

# Contents

Foreword	ix
Preface	xiii
Abbreviations	xv

## I HISTORY OF NEUROIMMUNOLOGY

1. A Brief History of Neuroimmunology 3  
*Byron H. Waksman*

## II BASIC CONCEPTS

2. A Review of the Immune System 69  
*Emil R. Unanue*
3. Immunologic Principles Related to the Nervous System and the Eye:  
Concerning the Existence of a Neural-Ocular Immune System 99  
*J. Wayne Streilein and Andrew W. Taylor*
4. Cervical Lymphatics, the Blood-Brain Barrier, and Immunoreactivity  
of the Brain 134  
*Helen F. Cserr and Paul M. Knopf*

## III IMMUNOLOGICALLY ACTIVE CELLS

5. Microglia and Macrophages 155  
*V. Hugh Perry and Siamon Gordon*
6. Astrocytes: Normal Aspects and Response to CNS Injury 173  
*Michael D. Norenberg*

7. Lymphocyte Entry and the Initiation of Inflammation  
in the Central Nervous System 200  
*William F. Hickey, Hans Lassmann, and Anne H. Cross*
8. Innervation of Lymphoid Organs and Neurotransmitter–Lymphocyte  
Interactions 226  
*Denise L. Bellinger, Suzanne Y. Felten, Dianne Lorton, and David L. Felten*
- IV CELLULAR AND HUMORAL IMMUNE RESPONSES  
IN THE NERVOUS SYSTEM
9. Autoantigens of the Nervous System 333  
*Lou Ann Barnett and Robert S. Fujinami*
10. Antigen Presentation in the Central Nervous System 364  
*Jonathon D. Sedgwick and William F. Hickey*
11. Cytokine Expression in the Nervous System 419  
*Etty N. Benveniste*
12. CD4 Effector Cells in Autoimmune Diseases  
of the Central Nervous System 460  
*Hartmut Wekerele*
13. Direct Cell-Mediated Responses in the Nervous System: CTL vs. NK Activity,  
and Their Dependence Upon MHC Expression and Modulation 493  
*Wendy S. Armstrong and Lois A. Lampson*
14. Neuroendocrine–Immune Interactions 548  
*Douglas A. Weigent and J. Edwin Blalock*
15. Establishment and Control of Viral Infections  
of the Central Nervous System 576  
*Jürgen Schneider-Schaulies, Uwe G. Liebert, Rüdiger Dörries,  
and Volker ter Meullen*
16. Transplantation into the Central Nervous System 611  
*Maciej Poltorak and William J. Freed*
17. Immunosuppression: CNS Effects 642  
*Robert W. Keane*

18. Immunology of the Eye 668  
*Scott W. Cousins and Richard D. Dix*

## V

## NEUROIMMUNOLOGY OF DISEASE

19. Autoimmune Demyelinating Diseases of the Central Nervous System 703  
*Claude P. Genain and Stephen L. Hauser*
20. AIDS and the Nervous System 727  
*Lawrence S. Honig*
21. Tumors of the Central Nervous System 760  
*Carol J. Wikstrand and Darell J. Bigner*
22. Immunology of the Peripheral Nervous System 785  
*Rachel George, Judith Spies, and John W. Griffin*