all. Furthermore, the coverage of some of the methods that are discussed is quite uneven, with some methods only lightly touched upon and others dealt with, somewhat redundantly, in several papers. Nevertheless, the editor has succeeded in assembling a volume that will be interesting and useful to those concerned with the directions genetic toxicology is taking and particularly with developments in cytogenetics and in vivo monitoring in human populations. The book is nicely produced, with only a few errors, and includes a useful index.

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A Brain-Gut Peptide

Neurotensin, Brain and Gastrointestinal Peptide. Papers from a conference, New York, March 1982. CHARLES B. NEMEROFF and ARTHUR J. PRANGE, Jr., Eds. New York Academy of Sciences, New York, 1982. x, 444 pp., illus. Cloth or paper, $80. Annals of the New York Academy of Sciences, vol. 400.

Neurotensin, a tridecapeptide (that is, having 13 amino-acid residues), is a prototype of a new class of biologically active peptides found in neurons and endocrine cells of the brain and gastrointestinal tract. This readable and carefully edited volume discusses current experimental and clinical data accumulated in more than a dozen laboratories around the world. In the first two papers Carraway and Leeman record the discovery in 1973 of neurotensin in extracts of bovine hypothalamus and the subsequent characterization of an identical peptide in mammalian gut, including human gut. Twenty-four additional papers and 28 "poster" abstracts describe in considerable detail the anatomic distribution of the peptide in brain and gut and its physiologic and pharmacologic effects on blood pressure, vascular tone, and gut motility. Several papers deal specifically with the effects of neurotensin on the neuroendocrine and central nervous systems. Of the latter effects, emphasis is given to the ability of neurotensin to induce hypothermia, to cause changes in motor activity, and to elicit other behaviors, all subjects studied in some depth in the laboratories of the two editors.

Neurotensin has a widespread distribution in the brain and gut. In the CNS, it is found in highest concentrations in the hypothalamus, limbic system, and basal ganglia. It is also found in neurons of the dorsal horn of the spinal cord, where it is suggested to play a role (antinociceptive) in the transmission of pain. In the gut, neurotensin is found principally in secretory cells of the mucosal layer, particularly in the ileum and to a lesser extent in the jejunum, with only traces in the stomach and duodenum. Whether it exists also in intrinsic nerve fibers of the gut in avian species is disputed; evidence for such a site in mammals is lacking. Unusual and unexpected sites of neurotensin immunoreactivity include the thymus of avian species and the adrenal medulla of mammalian species. Of interest to the clinician is the common presence of neurotensin in tumors of the pancreas that are derived from neuroectoderm and in some medullary carcinomas of the thyroid gland. One of the current enigmas in clinical endocrinology is that patients with tumors that secrete neurotensin and with high levels of the peptide in the blood seem to have no adverse symptoms at all.

A coherent view of the physiologic roles of neurotensin is still not to be found. Kitabgi describes elegant in vitro experiments showing effects of neurotensin on intestinal smooth muscle. In the guinea pig ileum, neurotensin causes contraction by complex effects that include direct stimulation of muscle receptors and stimulation of nerve fibers containing acetylcholine and perhaps substance P. In the rat, neurotensin elicits relaxation of the longitudinal muscle of the duodenum and ileum. Rioux and colleagues review the effects of neurotensin on the cardiovascular system, where it elicits mild hypertension and chronotropism. There are prominent differences among species in the effects of neurotensin on the cardiovascular system. Both myogenic and neurogenic effects on the heart are postulated to occur.

It is in the reviews of the effects of neurotensin on the CNS that it becomes apparent how much information is yet required to provide a true understanding of the biological importance of neurotensin. Administration of neurotensin directly into the brain or cerebral ventricles elicits a number of effects, including alterations in the secretion of anterior pituitary hormone, changes in the responses of the autonomic nervous system, and perturbations in the regulation of body temperature. Although the last paper, by the editors, attempts a synthesis of the peptide's physiological role in the CNS, it leaves the reader unconvinced that sufficient information is currently in hand to explain the often overlapping, redundant, and inconsistent experimental results reported. A lack of information is common with current descriptions of the brain peptides. In the case of neurotensin, no information is available on the biosynthesis and cellular processing of the peptide, the molecular basis of its action, or the biochemical nature of the binding sites found in several tissues.

This volume will be useful to investigators interested in molecules that are synaptically active, to the brain-gut community, and to the neurobiologist or endocrinologist who wishes to review the latest in pharmacologic neuropeptide research. The volume will not hold the attention of the general biologist or the clinician who is unfamiliar with the general techniques and approaches used in the investigation of peptides.

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Books Received

Applied Probability-Computer Science. The Interface. Papers from a conference, Boca Raton, Fla., Jan. 1981. Ralph L. Disney and Teunis J. Ott, Eds. Birkhäuser, Boston, 1982. Two volumes. xxviii, 504 pp., and xiv, 500 pp. Each volume, $34. Progress in Computer Science, No. 2.

The Aquatic Ape. Elaine Morgan. Stein and Day, New York, 1982. 170 pp., illus., + plates. $14.95.

Aquatic Biota of Mexico, Central America and the West Indies. Being a Compilation of Taxonomic Bibliographies. Stuart H. Hurlbert and Alejandro Villalobos-Figueroa, Eds. San Diego State University, San Diego, Calif., 1982 (available from S. H. Hurlbert, Department of Biology, San Diego State University). xvi, 530 pp. Paper, $20.

BASIC Programming for the Classroom Teacher. Joan M. Miller, Ruth King Chaya, and Debra J. Santora. Teachers College Press, New York, 1982. xvi, 262 pp. Spiral bound, $15.95.

The Best Science Films, Filmstrips, and Videocassettes for Children. Kathryn Wolff, Joellen M. Fritsche, and Gary T. Todd, Eds. American Association for the Advancement of Science, Washington, D.C., 1982. xiv, 140 pp. $12.95.

Biochemical Approaches to Aging. Morton Rothstein. Academic Press, New York, 1982. xiv, 314 pp. $39.50.

Computed Tomography of the Head and Spine. A Photographic Color Atlas of CT, Gross, and Microscopic Anatomy. H. N. Schnitzlein, Edith Wright Hartley, F. Reed Murtagh, Laurence Grundy, and John T. Fargher. Urban & Schwarzenberg, Baltimore, 1983. x, 118 pp. $59.

Computer Simulation and the Statistical Mechanics of Adsorption. D. Nicholson and N. G. Parsonage. Academic Press, New York, 1982. xvi, 398 pp., illus. $55.

Enumerative Geometry and Classical Algebraic Geometry. Patrick Le Barz and Yves Hervier, Eds. Birkhäuser, Boston, 1982. x, 256 pp. $20. Progress in Mathematics, vol. 24.

Environmental Pathology. An Evolving Field. Papers from two conferences, Aspen, Colo., 1979 and 1980. Rolla B. Hill and James A. Terzian, Eds. Liss, New York, 1982. x, 376 pp., illus. $60.

Evaluation and Management of Hospital Infections. Papers from a symposium, Noordwijkerhout, Netherlands, Mar. 1982. Ralph van Furth, Ed. Nijhoff, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 266 pp., illus. $39. New Perspectives in Clinical Microbiology 5.

Health and Human Values. A Guide to Making Your Own Decisions. Frank Harron, John Burnside, and Tom Beauchamp. Yale University Press, New Haven, Conn., 1983. xvi, 196 pp. Cloth, $24.95; paper, $6.95.

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