## CONTENTS

1. INTRODUCTION 1

2. HISTORICAL ACCOUNT 7

3. MATERIALS AND METHODS 25

4. OBSERVATIONS 36

4.1 Bioecology of *Antheraea Mylitta* D.

4.1.1. Salient Features in the External Morphology 36

4.1.2. Seasonal Variations in the Population of *A. mylitta* 38

4.1.2.1. Population structure in Relation to Density - Independent Factors 38

4.1.2.2. Population Structure in Relation to Density - Dependent Factors 39

4.1.3. Studies on the Life history and Seasonal Variations of Different Economic Characters of *A. mylitta* 41

4.1.3.1. Sexual Reproduction 41

4.1.3.1a. First Season 41

4.1.3.1b. Second Season 45

4.1.3.1c. Third Season 46

4.2. Neuroendocrine Organs and Neurosecretion 47

4.2.1. Morphology, Topography, Classification and Number of Neurosecretory Cells 48

4.2.1.1. In Brain 48

4.2.1.1a. In *A. mylitta* 48

4.2.1.1b. In *C. furcellata* 57

4.2.1.2. In Anterior Sympathetic Nervous System 59

4.2.1.3. In Ventral Nerve Cord 61

4.2.1.3a. In *Antheraea mylitta* 61

4.2.1.3b. In *Canthecona furcellata* 63
4.2.2. Activity of Brain Neurosecretory Cells During Metamorphosis in *A. mylitta* 64
4.2.3. Morphology and Anatomy of Retrocerebral Neuroendocrine Complex 65
4.2.3a. In *Antheraea mylitta* 65
4.2.3b. In *Canthecona furcellata* 69

5. DISCUSSION
5.1. Bioecology of *Antheraea mylitta* D. 73
5.1.1. Methodology and Techniques 73
5.1.2. Seasonal Variations in the Population Structure 74
5.1.2a. Density - Independent Factors 75
5.1.2b. Density - Dependent Factors 76
5.1.3. Bioecology and Commercial Attributes 77

5.2. Neuroendocrine Organs and Neurosecretion 81
5.2.1. Nomenclature and Classification of Neurosecretory Cells 83
5.2.2. The Brain Neurosecretory Cells: Their Distribution and Multiplicity 90
5.2.3. Neurosecretory Cells of the Anterior Sympathetic Nervous System 100
5.2.4. Neurosecretory Cells of the Ventral Nerve Cord 101
5.2.5. Activity of Neurosecretory Cells 103
5.2.6. Retrocerebral Endocrine Complex and Neurohormone Storage and Release Sites 107

6. BIBLIOGRAPHY
With 130 Figures and IX Tables.

ANNEXURE

SUMMARY (i-iv)