Re: Darwin, Evolution, the Animal Kingdom, and Man

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From: Lester Zick (*lesterDELzick_at_worldnet.att.net*)
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On Fri, 03 Dec 2004 10:37:21 −0500, Wolf Kirchmeir
<wwolfkir@sympatico.ca> in comp.ai.philosophy wrote:

>Lester Zick wrote:
>[...]
>>
>> I find myself wondering if there are any biological evolutionary
>> mechanisms other than random mutation mechanisms of natural selection?
>>
>> Regards − Lester
>
>
>Don't wonder, read.

The question was rhetorical, intended to promote discussion of a point
related to the issue of evolutionary time periods raised by others
which requires considerable reading between the lines.

> You'd find out, eg, that the expression of genes
>depends on the organisms' environment, which means that inactive "legacy
>genes" may become active when the environment changes. Contrarywise, a
>stable environment tends to prevent evolutionary change, since mutations
>are more likely not to have a beneficial effect; but some mutations
>survive because they have no effect, and may come into play when the
>environment changes; and so on.

Well, one of the things I'm trying to decide is the meaning of the
term environment in this context, whether it includes biological
factors internal to an organism in addition to the conventional
external environmental factors.

> Or that genetic drift is a powerful
>weeder−out of genes, some of which might have enabled an organism to
>survive environmental changes. Or the fact that most genes code for only
>part of a protein, and that genes must be cut and pasted to make the the
>sequence that produces a particular protein. That's important because

>the cutters and pasters are RNA molecules, which are more likely to
>respond to environmental inputs that DNA molecules; which in turn means
>that environment can cause changes in the organism, albeit in a very
>roundabout way.

Or that an organism might cause change in itself.

> Or that bacteria appear to have a mechanism that
>rnadomly rearranges DNA, which appears to be a major factor in the
>development of antibiotic resistance. And so on. It's much more
>complicated than random genetic mutation. {Any errors in the above are
>my own.}

Well, retroviruses also cause DNA modification. I wonder if
retroviuses might be a primary agent of evolutionary change?

>Bottom line: evolution is the effect of the interaction between genes
>and environment. Neither can work withouit the other.

Yet my question returns to the issue of what exactly the environment
is relative to evolutionary genetic modification and the periods of
time over which it is reasonable to expect it to act? We already
suspect that evolutionary change proceeds by fits and starts rather
than continuous modification. So I think it is reasonable to ask what
agents might be at work apart from random mutation, which I have never
found to be particularly credible explanation for evolutionary change.

However, I certainly appreciate your comments, Wolf.

Regards − Lester