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COMMITTEE ON CHEMISTRY AND PUBLIC AFFAIRS

CHEMISTRY IN MEDICINE STUDY
DR. THOMAS P. CARNEY, *Chairman*

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January 10, 1975
120-010-75

Dr. Joshua Lederberg
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Dear Dr. Lederberg:

Longer ago than I like to acknowledge you very kindly provided Dr. Marshall Gates with information on recent chemical research on genetic diseases for a study being conducted by the American Chemical Society. Once we assembled the information from you and others, however, it became apparent that additional introductory discussions would be needed if the product were to be a study and not an essay (good though such an essay might have been).

Unfortunately at the time, the ACS had a number of studies under way, and it proved impractical to prepare those introductory discussions. In recent months, however, the study has once again become a very active project. The general introductory parts have been written, conclusions and recommendations stemming from them and from the original contributions have been drafted for review, and it appears that the study is rapidly approaching publication.

As you will see from the attached outline of the study, the final 11 chapters (of which your contribution will be a part) comprise the study's scientific and technical core. It is essential, of course, that the most recent scientific developments be covered in those chapters, and we thus need your help once again. Enclosed, therefore, is that part of the study based on what you originally sent to Dr. Gates. I would appreciate it if you can now review this draft and undertake the following:

1. Add whatever appears desirable in order that the final version will include the most important scientific advances since you provided information originally.

2. Check to be certain that any revisions or additions to your original contribution have not introduced errors or distorted the perspective.

In addition, it will also be helpful if you will review the proposed chapter to see if it has enough general information to make it readily meaningful to the study's intended audience. While it is doubtless true that the study will interest persons with diverse backgrounds and needs, it is primarily designed to benefit persons who are not experts in every aspect of the science and technology of health care but who nonetheless are in positions to affect national policies bearing on health care methods and tools. It is thus highly desirable that we give these persons enough general background to enable them to appreciate more fully what our health care needs are and what role chemistry has had and can have in meeting them.

We should like for each subject to be introduced with a short discussion that will help set in perspective the nature of the health problem being discussed. Such a discussion could include the prevalence of illnesses, their medical impact on sufferers, and their social and economic costs. The role drugs and other treatment methods have had in dealing with the illnesses, the amount and direction of research and development effort apparently now needed to provide better care, and the deterrents to progress as you see them (lack of scientific knowledge in what subject areas, lack of effort, regulatory restrictions, and the like, for example) could also be included. Some of that type of discussion is already in your chapter, to be sure, either explicitly or implicitly, but it will be desirable now to make certain that the discussion is inclusive (and explicit) enough.

Secondly, I should like to ask that you reexamine your contribution to see if additional information about the underlying biochemistry of the illnesses might be incorporated. An extensive discussion isn't needed, but I'd appreciate your reviewing the chapter to see if more background should be included that will describe what chemists and other scientists have learned about the nature of life processes relative to genetic diseases and how they are using that information to explain the ways drugs act and to devise better drugs and other health care methods.

To see a good example of the approach I am suggesting for both the medical/social/economic impact discussion and the underlying biochemistry discussion, you might like to consult Frank Clarke's recent book, "How Modern Medicines Are Discovered" (Futura Publishing Co., Mount Kisco, N.Y., 1973). The chapter by Albert Plummer and George deStevens (pages 107-131) is particularly effective in this regard.

Finally, one of the points we should like to make with the study as a whole is the nature of chemical research today relating to genetic diseases, how that nature has changed in the past decade or so, and how you see it possibly changing in the future. Again, I should appreciate your reviewing what you have written to make certain the point is dealt with explicitly enough.

I'd like to know by return mail that you will be able to fulfill these requests. Then if I might have your revisions and additions in four to six weeks we shall be able to complete and publish the study early this year. All of us are aware

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of the potential chemistry has for improving health care, and we are likewise aware of the profound implications some congressional and other proposals have for research and development in medicinal chemistry. We hope this study will provide a basis for sound national policies affecting health care, and we are grateful for the help you are giving.

Very truly yours,

T. P. Carney

Thomas P. Carney

Enclosure