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[The Silent Crickets of Hawaii](#)

Here comes the fly!

A new study by UC Riverside evolutionary biologists revealed that in only a few generations, cricket (*Teleogryllus oceanicus*) (photo) males in Kauai island (Hawaii) experienced a mutation that left them incapable of using sexual signal songs to attract females. The new male crickets - even if they lacked the singing apparatus - are able to mate successfully with females. They changed their behavior, surpassing what seemed a harmful mutation increase. More than 90 percent of male crickets on Kauai changed in less than 20 generations from normal to non singing. The mutation protects male crickets from a deadly parasitic fly (*Ormia ochracea*) that locates them by using their song. The fly deposits larvae onto crickets; these enter into the cricket, eat it from inside, and subsequently kill the cricket, after that emerge from its body. Of three Hawaiian Islands (Oahu, the Big Island of Hawaii, and Kauai) where both the cricket and fly are found, Kauai has the highest prevalence of the parasitic fly, but also of non singing male crickets. "With each visit we made to Kauai since 1991, we observed fewer crickets," said Marlene Zuk, professor of biology. "In 2001, we heard only one calling male. But then in 2003, although we heard none of the male crickets calling, we found they were not only in high abundance but nearly all of them also had female-like wings, lacking the fine structures needed to produce song." Male cricket populations in Oahu and the Big Island - as well as descendants from eggs collected on Kauai before 2003 - continued to show normal wings. Only Kauai displayed mutant male crickets in 2003. "Loss of calling clearly seems to be protecting the male crickets from the deadly fly," Zuk said. "But this protection has a heavy price: the loss of its sexual signal. This is obviously a huge loss for the cricket, akin to, say, finding that all peacocks in a forest have lost their tails. One might ask how then do female crickets locate silent males?" It seems that mutant males behave as 'satellites' to the few remaining male crickets that can call, by congregating near the singing males, and so females find and mate them, as field experiments suggested. "While we were surprised by the extraordinary speed at which the mutation spread, what is more interesting is that, ordinarily, you would expect such a change in wing morphology to quickly disappear, because males couldn't attract mates," Zuk said. "Instead, the behavior of the flatwings allows them to capitalize on the few callers that remain, and thus escape the fly and still reproduce. This is seeing evolution at work."