GRADUATE SCHOOL
UNIVERSITY OF OREGON
EUGENE, OREGON 97403

Novick ↓

7-15-77

Dear Josh,

Sorry to be slow to reply to your note asking about bacteria that stick to the walls of the growth vessel but I have been hoping to write more than I'll do here but never found the time or clarity of mind.

I do not know of any work beyond the original observations that unlimited flow systems select for sticky bacteria. In fact, we never checked to see whether the bacteria selected using clean glass surfaces were the same as those which appeared with silicone covered surfaces. You are right, it would be difficult but not impossible to see if the sticky bacteria were better capturers of the limiting nutrient at very low concentrations.

I did once wonder why dentists didn't investigate the problem. Perhaps one could then come up with something which

would block attachment of oral bacteria to the teeth. A former student here I ran into tells me that dentists have been studying the mechanism of attachment. It appears to be stimulated by sucrose.

I did run into an interesting phenomenon which I have not been able to explain. As you know, ~~sometimes~~ one selects for ~~more~~ better capturers of the limiting growth factor in chemostats. However, if the wash-out rate is set very low, one selects for bacteria which ~~grow~~ seem to be unable to grow fast. In broth they have a sixty minute doubling time — no faster than they grow in minimal medium + required amino acid. It's not the result of inhibition by amino acids. It's as though there is a fixed range of growth rate and the range has been down shifted in these mutants. We were able to exclude ~~most~~ the more obvious explanations which occurred to me. Would like to discuss this with you further some time.

Best regards, Aaron