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# Insects show evolution can go stick it

By Michael Bradley  
 January 16 2003

A stick insect from Papua New Guinea has turned evolution's "use it or lose it" theory on its head.

Biologists have long believed evolution is irreversible and that once a physical characteristic has been lost, it is gone forever. A winged stick insect may have proved that assumption wrong.

Several stick insect species - including PNG's phasma gigas - have re-evolved wings, 50 million years after losing them.

Writing in the science journal *Nature*, Michael Whiting, a biology professor at Brigham Young University in Utah, said he analysed DNA from 35 species of stick insects to determine their evolutionary order. He found several wingless species existed before their winged descendants.

"Even though the wing is not physically there, the underlying genetics which construct wings appear to be conserved over evolutionary time," he said.

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Professor Whiting suggests the stick insects may have lost wings because it helped them blend in with their surroundings, while he also notes previous studies have shown wingless insects lay more eggs than winged relatives.

The researchers believe the instructions for growing wings can be turned on and off.

"At least 50 million years later, for some reason, it was to their advantage to have some of the species become winged again," Professor Whiting said.

"The remarkable thing was that they had the ability to generate wings when they needed them."

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