

May 14. 28

Cripps's Corner. Forest Row. Sussex.

Dear Fisher.

I am not sure that we have caught each other's meaning about useless characters. You say that the length of the 7th joint of your wedge is a by product of the developmental changes which have been selected. If I could be believe that all these unimportant specific characters were necessarily coordinated with some other character under the sway of natural selection, I should feel that all my difficulty had vanished. I think I mentioned how my father, in the *Descent*, said he had made a mistake in not considering these useless characters, and how he strove to account for their uniformity. In the *Origin* - I quote from memory - he speaks of the uniformity in the same species of two interlocking species, of every detail of structure. Can their uniformity in every detail be evolved to some useful structure? In Chap II, 2nd para 1 - "individual differences", he suspects that we see in some polymorphic genera, "variations which are of no service or disservice to the species, and which consequently have not been seized on and rendered definite by natural selection". But how then have they become sufficiently definite to separate even varieties? In Chap V, "Correlated variation" para 5, he speaks of modifications viewed as of high value

If not, it does us much matter

being possibly due "to the laws of variation and correlation, without being" of "the slightest service". Here, I presume, he meant correlated with some useful structure. But then should be read in conjunction with what he said in the "Descent".

What is an "important structure"? Is it not one generally which is bound up with the whole method of functioning of the organism? If so it is one tied by ties to other structures, and in such circumstances it cannot vary much. The systematist is, so I think, on the horns of a dilemma. He must take qualities which do not vary so much as to overlap the two groups he is comparing. But, if descent is the real basis, he must take the more rapidly changing characters, which are the most variable. The colours of butterflies vary very greatly, but are a useful specific character.

I have written out my correction of my error, as I now think it, in my Natural Selection paper, and I will send you a copy before long. I should like ~~my~~ your considered judgment some day. I hope to go to the North of England & Ireland from May 20 to June 27, or thereabouts, and shall then devote all science to the winds - unless I have to come back for any reason.

Yours in haste
L Darwin