crossing the tropics. This introduction was the work of R.W. Fereday, a solicitor who emigrated to New Zealand in about 1869 and, staying initially with his farming brother, realised the reason behind the continual failure of the clover crop. It is likely that Fereday either met J.W. Dunning, secretary of the Entomological Society of London, during his visit to New Zealand, both were interested in micro moths, or he contacted the Entomological Society of London for help in collecting hibernating bumblebee queens.

Lessons were learned and in the next attempt a Mr Nottidge, a banker of Maidstone in Kent, offered a bounty to workmen who were cleaning out ditches for every bumblebee they could find. These 282 fertile hibernating queens were shipped on board the new iron steamer 'Tongariro' which was one of the first steamships to be built with a refrigeration unit. The voyage departed from London in December 1884, calling at Plymouth, Madeira, Capetown and Hobart, arriving at Wellington in January 1885. The consignment was taken to Lyttleton by coastal steamer and arrived at the Canterbury Acclimatization Society's gardens on January 8th. 48 bees were still alive. 36 flew away immediately and the other 12 were fed with honey, kept warm and flew away the next day. Another consignment of 260 fertile hibernating bees were sent on the Aorangi, of the same fleet, in January 1885 and arrived on 5th February 1885. 49 survived and all flew away. In 1886 bumblebees were found 100 miles south, 86 miles west and 55 miles north of the release area. Many nests were destroyed through curiosity, ignorance or 'wanton mischief'. The latter reflecting the contempt which the indigenous population felt towards the introduction of alien species to their land.

The introduction was such a success that by 1892, bumblebees were so abundant that there were fears that they would become a pest to beekeepers because of their abundance on crops requiring pollination. It was found that the bumblebees did not visit native New Zealand plants and did not hibernate in the milder New Zealand climate. Even honey bees did not produce honey because there was no need for them to have a winter food store.

The Acclimatization Societies continued to exist until the 1960's, degenerating into societies devoted to the importation of game for hunting, shooting or fishing. There are several metres of shelves containing the records of the Canterbury Acclimatization Society in the Christchurch archives. The site of the release in Lyttleton is now the town's hospital.