

constitution of these forms can be analyzed, much as in the cross-breeding test on higher organisms. However, unlike what has so far been possible in higher organisms, viable chromosome threads could also be obtained from these lower forms for in vitro observation, chemical analysis, and determination of the genetic effects of treatment."

from  
Muller, H.J., 1947 The gene. Proc. Roy. Soc. Lon. B134:1-37.

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Avery Gateway Dedication - 9/29/65

OK to DL + AM, E-MAIL, 7/7/98, 1:37 pm

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transcribed from audiotape \_980707

Theodosius Dobzhansky: introduced by Dr. McCarty

Dr. Bronk, ladies and gentlemen:

There are two kinds of scientific research. One kind is like extracting gold from gold bearing sand. If the sand has any gold in it at all and if a lot of this sand is worked over, some gold is something to be obtained. Science one hears is said, is 5% inspiration and 95% perspiration. A new technique, a new kind of apparatus, new experimental material are your gold bearing sands. There is, however, another kind of research. This kind is like finding gold nuggets. Here luck plays an important part. But luck is not the whole story, by any means. One must know where to look for those nuggets and where it is a waste of time to try to find them. Some of those will know, are lucky and find big ones; some are less lucky and find only small ones or none at all. Dr. Avery and his colleague, Dr. Maclyn McCarty knew where to look and found a large nugget. It was in 1940, or perhaps 1941, I do not recall the exact date when Alfred Mirsky took me to meet with Avery group. In those days, mutation genetics was studied in Drosophila of flies and bacteriologists kept themselves busy with bacteria. Avery was a big hazard with regard to pneumococci as merely little Drosophila. Yet he soon satisfied himself that what he had was genetic phenomena akin to mutation. More than that, these were mutations produced in a definite direction. A feat not yet achieved in Drosophila even at will to this day. Directed mutation is and always was a geneticist's dream and the Avery group had made this dream a reality. That is, a reality in pneumococci. The possibilities that would be opened is something of this sort that if achieved in man staggers the imagination... . direction of human evolution might then be opened. The Avery group has made the first step in this direction described by the author who knew certainly nothing possible about the Avery work, namely, by Theillard de Chardin in the following words which I quote, "the [...] which human research obscurely fosters is by grasping the very mainstream of evolution seizing the pillar of the world."

L. DOBZHANSKY  
(TRANSCRIPTION)