



NATIONAL RESEARCH COUNCIL
CANADA

MARITIME REGIONAL LABORATORY

HALIFAX, N.S.

11th March 1953.

Dear Joshua,

I have, with considerable interest and - I confess - some difficulty, read the reprints which you kindly sent me, and trust I will be permitted to make the following comments, all relating to "Cell genetics and hereditary symbiosis".

1. In my experience, many agents which kill algae tend to bleach them. I am therefore not impressed by arguments of certain workers (quoted by you on p.407) that SM acts by destroying chloroplasts and thereby rendering non-heterotrophic cells inviable.
2. I am not happy that, when a phagotroph ingests a particle, the latter becomes intracellular in the strict sense of cytoplasmic constituents. The mere fact that hunks of protein get digested in food vacuoles while the rest of the cell resists autolysis suggests this is perhaps a too simple interpretation. Hence the problems of a free-living cyanophyte anxious to become an endosymbiont are by no means solved when it's been swallowed (p.415).
3. I am not convinced that all bluish-green lumps are cyanophyte cells. The latter have, for one thing, Feulgen positive material, as befits their cellular nature: they also have highly characteristic pigments, reserve materials, etc. Until the case has been made stronger, I prefer not to accept the symbiotic nature of Pellicina, Cyanophora, etc. without reservations. (In the latter organism, I tried to get the blue pigment out with water following toluene treatment - but it didn't come, as it does with most blue-green algae.)
4. (Terminology). I do not accept zooxanthellae, etc. as phytoplankton (p.415).
5. The use of the word "chromogenic" needs sorting out between Lederberg, J. (1952) *Physiol. Rev.* 32:406 l.16, and Lederberg, E. (1952) *Genetics* 37:471 l.1.

Finally, while I am still in a carping mood, I hope you will restrain Engelsberg & Davis (MGB 7,36) from using "autotrophic" for their miserable little heterotrophic bacteria. We phycologists will be phurious.

With best wishes to Esther,

Yours,