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May 6, 1959.

Dear Crick,

This title

Here are a few lines to congratulate you on your F.R.S. It gives one a satisfactory feeling that one can be fairly sure of getting a job if need be, and that someone besides old ~~me~~ really thinks ones work has been good. I should be fascinated to know what you are going to do next. Here everyone thinks they would like to do your sort of work, until I give our mathematicians the problem. "How many amino-acids can you represent with sequences of a members chosen from b nucleotides, given that all sequences of a beginning at the wrong place are nonsense?" Much more interesting to me on your "model", if we define a unit mutation as the substitution of one purine ^{or pyrimidine} in a chain, what fraction of mutations will give actual proteins? And what happens when you get a nonsense sequence of three? Does this mean the end of a ^e peptide chain? In other words do nonsense mutations break ^e peptide chains? If so one can see at once why most mutations entail loss of function.

The work which I am getting started here is elementary biology which might perfectly well have been done by Darwin, but wasn't. However it is exciting enough, and may give quite fantastic increases in crop yield. Nobody seems to know anything about variation of organs in the same plant. In fact S.K.Roy finds that while the mean petal number (for example) may hardly change in a season, the variance may double. However I suppose this is less up your street than the origin of life₂ in Penrose's laboratory.

Dr. ~~Francis Harry Compton~~ Crick, F.R.S
~~Member of the staff of the Medical
Research Council Unit for Research,
The Cavendish Laboratory,
Cambridge.~~

Yours sincerely,

J. B. S. Haldane
(J.B.S.Haldane)

replied