

Author of numerous publications, articles and reviews in the area of public policy towards business. Among others, his books include: *The Fertilizer Industry: Study of an Imperfect Market* (1958) and *The American Economy* (1963).

BIOGRAPHICAL SKETCH OF GORDON R. CONRAD

I took my academic training in chemical engineering at New York University and later continued with business administration at Columbia Graduate School of Business. Since 1956 I have been employed in the Industrial Economics Section of Arthur D. Little, Inc. conducting market research, economic feasibility and long-range economic planning studies in the chemical and allied process industries. During the last two years I have been in charge of a number of economic studies relating to the operations of the pharmaceutical industry which have been sponsored by the Pharmaceutical Manufacturers Association.

Dr. MARKHAM. Mr. Chairman, and members of the subcommittee, the short statement I have is to report on the study that Mr. Gordon Conrad of Arthur D. Little and I have been conducting for the past month or two, one of us has to read it, since it is not very appropriate to do this in the form of a duet. So we tossed, and I am going to put it in the record.

STATEMENT OF JESSE W. MARKHAM, PH. D., PROFESSOR OF ECONOMICS, PRINCETON UNIVERSITY, PRINCETON, N.J.; AND GORDON R. CONRAD, SENIOR STAFF ASSOCIATE, ARTHUR D. LITTLE, INC., CAMBRIDGE, MASS.

Dr. MARKHAM. My name is Jesse W. Markham and I am here largely as a consultant to Arthur D. Little Co., Inc., a company with which I do some consulting from time to time.

We appreciate the opportunity to appear before your committee and report on some additional studies we are making at Arthur D. Little, Inc., concerning the relationship between risks and profits in the ethical drug industry. The study just presented to you indicates that there is a strong positive relationship between risks and profits in American manufacturing industries generally. Since this committee is inquiring into the economic functioning of the pharmaceutical industry, the question naturally arises as to what specifically are the elements of risk the pharmaceutical industry confronts. We have been engaged in a study designed to shed light on this question. While the study is far from complete, some of the preliminary findings should be of interest to this committee.

The risk/return study just presented shows that the pharmaceutical industry ranks high among manufacturing industries in terms of risks. Just what are the components of these risks? Our current study indicates that among the major risks a pharmaceutical firm confronts are those unforeseeable events beyond its control that could, in a relatively short period of time, wipe out a substantial portion of its total profits and total revenues. We have, with reasonable certainty, identified the following as major risks somewhat peculiar in this regard to the pharmaceutical industry:

1. The development of a complete product superior to one of the company's major products which causes virtually complete replacement of it in a short time.