

Hypothalamic Hormones

Edited by E. S. E. Hafez and J. R. Reel
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This slim volume contains the proceedings of a colloquium on hypothalamic hormones held at Wayne State University, in February, 1974, and is the first in a new annual series entitled '*Perspectives in Human Reproduction*'. There are six chapters, each devoted to a different aspect of the hypophysiotropic hormones, ranging from fundamental studies on their biosynthesis and secretion to clinical applications in farm animals and man.

The first chapter deals with tanycytes, modified ependymal cells which line the third ventricle and may constitute a functional link between the cerebrospinal fluid and the portal vascular supply to the anterior pituitary. There is a fascinating and lucid description of the enormously complex structural relations between neural, glial and vascular elements in the hypothalamus, together with evidence for their involvement in neuroendocrine control mechanisms. This should provide a salutary warning to the many biochemists and physiologists with over-simplified views on the anatomy of this region.

Chapter 2 deals with the biosynthesis and secretion of hypothalamic hormones and the author is committed to the controversial view that several of these factors, including the decapeptide LH-RH, are biosynthesized enzymatically, perhaps by processes similar to those described for the cyclic antibiotics, gramicidin S and tyrocidin. Much of the evidence, some previously unpublished, seems equivocal and lacks critical interpretation. No attention has been paid to possible alternative mechanisms which deserve to be considered, especially the recent suggestion

that the C-terminal amide groups of this and other hormones may arise by the aminolysis of a ribosomally-synthesized prohormone. A description of the cellular localization of hypothalamic hormones and the effects of biogenic amines and steroid hormones on their release covers an area which has been reviewed more extensively in several other recent publications. This criticism is also true of much of the remainder of the volume. A section on chemical and biological properties of hypothalamic hormones and synthetic analogues duplicates some material covered in the last two chapters on clinical applications in man and animals. An excellent, critical chapter on the radioimmunoassay of LH-RH emphasizes problems in validating the specificity of antisera and demonstrates that parallelism between standards and dilutions of serum or tissue extracts is a completely inadequate criterion in this respect.

Some lack of balance must be the chief criticism of this book; a few specialized aspects being treated in considerable detail whereas more general areas are skimmed or, as in the case of the mechanism of action of hypothalamic hormones, neglected completely. Despite these reservations, the book affords a concise review of much of the scientific and clinical background to the hypothalamic hormones and should provide a useful introduction for newcomers to the subject.

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