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TEL. NO. 812—

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Dear Josh:

I cannot be sure from my lecture notes just when the work of Avery et al was first given in my cytogenetics course. I know that in the 1946-47 academic year that their paper was mentioned. Proof of this is the enclosed copy of Ellen Dempsey's class notes who took the course that year. Drew Schwartz was a member of the same class and his notes are similar to those of Dempsey.

There is no doubt in my mind that the implications of Avery et al's work were fully realized by the Columbia group of biologists in the 1940's. We had many discussions, informally to be sure, but we were ~~fully~~ aware of the significance of their studies.

Regards

Marcus Rhoades

cc MHR

Rhoades

[illegible]

Journ. Exp. Med. - 1944

10. Thymonucleic acid - Pneumococcus - Avery, McCarty & McLeod
each cell of bacteria enclosed in capsule → ◎
diff. types differ in structure of sheath - polysaccharide
Change may occur from smooth colony → rough
(virulent) (no virulence)

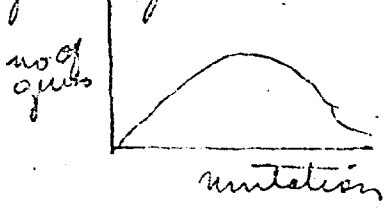
type 2 S → type 2 R
Griffith 1928 found if type 2 Rough grown in presence of a filtrate of type 3 Smooth, type 2R → type 3S
Subst. present in filtrate cause mutation
Avery, McCarty & McLeod - think subst. involved in change is pure thymonucleic acid -
if type 4 filtrate added it becomes type 4S -
Not known in this case whether change is in gene or cytoplasm since no sexual stage
this is first case of change in which you can predict result
Mirsky doesn't think thymonucl. acid is pure

Am. Naturalist - 11. Et. cholanthareae - another agent - Demerec
Strong → Jan Feb. 1947
Radiations & must. gas produce aberrations & mutations
no subst. known which will produce one & not the other

Spontaneous Mutations
Neel genetics 1942 - ~~ge~~ mutation rate (visibles) = 25/100,000 (X & autosomes) ← average rate
for Drosoph melanog. " " lethals in X = 2/1000

in maize mutation rate - A → a no data in corn of a → A
freq. for diff. genes - 1 - 492/million gametes
2 - 4/million
3 - 1/million etc.

If many loci studied



(alleles) genes seem to fall in all classes - some more mutable than others
at a single locus - a dominant allele Wx is stable, recess. allele wx - stable but another allele - mutable (wx^m) is unstable
In some stocks mut. rate raised by certain genes -
Demerec, Neel, 1942 Plange, Goldschmitt - found increase induced by genes