Re: Three roles of "the population".

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From: Perplexed in Peoria (*jimmenegay_at_sbcglobal.net*)
Date: 02/26/05

Date: Fri, 25 Feb 2005 23:57:07 −0500 (EST)

"Name And Address Supplied" <name_and_address_supplied@hotmail.com> wrote in message news:cvnrl7$1vgh$1@darwin.ediacara.org...
> "Perplexed in Peoria" <jimmenegay@sbcglobal.net> wrote in message news:<cvm8f1$1fbv$1@darwin.ediacara.org>...
> > It occurs to me that some of the confusion regarding kin selection and
> > group selection occurs because of a failure to distinguish the three
> > different roles that "the population" plays in our models. There
> > are really three different "kinds" of populations.
> >
> > One is the "breeding population". [snip]
> >
> > A second is the "competitive population". Density dependent selection
> > acts to keep the size of this population constant. [snip]
> >
> > The third is the "social population". [snip]
>
> I'd add a fourth form, and infact this is the only one that I would
> refer to as 'the population'. It is the grouping of conspecifics in
> which we are interested in focussing the problem upon. It is with
> respect to this population that we measure allele / phenotype
> frequencies. This is the population whose evolutionary change we are
> ultimately interested in.
>
Hmmm. At the risk of sounding like Edser here ...

If your fourth kind of population is different from my second kind − the "competitive population" − why are you measuring allele frequencies rather than allele population sizes? I.e. why deal with relative fitnesses rather than absolute fitnesses?

> The breeding population is usually referred to as 'deme'. I tend to
> refer to the competitive population as 'arena of competition' or
> equivalent. And the social population is usually referred to as a
> 'social group'.

I agree that you have identified the standard terms for my first and third kinds of "populations". It was not my intent to replace these

standard terms. I only refer to them as kinds of "populations" in order to put all three concepts on the same "stage" so that they can be compared.