THE CYTOPLASMIC BASOPHILIC SUBSTANCE OF THE EXOCRINE PANCREATIC CELLS

An Experimental, Histological and Densitometric Study

V. Oram

From the Department of Anatomy, University of Aarhus, Denmark (Head: Professor Lárus Einarson)

By M. D. AARHUS.

BASEL (Switzerland) S. KARGER — NEW YORK

The experimental studies presented here were carried out during the years 1950-1953 in the Department of Anatomy, University of Aarhus (Professor Lárus Einarson).

I wish to express my sincerest thanks to Professor Lárus Einarson for the privilege of working in the Department of Anatomy. In Professor Einarson I met a highly inspiring scientific enthusiasm combined with a profound sense of criticism, which has been of fundamental importance in my work. In addition, Professor Einarson took an unfailing interest in the problems related to the present studies and provided the best possible working conditions to me in his department. I owe a great debt of gratitude to Professor Lárus Einarson.

I am very grateful to Mrs. Esther Clausen, née Nathansen, for her skilful assistance in the work with the experimental animals and in the preparation of the histological specimens.

Miss Anne Marie Jensen has been a very patient secretary, who with outstanding ability has helped me in typing the manuscript, for which I am greatly indebted to her.

I wish to express my special appreciation to Mr. Einar Hansen, who has been of invaluable assistance to me in the solution of technical problems and in making the photomicrographs.

In this place I also wish to extend my heartfelt thanks to J. Fabricius-Møller, M. D., Senior Surgeon of the County Hospital, Aarhus, for his encouragement and stimulating support during the present studies. In a close collaboration extending over many years he has been my teacher in matters of both science and style in writing.
Finally, I owe a deep debt of gratitude to my wife, Kamma Winther Oram, and to my daughter, Vibeke Mary-Ann Oram, who both with great patience sacrificed family life on the altar of science during the various phases of the preparation of this monograph.

May 1955. V. Oram,
Højkolvej 36, Hasle, Aarhus, Denmark.

CONTENTS
INTRODUCTION 7
CHAPTER I
PANCREAS 8
Morphology 8
Pancreatic Juice 9
Pancreatic Stimuli 10
Mechanism of Secretion 12
CHAPTER II
THE CYTOPLASMIC BASOPHILIC SUBSTANCE 15
Morphology 15
Function 17
Chemical Composition and Demonstration 20
CHAPTER III
AUTHOR’S INVESTIGATIONS – METHODS 29
Experimental Technique 29
Histological Technique 30
Photographic and Densitometric Technique 34
Discussion 39
CHAPTER IV
RESULTS OF AUTHOR’S INVESTIGATIONS 42
CHAPTER V
PRINCIPAL CONCLUSIONS 99
DANISH SUMMARY 102
BIBLIOGRAPHY 104
APPENDIX by Einar Hansen 112