

In the news

CLIMATE CHANGES PENGUINS

Giant icebergs, breaking away from the great Antarctic ice shelves, have got in the way of migrating penguins and altered the course of their evolution, according to a new study.

The research from Massey University, New Zealand, published in *PNAS*, used ancient-DNA techniques to compare 6,000-year-old Adelle penguin sequences with those of their descendants that live in the same Antarctic colonies today. This unprecedented timespan was possible because Adelle penguins return to the breeding ground in which they were born, resulting in stable populations over time, and because one in four chicks do not survive, leaving well-preserved remains in the stratified frigid terrain. "Droppings, feathers, egg fragments and other penguin remains, mixed with sand, gravel and pebbles, constitute distinct soil horizons", said lead researcher David Lambert (*The Independent*, 8 November 2005).

The researchers examined non-coding regions of the penguin DNA and found significant microevolutionary changes in gene frequencies — the first time this has been observed over such a large timescale. They suggest that this is because icebergs have forced the penguins to interbreed with other populations. "When these mega-icebergs come along, the penguins can't always get back to the colonies where they were born, so they have to breed in other places", said Lambert (*New Scientist*, 12 November 2005).

The authors estimate that about 200 large icebergs of this kind have broken away during the past 10,000 years. Penguins are therefore likely to be particularly affected by climate change, but the authors speculate about other species that are harder to study. "That would lead you to wonder whether other organisms — humans included — over that 6,000-year period would have changed in a similar kind of way", said Lambert (*Seed Magazine*, 2 December 2005).

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