*Proteins of the Nervous System (Second Edition)*

Edited by Ralph A. Bradshaw and Diana M. Schneider
Raven Press; New York, 1980
xii + 396 pages. $61.20

Since the first edition of this book was published in 1973 there has been a considerable growth in our knowledge of both the structure and function of many proteins found in the nervous system. This includes such proteins as those of myelin, neurofilaments, cell specific proteins such as glial fibrillary acidic protein and acetylcholine and other receptor systems. In addition there is a greater understanding of axoplasmic transport of proteins, and of their disposition and relationships in neural cell membranes. Many of these developments are represented in the 13 reviews which comprise this new edition.

The review by C. Zomzeley-Neurath and W. Walker on nervous system-specific proteins deals with 14-3-2 protein, neuron-specific enolase and S-100 protein their distribution, isolation, structure and other properties whilst L. F. Eng reviews equivalent properties of glial fibrillary acidic protein. F. L. Margolis presents current knowledge of a protein found only in olfactory neurones which can be employed as an olfactory marker protein.

The considerable advances in our knowledge of myelin basic protein and its role in myelin structure are presented and appraised by P. R. Carnegie and W. J. Moore whilst myelin proteolipid protein the other major myelin protein is reviewed by H. C. Agrawal and B. K. Hartman.

The fascinating topic of axonal transport of proteins and cell constituents is presented in two chapters, one by W. O. McClure and R. F. Theiler which deals exclusively with anterograde transport from cell body to the neurone periphery, and a second chapter by I. A. Hendry concentrates on the return stream or retrograde transport. The detailed structural and biological properties of nerve growth factor are described by K. A. Thomas and R. A. Bradshaw. The proteins, lipids and other structural properties of synaptic vesicles are also featured in this edition. Thus, V. P. Whittaker and H. Stadler present current concepts of the organisation of cholinergic vesicles based on studies with the electric organ of the electric fish. Chromaffin granules of adrenal medulla in contrast, store catecholamines, and R. A. Hogue-Angeletti, L. G. Roda, J. A. Nolan and S. Zaremba review the structure of these vesicles, in relation to catecholamine storage and release.

The proteins and other compounds which might be involved in cell–cell recognition in the development of the nervous system are discussed by R. C. Merrell, whilst W. T. Norton and J. E. Goldman write on the proteins and structural organisation of neurofilaments.

The final chapter by N. J. MacLusky and C. R. Clark presents a brief look at the burgeoning knowledge of CNS hormone receptors based on ligand-binding studies. Five groups of hormones are considered and these range from thyroid to steroid categories.

In general, the reviews are written in a clear style with plenty of illustrations, reproduced experimental data, and full reference to the current literature. All in all, this updated edition provides a useful compendium of current knowledge of selected proteins of the nervous system.

H. F. Bradford