

**PULMONARY EMPHYSEMA  
AND PROTEOLYSIS**

*Edited by* **CHARLES MITTMAN**

# ***Pulmonary Emphysema and Proteolysis***

*Edited by CHARLES MITTMAN*

*Department of Respiratory Diseases  
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1972

ACADEMIC PRESS New York and London

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ACADEMIC PRESS, INC.

111 Fifth Avenue, New York, New York 10003

*United Kingdom Edition published by*

ACADEMIC PRESS, INC. (LONDON) LTD.

24/28 Oval Road, London NW1

LIBRARY OF CONGRESS CATALOG CARD NUMBER: 72-80983

PRINTED IN THE UNITED STATES OF AMERICA

#### CITY OF HOPE SYMPOSIUM SERIES

- I. Hereditary Disorders of Erythrocyte Metabolism (Ernest Beutler, ed.). Grune & Stratton, 1968.
- II. Pulmonary Emphysema and Proteolysis (Charles Mittman, ed.). Academic Press, 1972.

*This volume is based on the proceedings of the symposium held January 4-6, 1971, at the City of Hope Medical Center, Duarte, California.*

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## ***Foreword***

This volume is another addition to the series of symposia organized by members of the staff of the City of Hope Medical Center. In accordance with the aims of the Center, to serve the community through medical care of catastrophic illness allied to the acquisition of new knowledge, this symposium deals with a frontier looking toward better diagnostic and preventive tools in emphysema. In our society at the present time there are few more relevant concerns than this chronic, unrelenting disease born out of the noxious elements of the environment acting upon a congenitally weak respiratory apparatus.

I want to express the esteem of the Center for the editor and the very effective and persuasive group of workers in the field who have made this symposium a memorable event in our professional lives.

RACHMIEL LEVINE  
Executive Medical Director

## ***Preface***

This symposium was stimulated by a number of observations which suggested new approaches to the study, treatment, and possible prevention of emphysema. In 1963, Laurell and Eriksson described an association between emphysema and a rare, inherited plasma protein abnormality,  $\alpha_1$ -antitrypsin deficiency. These patients may develop disease because of the uninhibited action of proteolytic enzymes on lung tissue. This theory gained independent support when Gross showed in 1965 that experimental animals develop emphysema after intratracheal exposure to papain, a protease not inhibited by plasma proteins. Interest generated by these observations increased with studies that suggested that individuals with the common heterozygous or intermediate antitrypsin deficiency, as well as rare homozygotes, may be predisposed to emphysema.

It seemed important to assemble the investigators involved in this and related work to permit them to exchange ideas, to discuss and hopefully resolve conflicts in methodology and results, to define the present state of our knowledge, and to speculate on the significance of their work and on further approaches to this research. With support from the Institute for Biomedical Studies of the City of Hope and with supplemental funds from the American Thoracic Society, the Los Angeles County Tuberculosis and Respiratory Disease Association, and the Mead Johnson Company, a conference was held on January 4-6, 1971, at the City of Hope Medical Center, Duarte, California. Although attendance was limited to facilitate the interchange of ideas, the participants represented such diverse fields as chest medicine, pediatrics, gastroenterology, surgery, gynecology, radi-