

CALIFORNIA INSTITUTE OF TECHNOLOGY
PASADENA

WILLIAM G. KERCKHOFF LABORATORIES
OF THE BIOLOGICAL SCIENCES

4th. February 1938.

Dear Professor,

I imagine by this time that you will have returned from your Indian trip. I hope that it was successful and that you enjoyed it.

I had a visit from Yates when he was here a few weeks ago. He seems to have had a very comprehensive tour round the U.S.A.

We have not long returned from a visit to San Francisco and its surroundings. During the visit I saw Clausen and his tobacco work which seems to be getting somewhere with the analysis of the relations ~~of~~ of Tabacum to its reputed parents. His monosomics are proving really useful in this connection. I am looking forward to seeing a published account of it in the not too distant future. We were also at Stanford and saw Beadle's stuff on the eye colour substances of Drosophila. His latest results seem to show that these substances are very wide spread among the insects. They have succeeded in extracting a crystalline material of some kind that is very powerful in its action in producing eye pigments. It may be pure $\frac{+}{\lambda}$ vermillion $\frac{m}{\lambda}$ substance or in any case a much nearer pure substance than any so far obtained. While in Stanford we also saw, (a) Danforth's mice and his skin graft stuff and (b) Burlingame, who, on hearing that I came from your lab., informed me that they were trying to persuade you to come to Stanford.

I have not yet got the final Agreement signed with the John Innes yet, but, as I have a letter from the Council confirming the appointment and also the salary, I imagine that the Agreement is a mere formality. It is held up because the final form has not been agreed upon by the other members of the staff, to whom it is also to be presented for signature. In a month or so I must take steps to resign from U.C., I suppose.

Fabergé wrote to me that he had cleaned up the "very" and "not very" umbrous story, and that it was not what I originally supposed. I feel sorry that it did not turn out that way, as it was a pretty story, but I was not particularly surprised, as the backcross to stock, which I put up to give my old

story a testing out, was failing to conform to expectation even before I left for the U.S.A. The discrepancy between the results of that test and expectation on my old view was very wide even then. I am glad that Faberge^f has done such a good job on his first attempt with mice.

With regard to my work here, it is going on just about as things usually do - viz. some things are coming out and some are held up by unexpected difficulties. My first cross-over experiment with homozygous inversions, such as will give most valuable information on the subject of the mechanism of position determination in crossing-over, was ruined because one of the loci used gave 2:1 ratios on backcrossing. This now seems to be due to a small translocation but I have not got the final proof of this and in any case some of the results are still a bit mysterious. However, I hope to get it thrashed out soon and then to get the cross-over experiment right next time.

Strutevant and I are just writing a small paper on inversions in the wild, with special reference to heterosis and recombination. I expect that you will find the paper of some interest, even though, possibly, disagreeing with some of it, as it deals to some extent with the selection of crossing-over in nature.

Dobzhansky, who is now catching flies in Guatemala, and I have been taking measurements on the races of *D. pseud-obscura*, and by using discriminants, have found a nice difference between males of different races, but not between the females. The sex-combs (number of teeth) seem to offer some hope of easy distinction between the two races in the wild. However, we are satisfied with having shown a morphological difference, at present.

I am giving a course of lectures, to the graduate genetics class, on statistical methods. It is uphill work to try and convey to them the underlying principles - they all want to use statistics like a cook book. However, I am making some head way and in any case am quite enjoying the lecturing. It at least serves the purpose of making me get things clear.

Please give my best wishes to Mrs. Fisher and to Taylor.

Yours,

K. Matthei