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The Urth list — 1 messages, 1 voices, 16 Jun 1998

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Dan Parmenter — 16 Jun 1998, 07:30

From: David_Lebling at avid.com

I think the general explanation that is given in genetics textbooks is not that the moths "evolved" a black color and then a white color. Rather, there was (and is) a certain amount of genetic variation in the moth population. When pollution made the trees dark, there was selective pressure that favored darker colored moths (i.e., birds found and ate the light-colored ones). So, after a while, the population was mostly dark-colored, but this didn't mean that the gene for light-colored-ness disappeared: it just got less prevalent. Eventually, the pollution was cleaned up and the selective pressure went the other way, as the dark moths became more noticeable, so the occasional light colored moth was able to reproduce, leaving more light colored moths, and so on.

Yes, but as Mantis pointed out, it's often used as a "textbook case" of evolution. I remember very well receiving just that explanation in my eighth grade science class and I was being deliberately provocative in my post about it by taking the extreme position implied by Mantis' post.

If there is some representation of cayenne pepper genes in the moth population, then eventually dyeing the trees red will create selective pressure favoring red moths. Otherwise, you're in the position of waiting for the moths to mutate at random into red. This is roughly as likely as turning a mouse's tail into a hand by slapping it against a tree.

Yes, of course. Mostly I just wanted to make that stupid pun; however, such an absurd statement could conceivably follow from an explanation of evolution given in terms of Peppered Moths, which as you've pointed out is something of a misconception, though it seems that the same mechanisms are at work.

Actually, we didn't get the part about the moths becoming white again. I heard about that later, in the context of a later discussion that touched on the fact that the factories weren't putting out so much soot any more. So perhaps my eighth grade teacher wasn't so off.

Dan