October 15, 1947.

Dear Ed-

If I haven't thanked you yet for sending those extra J Bact reprints, I do so now; I would have run out entirely without the supplementary supply. Everyone here wanted one.

ACT

I met your father last week or so, which as with Peterson too, was rather like encountering one's academic granddparents. The Medical School generally seems to be a less predominant research part of the university than it was at Yale, I suppose because of the rôle of the Ag School.

There has still been no opportunity for research work, although my "temporary" office is completed; in a couple of weeks however I should be able to get started. The permanent lab is still being blueprinted and financed, and although slowly is going along smooth ly. Supplies and equipment are beginning to come in, some purchased some gift (as biotin from Merck!) We've picked up a good large steam autoclave as War Surplus for $55, saving over a thousand! Not so lucky on a binocular microscope (Spencer) where we had to pay somewhat over list for immediate delivery. The main immediate problem is financing an accountvfrom the Univ. storeroom so that I can draw " trivial" supplies and begin to work.

Did you see Wyss's abstract in same issue as recent J. Bact.?

I think I mentioned my program on glycosidases in coli. I had in mind that there appear to be at least two levels of specificity in these enzymes (from plant sources): the glycosidic linkage and the nature of the aglucon. Coli "maltase" for example, has no

effect
on alpha-methyl glucoside, although both are alpha-glucosides. Some strains of coli, however, do attack a-methyl glucoside, so that it may be possible to obtain mutants of the maltose+ K-12 which will also attack the glucoside. Problem: is this modification a change in the "maltose" gene, or in another. It will be necessary to obtain a maltose- strain and test for allelism. If a setup can be found whereby a strain must be "maltose+;X+" to attack X, and either maltose- or X- are inactive, one might infer that both the maltose and the X gene must be functioning to produce Xase, ergo that two genes are required for one enzyme. I haven't written this as clearly as I should but perhaps the point is down. I realize the possibility of anaphragmic mutants, etc., but to cite these too freely is to destroy any chance of verifying the 1:1 theory.

On the other hand there may be something fishy about the whole story of glucosidase specificity, or else about the accepted configurations of the disaccharides. Reading the literature, there is a definite correlation between the ability to attack cellobiose (4-glucose b glucoside) and a-methyl glucoside. On the other hand, maltose (4-glucose a glucoside)and b-methyl glucoside are attacked by all of the coliforms tested. There is not quite enough to make a definite judgment, but it should be emphasized that the accepted configurations are based simply on another set of enzymatic activities: emulsin.

"transformism" is not being abandoned by any manner of means, but the carbohydrate problem is one which seemed to fit in well with the help I would be able to get from Biochemistry. Also, Dickson here and one of his students have worked a method to follow the entire life cycle of certain smuts in culture. From all I've heard, they should be excellent genetic material, and I'm working now to arrange some sort of collaborative program. Esther is working in Perry Wilson's lab now learning Azotobacter which she may or may not use as material. One of

Barker's students (Löve) did his thesis on Azotobacter mutants one of which was blocked in the pyruvate-acetate reaction! His strain, however, will assimilate only acetate and related compounds, and not pyruvate or more complex compounds! They obtained several mutants which, in their hands, reverted, and none which were clearcut N-nonfixers.

You may also be interested in a reference to a bacterial aromatization of c-hexanedarboxylic acid: Jezierski & Frei, Helv Physiol Pharm Acta 4:395-400. 1946. E. coli included.

As to my thesis: I don't have a suitable draft which could be copied! If Betty is too busy, could you, whenever the Univ. copy is in your hands give it to a professional manuscript copyist and send me the bill? The storeroom already has my advance payment for binding 3 copies of same (try Demander's, on Elm I think).

That's about all for now. Best regards.