

CALIFORNIA INSTITUTE OF TECHNOLOGY  
PASADENA

DIVISION OF BIOLOGY

November 22, 1954

Dear Francis

I have meant to write for several weeks but I haven't had the time to write a long letter. Tonight I am also pressed and so this must be short.

Our schemes concerning RNA. They remain much as before except that we find any alternative scheme involving



is just as plausible as our original one. It gives an opposite

prediction for the RNA base ratios (high GC - low AT) and

in fact, this is observed. However in view of possible

complications like RNA self replication at differential rates,

in hesitant to decide between alternatives. Also RNA

chains with triply esterified PD<sub>4</sub> are tight though buildable.

While Coley accepts contacts, better than in some previously proposed

structures, I really don't feel happy about them. Hence RKA

may leave DNA template, as soon as chemical linkages are formed,

If this is true, <sup>all</sup> the monomers must be crystallized on DNA

surface before joining up. This can be done with hydrogen

bonds between PD<sub>4</sub>'s and sugar hydroxyls, energy coming

either from ADP like source or from cyclic anhydride bonds.

We continue to like anhydrides as precursors.

All of this was good practice for our current attempt

to make proteins on N.A. surfaces. A horrible task from

every viewpoint. Nevertheless we persist and think we shall

find a code, though we doubt that this shall be correct

one. Am back at general idea of DNA-protein. It would

be ridiculous to miss this because of prejudice for

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RNA. Am going under assumption that all (or almost all) sequences are possible. 39 steps in Corticotropin, support this phasit conclusion

Space filling models are essential even though troublesome and forever falling our and apart. We have almost all of Corey's set but this is still not enough.

Cambridge must acquire set if it is to enter code game. Need approximately 2000 atoms [2 \$3000]

This is not much money at current rates. I shall

write to Max about this. I cannot really change

deal since it would snell of my returning to

Cambridge. Hence Cambridge must "enthuse" spontaneously

Crellin has almost put R. Anode into use and so they cannot easily turn down request. ~~So~~ should be done soon or Alex Rich will ~~seize~~<sup>seize</sup> upon idea of having his set made by Caltech and then Cambridge will wait for years.

I am going to Berkeley over Thanksgiving and to East Coast over Christmas. Will try to be in Cambridge by summer. RIVATIE CLUB has sponsor - Quartermaster Corps - U.S. Army. Will pay for biannual meetings in Boston. We shall try to have you invited for Spring Meeting.

What is Maurice doing.

regards to Odile

Jim

PP/CR/D/2/45

Please send me some

P.R.S. reprints. Can I

have 100. Many

requests.