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Fat lips evolve at record speed

19 May 2010

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FISH in a remote crater lake in Nicaragua are splitting into separate species at breakneck speed.

It has taken the lake cichlids just 100 generations and as many years to evolve an entirely new physical feature: very fat lips. Most estimates of how fast species evolve new features are based on models, which generally indicate that it could take up to 10,000 generations. Some models suggest just tens of generations are enough, but such rapid change has never been documented before.

Axel Meyer at the University of Konstanz in Germany and his team say the fat-lipped fish occupy a different ecological niche from their thin-lipped cousins, despite living in the same lake, which fills a volcanic crater (BMC Biology, vol 8, p 60). They don't eat the same diet, nor do they like to mate with each other - though lab experiments show they can still interbreed. Meyer says that if they avoid mating with each other in the wild, they are well on their way to becoming separate species.

The new variety has a narrower, more pointed head, ideal for nibbling insects and larvae from crevices in the volcanic rock, and fat lips to cushion its ventures into these sharp-edged fissures. The thin-lipped variety has sturdier jaws and more teeth, to crack the shells of the snails it feeds on.



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