Kornberg

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Dear Josh:

I have wanted to write you for a long time now and your note and enclosures gives me the necessary activation energy. You seem to have done a remarkable job on the unfertile soil of Mr. Flood's committee and I hope it proves to be a good seed crop. Of the numerous things people do to improve the relationships of science and society, the most likely to be useful is the education of our politicians. Now I'm afraid that there is the added burden of neutralizing the impact of the alarmist fringe of scientists. We'll try to help when I get back.

Your article carries the message very effectively but as always the headline writers screw up its impact ("Government is most dangerous of genetic engineers"). The words "government", "dangerous" and "engineers" are all negative. We desperately need to preserve our partnership with government; without big government (Washington) we're bankrupt. The dangers in genetic manipulation, as you point out, are minor compared to cultural (economic, political) initiatives. And finally I have come to realize that we must dump the term engineering, innocent and proper though it seemed when initially associated with genetic applications. It usually is given a sinister connotation. I think genetic therapy is far more preferable and among its many forms may include vaccines, surgery and even engineering.

KORNBERG

This sabbatical escape has been worthwhile even if only as a form of punctuation. It has been more however. Sylvy and I have learned a great deal about England and have a far more sympathetic and respectful attitude toward the land and its people. Scientifically, I have learned useful things about liposomes

(dispersions of phospholipids that take vesicular forms), phospholipid chemistry and the applicability of some physical methods (x-ray, NMR, fluorescence) to membrane work. Most of all I have developed some confidence that biochemical attitudes and approaches are needed and timely in the membrane field. We need to purify membrane enzymes (assuming that all membrane proteins are functional) even though their design gives them properties which defy current techniques for fractionation. It is a jolt to be thrown back at least 30 years in the time scale of protein fractionation and accept the paucity of methods and the frustratingly slow progress (by a factor of about 10) in working out useful steps. But this might be done and I feel in a better frame of mind to do just this when I get back. Areas in which we can try to make such applications are DNA replication, sporulation functions and biosynthetic assembly.

I know from many sources that this last spring has been terribly exhausting and depressing at Stanford as well as on other campuses. In coming back without this battle experience I may not be in a position to see things in accurate adjustment. Nevertheless I hope that the lifeline of research ~~&~~ and scholarship is still discernible and reinforceable. Dave Hamburg and Paul Berg have seemed reasonably cheerful and reassuring.

Hope you have found some relaxation and fun despite the turbulence. Our best to you and Mary Ueita.

BT

See you in about a month!