

Cripp's Corner. Forest-Park. Boston.

Aug. 18. - 29

My dear Fisher

I am not sure if we see eye to eye on one point, and if I try rather insistently to get ~~you~~<sup>your different</sup> ~~you~~<sup>to</sup> write it is not to extract a reply. That I shall best get when I come to read your book a leisure. All I want is that you should think it over once again; and, if you should stick to your guns, that you may possibly be helped to put your points clearly.

You say that "any organism" must be at a pinnacle of adaptive achievement. I agree when considering qualities ~~depend~~ not necessarily correlated with any other quality. When a hundred different qualities, all dependent on different genes, ~~which~~ are ~~need~~ ~~to~~ to be modified simultaneously in a parallel manner, it seems to me that evolution will proceed so slowly that at no time could an organism be described as at the summit of adaptation. Of course it depends on the meaning. If a large group of men could be transplanted backwards onto England when it was inhabited by monkeys, would they not exterminate those monkeys? If so can you describe the monkey of past days as being on a pinnacle of adaptability? Possibly you may reply that some of his genes which man possesses had not then appeared or

carte, and that selection could not at that time have produced man. The same argument, however, applies to early mankind, when we may presume all the human genes were occasionally appearing.

I tried to put in my paper on natural selection why I held that natural selection must be an exceedingly slow process, always in action, <sup>thus being</sup> ~~but~~ against the idea of ever reaching a pinnacle. A mutation which rarely occurs may rarely meet with the right combination of other genes to allow it to survive for a single generation. When it does so, though it will disappear, it may slightly increase the proportion of other genes with which it has to live in order to survive, and thus slightly increase the probability that the following <sup>geno</sup> appearance ~~of~~ of the mutant type will hit on the right combination. This is how I regard the slow continuous process going on.

All the species of birds ~~may~~ have arisen from one species of reptile. But I imagine that when that one parent species of reptile was alive, there were other reptiles also, and that all the species of reptiles were then being slowly evolved in a parallel manner,

Even though only one of them was destined  
to survive.

If all organisms are at any one time  
perfectly adapted to their surroundings, then  
it seems to me that change can only occur  
through a change in the physical environment,  
or a new organism migrating in from  
outside. Both would be rare events in the  
depth of the sea for example. And, if this  
were so generally, ought not evolution to go  
by jumps? The collection of horse fossils  
seems to indicate that it has been a slow  
and continuous process. Can this be consistent  
with each stage having been a pinnacle?  
It seems to me that specific characters,  
being rapidly modified, may be more jumpy.  
Minerals might easily alter quickly because  
of the migration of forms from one district  
to another.

You say that Morgan means that all  
possible modifications due to internal cause  
are already implicit in the organism as it now  
exists. Yes, if you agree that they may not  
appear for millions of years.

Now a hasty written, & badly squared.  
But it may show what I am driving at  
Yours truly & Dawn