MH 76 F5

February 15, 1938

Dr. Kai O. Pedersen
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Dear Doctor Pedersen

I was indeed happy to get your letter and the revised manuscript. It is a pity that so much work remained to be done and I hope that you found it interesting enough not to be a burden. Your new method of calculation appears to have worked beautifully, and the unusual dissociation effect of dilution and the clear-cut denaturation effects are most interesting. I hope if any material is left and you can use it in connection with any of your future experiments, that you will feel perfectly free to do so. If, as we should like to do, any of us come to Upsala, it would be primarily to study antibodies and bacterial proteins.

To take up the points you make in order: I am glad the M.W. did not go down as much as you thought, and the two methods of calculation are certainly in excellent agreement. Please thank Polson again for me for his painstaking help, also the unknown Mr. Andersson. The new equilibrium runs and all the necessary checking must have been a great deal of work for you, and I am sure there were many other things to do besides. Owing to their uncertainty I

have omitted the figures for runs III and IV to save space, merely mentioning them. Could you send me the initial concentrations of the other equilibrium runs, as I should like to insert them when the proof arrives? I am putting in all the Figures, and hope the editors of the Journal of Biological Chemistry will not object to so many, for each has its interest.

I have put in a few words about the dissociation in the discussion.....I had no idea that the hemocyanins were easy to get.. I have also modified the statement regarding the stability of the old preparations, also about the low isoelectric point. I hope you will get around to your comparison, some day, of the proteins of different animals... Your English was excellent and there were very few changes to make.

As for the effect of acid on thyroglobulin, I set up a series at 0.32% concentration at room temperature in citrate HCl buffers at pH 3.53, 3.87, 4.50 and 4.77 (pH of solution). The first remained clear, but precipitated rapidly when chilled next day and brought to pH 4.86. The 3.87 tube immediately became opalescent and precipitated in a few minutes, the 4.50 tube slowly became opalescent and precipitated in 15 minutes, while the 4.77 tube was opalescent after some hours and partly precipitated next day. So it boks like a hydrogen ion effect unless both citrate and acetate are exceptional.

The only point in the MS. about which I am not clear is the following, near the

bottom of p. 3: "denatured thyroglobulin is practically insoluble in acetate buffers from 4.3 and upwards"... Does that mean to 4.8, or to 5.9 as in phosphate? Also, could I have the wave-length at which the sedimentation velocity runs were made?

My Ph.D. candidate who is working on thyroglobulin is about to start a fresh preparation and I am wondering whether you would care to have me send you some via Dr. Tiselius. I had a visit from him recently and enjoyed it very much. He is certainly a stimulating and splendid person.

Please give my best greetings to Dr. Lamm and the Quensels, also tell Mr. Lunt to get the stamps from the letter I am also mailing to Professor Svedberg. Like those on this letter, which I should be glad to have you return to me in your next letter, they are an entire booklet sheet of an older issue and should be quite unique in used condition.

With heartiest greetings to you and Mrs. Pedersen, and again with warmest thanks,

Sincerely

Heidelberger

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