

Gunby Hall.

Brighton - le - Marck. Dines.

Oct 21. 25

My dear Fisher.

I have been thinking at odd moments about the problem you told me you were writing about, and I want to put down a few ideas mainly to get them out of my own mind.

As to big mutations, I have no doubt they are generally harmful. But are not they rare and soon stamped out? If so they are of no great importance in evolution.

As to small mutations, these are what I believe evolution mainly relies on, and it seems to me difficult to prove that they are more often harmful than not. The geological man who spoke about evolution at the British Ass spoke of perfectly adapted organisms. Till we have a fish with a snow propeller we shall have no perfectly adapted fish. Perhaps there may be such a thing as an organism which is as perfectly adapted to its environment as selection can make it. In that case say hypothesis: Every mutation must

be harmful. And if the inheritance of acquired characters makes an organism of this perfect type mutate more in one direction than the other, it must do harm. When the neck of the giraffe is as long as it can be without so far making its flight difficult as to outweigh the advantages of getting higher leaves, Lamarckism will continue to do it harm.

Then again there is another thought which I guess I shall not express clearly. Selection may be as it were bringing an organism up against a maximum. Then when that maximum is reached, all mutations will be in one direction. If this were the case, would not the curve of distribution be asymmetrical? If the curve is normal, does not that imply that mutations are generally about equal in both directions? When that is the case the action of mutations in going counter to selection will be only to make the variation

about the mean greater. All that the
inherentance of acquired character would do with
a perfectly adapted organism in these circumstances
would be to push the mean of distribution away
somewhat from the point of perfect adaptation.
If an organism is being slowly adapted to its
surroundings, not having got to its position of
maximum adaptation, Lamarckism would be
nearly as likely to be harmful as beneficial in
this way, because acquisitions would affect
one quality out of proportion to the needs of
adaptation in so many ~~cases~~ ^{other directions}.

Now this may be nonsense, as it is not
much thought-out. So don't reply, and remember
I have written it mainly for my own
amusement

Yours hastily

Lamarck