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May 21, 1965

Dr. F. H. C. Crick
Medical Research Council
Laboratory of Molecular Biology
University Postgraduate Medical School
Hills Road, Cambridge
England

Dear Francis:

In an article "Society and Science" (SCIENCE, 20 November 1964, page 1018) Dr. V. R. Potter of the McArdle Institute at the University of Wisconsin, in speaking of the "upsurge in molecular biology" indicated that the freeing of funds from the polio program as well as an increase in the support of cancer research has "permitted and encouraged the expansion of...research with no particular disease in mind or research that is directed toward understanding the nature of life processes in general.... What has emerged is the new science of molecular biology."

In a letter to me Dr. Potter has said "There is no question whatever that the modern era did not begin until 1944 and not really until 1950, regardless of the earlier origins."

Dr. Fred E. Hahn, Chief of the Department of Molecular Biology in the Walter Reed Army Institute of Research, wrote a letter to SCIENCE (19 February 1965, page 823) concerning Dr. Potter's article. In a letter to me, Dr. Hahn states that "as distinct from biochemistry, molecular biology is foremost concerned with the molecular basis of heredity and its phenotypic expression: the acquisition of this knowledge is brought about by a fusion of biochemistry, genetics, and information theory."

I am well aware of my amateur status in this matter, but in my own opinion the views quoted:

1) Are based on too narrow an interpretation of the expression "molecular biology." (Memory, learning, antibody formation, etc., etc.)

2) Underestimate the movement which began in the 30's to apply the whole analytical and experimental armament of the physical sciences (including mathematics) to basic biological problems.

3) Overemphasize the situation in the United States, and underemphasize the developments elsewhere, especially in England.

I do not know when the phrase "molecular biology" was first used (and of course that isn't really important), but I cannot believe that it first appeared in 1952.

I would greatly appreciate knowing what you understand by the term molecular biology, and roughly when that term began to have operational meaning and use.

My own (amateur) answer would be simply that "molecular biology involves the application, at the molecular or even more detailed level of the analytical and experimental techniques of the physical sciences, to basic biological problems"; and I would say that "it began to be discernible as a discipline in the mid-thirties and experienced a rapid growth in the late forties and early fifties."

Very sincerely yours,

A handwritten signature in cursive script that reads "Warren" with a small "T" underneath the end of the name.

Warren Weaver