

on train Innsbruck - Zurich

My dear Francis,

First let me tell you why I am here.

I am doing a combined holiday & work trip again. I am going to see Signer the n.a. man in Bern & some of Frey Wyssling's people in Zurich. But the real trip was holiday. First to Munich to pick up a young friend of mine & see the artists beer cellars then to Innsbruck & Bolzano to see Italy but it is only half Italian so we took a bus down to Lake Garda & stayed at the Gardone Riviera & walked under all the oranges on the trees in the streets & such like. Then a wonderful day skiing at Selva Wolkestein in the Dolomites & back to Innsbruck. Now I am on business to visit the people in Switzerland.

But unfortunately I have to pay for almost all this trip myself which is shocking & unusual for me but already I have another trip planned on the MRC (actually they didn't pay for my other trip but Unesco & other people). I have got much better

X ray pictures of the sperm Squid which show very nicely a whole series of helical layer lines & one inter-micelle spacing. These spots will not overlap when a

disoriented specimen is used & I want to do it on living sperm in glass tubes. I believe

your friend in Rome offered me use of an X ray tube (I am sure he did) & what I want you to tell me is his address so I can confirm this & can go to Naples (you bet)

I ~~please~~ name.

Thank you very much for the invitation but as I have just got back I would like to stay in town this weekend. Possibly I could come for the next Hardy Club?



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I collect the sperm & go by train to Rome & X-ray them. They live for days & it is all very practicable. I don't know of any X-ray set in Naples but will inquire there too but am very doubtful. I will bring my own camera & any ordinary tube will do. Also I will try living spermatozoa in glass for orientation. No H<sub>2</sub> & hurry up fuss.

I did the transform of the micelle of N.A. projected on a plane at  $\perp$  to the axis & have done more on the layer line intensities also repeated Oster & Riley on the long distances on wet gels oriented. I have found several of your suggestions very valuable but am fairly convinced for many reasons the phosphotungstic must be on the outside. There is just one part of the picture that still puzzles me but if beliefs are right we must hit on the explanation soon. I am really getting down to the job myself but haven't done anything on models & chemistry as I think the picture holds a key not yet recognized which will then more or less directly give us the model. I now take my own X-ray pictures & have made new cameras (hence better sperm pictures). But I believe as you that the key to w. protein lies in the crystalline picture. The exact crystallinity is of interest in that it gives us definitely the general micelle arrangement if you follow me. Franklin barks often but doesn't succeed in biting me. Since I reorganized my time so that I can concentrate on the job, she no longer gets under my skin, I was in a bad way about it all when I last saw you.

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When I saw Jim East before Christmas he said you people couldn't build a model along your lines if that is so it's not life's things at all anyway I am pretty certain the phosphates are on the outside. I want start making any references to the 'business' between you people & us over n.a. but look forward to discussing all our latest ideas & results with you again. Why don't you come & have lunch with me when you are next in town?

About Naples, we must also separate heads & tails (electrophoretically?) & Geoffrey is interested in isolating n.p. I think it could all be done in 2-3 weeks & be very worthwhile & cost MRC very little. The sperm is the only way I know of getting neatly oriented live n.p. Also I took a nice picture of living & rat thymus in a glass tube & think there is a whole new field there working with liquid cameras or monochrom (Franklin's pets) to show the pictures of living nuclei or whole cells with negligible cytoplasm are the same as disoriented n.p. as isolated by Brockman's. Thus we may be able to prove the helical idea for ordinary cells as well as special low water content cells such as Sperm. But apart from little excursion of a day or so this want want.

Did you hear I have got a RCO invitation? isn't it grand! In some ways I feel I am a very lucky fellow. And there I hope to collect sperm bundles which contain separate chromosomes & do X-ray pictures of each of the 2 chromosomes

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in the cell spirals & unspirals etc.  
This is rather ~~gilding the lily~~ but  
may be very useful in a year or 2's time to look  
the X-ray barman more with real chromosomes.

I hope I don't go to the devil with all these trips  
but so far I think they are well worthwhile from  
the work standpoint.

Give my nicest regards to Odile  
& tell her I thought of her while I looked at the  
oranges in Italy.

I hope Bragg neither banks nor bite,  
& your unit is filled with happiness. If these  
hopes seem foolishly extravagant please forgive  
me

Give my regards to John & tell him I wrote  
a series of letters to Chergoff.

Yours M.

Have you a better flat for me?

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