

Re: A fully developed creature can evolve?

Source: <http://sci.tech--archive.net/Archive/sci.bio.evolution/2005-09/msg00377.html>

- *From:* "Perplexed in Peoria" <jimmenegay@xxxxxxxxxxxxxx>
 - *Date:* Sat, 17 Sep 2005 01:21:15 -0400 (EDT)
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"Tim Tyler" <tim@xxxxxxxxxx> wrote in message [news:dgf0lc\\$1sk9\\$1@xxxxxxxxxxxxxxxxxxxxxxxx](news:dgf0lc$1sk9$1@xxxxxxxxxxxxxxxxxxxxxxxx)
> Perplexed in Peoria <jimmenegay@xxxxxxxxxxxxxx> wrote or quoted:
>> ... the mechanism
>> I suggest would only work if the gene flow among populations is less
>> than about one migrant per generation. But this means that each subgroup
>> is an incipient species!
>
> The "one migrant per generation" rule is useful, but isn't the whole
> story. Various things can influence the figure upwards. One is
> a fluctuating population size – as described in:
>
> ``Is One Migrant Per Generation Sufficient For The Genetic Management Of
> Fluctuating Populations"
>
> – [http://www.cambridge.org/uk/journals/journal_article.asp?](http://www.cambridge.org/uk/journals/journal_article.asp?mnemonic=ANI&pii=S1367943000000986)
> mnemonic=ANI&pii=S1367943000000986

Thanks Tim.

This seems to have been one of those good days when I learn TWO new things!

It appears that the number of migrants per generation should be N/N_e where N is the 'census population size' and N_e is the 'effective population size'.

The difference between these two is nicely described here:

<http://www.zoology.ubc.ca/~whitlock/bio434/LectureNotes/05.EffectiveSize/EffectiveSize.html>

[Beware. Long URL break – must be rejoined to work.]

This change strikes me as intuitively reasonable because the migrant genes are diluted into the census population, but you really want them to dilute the effective population with one effective genome per generation.

> Another is sexual selection. The one migrant per generation rule is
> based on the idea that the migrants have reasonable mating success.
[snip]

And that reservation is also reasonable. Adverse sexual selection could prevent the migrants from even getting into their fair share of the census population.

- **References:**

- ◆ **[A fully developed creature can evolve?](#)**
 - ◇ From: Artificer
- ◆ **[Re: A fully developed creature can evolve?](#)**
 - ◇ From: Perplexed in Peoria
- ◆ **[Re: A fully developed creature can evolve?](#)**
 - ◇ From: g
- ◆ **[Re: A fully developed creature can evolve?](#)**
 - ◇ From: Anon.
- ◆ **[Re: A fully developed creature can evolve?](#)**
 - ◇ From: Perplexed in Peoria
- ◆ **[Re: A fully developed creature can evolve?](#)**
 - ◇ From: Tim Tyler

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