March 26

Dear Paul,

Today I heard a lecture given by Phillips on the structure of Hen's egg white lysozyme. They have determined the structure by x-ray diffraction to 2Å resolution. With some help from the known amino acid sequence they have trace the course of the polypeptide chain and have been able to construct an acceptable model.

Only about 50 of the residues are in α-helix and one end of the molecule is very complicated. There is a cleft in the molecule near that end into which three different inhibitors are known to bind. They can diffuse the inhibitor into the enzyme crystals without change in the crystal structure and have located the inhibitors to 6Å resolution. They will be able now to locate them to 2Å resolution. N-acetyl glucosamine and chitobiose both bind at the same place in the cleft and penicillin, the third inhibitor, binds higher up in the cleft.

There is only one histidine in lysozyme and it isn't in the cleft. There are 3 tryptophan residues in the cleft, a serine, and a couple of aspartics. The structure looks as though it might be able to spread apart at the cleft.

Phillips put their model out for display and it was such an exciting thing for me to look down the gullet of an enzyme that I had to tell you about it.

Mary sends her greetings and says she will write to Milly soon.

Best wishes,

Dale

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BY AIR MAIL
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AIR LETTER
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