# Book Reviews

## Peptidergic Neurotransmitters

**Brain Peptides.** DOROTHY T. KRIEGER, MICHAEL J. BROWNSTEIN, and JOSEPH B. MARTIN, Eds. Wiley-Interscience, New York, 1983. xiv, 1032 pp., illus. $97.50.

The first peptide neurotransmitter, substance P, was discovered by von Euler and Gaddum in 1931. Thus the concept of a peptidergic neurotransmitter is not a new one. However, the discovery of the enkephalins in 1975 provided an enormous impetus to the field. The application of such techniques as radioimmunoassay, immunohistochemistry, high-performance liquid chromatography, transcription assay, and hybridization in situ has produced an explosive increase in our knowledge. Many bioactive peptides have been discovered in the nervous system and proposed as neurotransmitters. Peptides whose existence is already well established in the endocrine system, such as cholecystokinin and insulin, have also been found in the brain. Indeed many peptides are now thought to have multiple roles, as neuronal, paracrine, or endocrine biological messages, depending on their cells of origin and release. This situation is not unique to peptides, of course. For example, the catecholamines can act primarily as endocrine messages if released from the adrenal medulla or as neurotransmitters if released from neurons.

*Brain Peptides* is an attempt to present the reader with the whole panorama of the subject, with an emphasis on peptidergic neurotransmitters in the central nervous system. The book contains 39 chapters divided into four sections. In the first, basic aspects of peptide structure, metabolism, and phylogeny are presented. In the second, the involvement of peptides in the central control of various physiological functions (such as nociception and thermoregulation) is discussed. The third section is a guide to practical techniques for studying peptides; their measurement, localization, and actions are all considered. In the final section, each peptide or group of peptides is discussed in its own right.

Clearly an attempt has been made to produce a survey that is of the highest quality and that is as up to date as possible. The chapters range from being at least satisfactory to being highly authoritative. It is impressive to find chapters devoted to such relatively recent discoveries as corticotropin-releasing factor (CRF) and growth hormone–releasing factor (somatocrinin). However, there are also some anomalies, such as the absence of any real discussion of the pancreatic polypeptide-related peptides such as NPY and PYY.

For the reader who wishes a relatively comprehensive introduction to all aspects of the field, this is probably the best book available. It is certainly superior to the many symposium volumes that have appeared over the last few years. However, the field has become so enormous that it is impossible to cover it completely even in a volume of this size. The field is moving at such a rapid rate that any attempt at an overall synthesis is bound to be rather out of date by the time it is published. Thus, for example, recent discoveries such as calcitonin gene-related peptide, substance K, or PHI/PHM-27 are not discussed here and some of the theoretical and technological implications of such discoveries are not considered.

This is an excellent volume for the reader who wishes to become acquainted with this field. For the more sophisticated reader, the volume will not be a substitute for review articles that appear in journals relatively rapidly.

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## Quaternary Sediments

**Glacial-Marine Sedimentation.** BRUCE F. MOLNIA, Ed. Plenum, New York, 1983. x, 344 pp., illus. $65.

The stated purpose of this collection of 18 papers is to portray differences among glacial-marine sedimentary environments in a variety of geographic settings through studies of Quaternary-age deposits. In addition, descriptions of important pre-Quaternary rock sequences, ranging in age from the Late Precambrian to the Neogene, are presented to illustrate how criteria established from an understanding of Quaternary glacial-marine sedimentary sequences can be used to interpret more accurately the ancient record.

The first objective is admirably fulfilled by descriptions of sedimentary sequences and processes from the Gulf of Alaska, the Arctic and North Atlantic oceans, Baffin Island, the Puget Lowlands, and Antarctica. Depositional environments include fjord, deep and shallow continental shelf, perennially ice-covered (ice shelf and sea ice) seas, continental shelves bounding mountainous coasts, shelves with ice sheets grounded on the shallow sea floor, and deep sea. Processes include direct release from glaciers, sediment rain-out from meltwater and floating ice, deposition by turbidity and ocean currents, earthquake-triggered submarine landslides, and other mass movements. Separate models are presented for polar, subpolar, fjord-tidewater glacier, and glaciated coast sedimentation. The breadth of coverage and the wealth of detailed observations make this part of the book a mother lode for sedimentologists and stratigraphers.

A paper on the paleoecology of Late Pleistocene glacial-marine sediments by M. A. Balazarini is a reminder that fossil assemblages, when present in a stratigraphic sequence, can be important data proxies for such environmental conditions as water temperature, depth, and salinity. It also rubs salt into the wounds of those dedicated to the study of fossil-barren sequences.

The last three papers, by J. M. Armentrout, J. N. J. Visser, and N. Christie-Blick, present substantial descriptions of important examples of older glacial-marine sedimentation and interpretations based on knowledge of modern environments of deposition. They are all unusually well illustrated, including some extraordinary oblique aerial photographs of the Neogene Yakataga Formation in the Robinson Mountains, Alaska.

An unexpected bonus is a paper by J. B. Anderson on the spatial and temporal distribution of ancient glacial-marine sediments. It serves as a fine introduction to the complexities and controversies relating to the subject. He includes an informative summary of criteria for recognizing origins of diamicts and a useful bibliography.

This benchmark compendium on glacial-marine sedimentation owes much of its success to Molnia's perceptive selection of authors and to his own substantial contributions to the contents. It is a comprehensive, up-to-date summary of