December 19, 1984

Dear Joan,

We are all very grateful to you for an artful presentation of magnificent material at the Harvey lecture last night. Having that series in my backyard is one of the great compensations of living in New York.

Your remark about medical application assisting basic research touches an issue I have been thinking about for some time. In fact, (stated necessarily simplistically), one can argue that:

a) Only now—in a "3d cycle"—are we again entering an era where basic science really contributes that much to medicine, and

b) As much as ever, "medicine"—and I generalize that to natural history and other confrontations with praxis and the real world—will probably remain the seat of the most revolutionary discoveries.

The reason for the latter, I think, (going back to Plato) is that we are still stumbling about in a dark cave, and our models of reality are so simplified. We have to sharply reduce the number of intervening variables in order to do experimental science. Nature is not so constrained, so when we go out there and look at disease, or speciation, or try to build a bridge, we discover a lot of new phenomena that we just would never have built constructively in the lab. Where would basic immunology be today if not for the phenomenon of the myeloma? In re your auto-antibodies, people were unhappily subjected to self-inoculation with i) an unwonted range of antigens, and ii) untempered by auto-tolerance, such as you would never have invoked experimentally, but can exploit after the fact.

I don't recall just what I may have in print on b); I have been writing about a). After I finish this letter, I'll look and see. You will in any case be interested in a book that Henry Beecher edited: "Disease and the Advancement of Basic Science", Harvard Press, 1960.