



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

I tried to put in my paper on natural selection why I hold that natural selection must be an exceedingly slow process, always in action, ~~standing~~ <sup>working</sup> 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 ~~mutation~~ <sup>gene</sup> of the mutant ~~type~~ will hit on the right combination. This is how I imagined 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 sorted in a parallel manner,

the following  
appearances

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 changes 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 they 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. Mimicry 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.

This is hardly written, & badly supported.  
But it may show what I am driving at  
Gerrit S. S. & Dawson