that are drawn from the 1970-to-1975 literature and still deserve citation. The dates in the bibliographies confirm my impression that most of the book was drafted before 1975. Recent developments have tended to restructure the known results into a more concise, theoretically simple framework than is evident here. In particular, linear inverse theory, which has become a key tool in modern seismology, is not covered.

In short, Ben-Menahem and Singh have produced a formidable work that succeeds beyond normal expectation in covering most aspects of the subject consistently and well.

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Proopiomelanocortin Peptides

ACTH and LPH in Health and Disease. TJ. B. VAN WIMERSMA GREIDANUS and L. H. REES, Eds. Karger, Basel, 1981. x, 210 pp., illus. $79.25. Frontiers of Hormone Research, vol. 8.

This monograph provides a timely and comprehensive review of the proopiomelanocortin (POMC) peptide system and its involvement in normal and diseased states. POMC is the precursor protein to ACTH and LPH. The system is interesting in that it involves several different hormones: adrenocorticotropin, β-endorphin, and α, β, and γ melanocyte-stimulating hormone. In addition, the protein is expressed in a large variety of tissues, such as the intermediate and anterior pituitary, hypothalamus, gut, and placenta, and factors regulating the synthesis and secretion of POMC-related peptides vary depending upon the expressing tissue.

The comprehensive nature of this book makes it useful in understanding the involvement of these peptides in both normal and diseased states. Because of the complexity of the system, no subject is treated in depth; however, the major subjects are discussed, and the basic literature is cited in all cases.

The contributors succeed in identifying the complexities of regulation in this system, which stem from its being polyhormonal. There is also discussion of the synergistic activities of many of the hormones. Often the biological activity of one of the POMC peptides is modified by one of the other hormones derived from the common precursor. This is a newly recognized fact, which will become increasingly important as more polyhormonal systems are described.

The book also deals with quantitating the hormones in plasma. In the POMC system, where there is substantial immunological cross-reactivity between the various hormones owing to the various melanotropin sequences, it is important to understand the exact regions of the hormone that are recognized by the antibody in the radioimmunoassay. Several papers deal with the idea that plasma POMC-related peptides can be derived from tissues other than pituitary, particularly in the case of ectopic tumors.

There is an extensive review of the involvement of the POMC-related peptides in the central nervous system. Although the hypothalamus appears to be the primary site of synthesis of brain POMC peptides, they have been localized in a variety of different regions, having most likely been brought there by axonal transport. The effects of POMC peptides in the central nervous system on pain and behavior are discussed.

Of particular interest is the extensive treatment of the anatomical connections between the brain and the pituitary. There is an enlightening section on blood flow in the pituitary-hypothalamic system. The possibility of pituitary-stalk retrograde blood flow is discussed critically, as are other mechanisms for the delivery of pituitary hormones to the brain. The description of the blood flow in this region leaves one with the idea that the POMC peptides from the intermediate lobe may be involved in regulating the anterior lobe in a manner analogous to that by which the anterior lobe is regulated by the hypothalamus.

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Antibiosis

The Future of Antibiotherapy and Antibiotic Research. Papers from a conference, Paris, Feb. 1980. L. NINET, P. E. BOST, D. H. BOUANCHAUD, and J. FLORENT, Eds. Academic Press, New York, 1981. xx, 508 pp., illus. $60.

This book is a compilation of 31 papers by 44 participants in the Second Rhône-Poulenc Round Table, which had as its stated objectives an evaluation of current knowledge of antibiotic activity, resistance, and mechanisms of action and an analysis of future requirements in antimicrobial therapy. The conference brought together a large group of experts on antibiosis whose collected presentations and discussions provide important and valuable information to anyone interested in the field.

The book is in four parts. In the first part a series of papers devoted to current patterns of susceptibility and the emerging resistance of aerobic, facultatively anaerobic, and anaerobic bacteria, though it does not provide particularly novel information, sets the stage for papers on the ecology of transferable resistance by Richmond and Petrocheilou and the surveillance and audit of antibiotic usage by Kunin (the latter providing a rather detailed description of an approach to this newest requirement by the Joint Commission on Accreditation of Hospitals). Of special interest in this part is a series of papers on the uses of antibiotics in veterinary medicine and in animal feeds, including a reasonably dispassionate and nonpolitical assessment of the benefits for food production, which are significant, and the risk to humans of the latter practice, which has not been documented.

The second part of the proceedings addresses various approaches to the evaluation of new antibiotics in vitro and in vivo. Included in this part are papers on the selection of strains for susceptibility testing (Chabbert), the assessment of inhibitors of cell wall (Tomasz) and protein (Vazquez) biosynthesis, and the potential importance of the effects of antibiotics on bacterial adhesion (Chabanon). The novel aspect of this part of the proceedings is that it takes a molecular approach to determining the action and effects of antibiotics. The effort to develop new antibiotics now can focus on those agents that are able to suppress or overcome the mechanisms of microbial resistance that have been identified to date (Davies).

The third part of the book deals with various approaches to the development of new antibiotics, including screening of organisms for antibiotic production, genetic recombination, and directed biosynthesis. The final part contains general discussions by Richmond, Davies, and Demain.

At the conclusion of the book, one is left with a contingent of participants who strongly support continuing efforts to develop new antibiotics with activity against an ever-mounting tide of resistant bacteria and another contingent who argue that the existing armamentarium of antibiotics is sufficient but requires more rational and better utilization. Although