Control of the Thyroid Gland: Regulation of its Normal Function and Growth. Advances in Experimental Medicine and Biology, Vol. 261, Edited by R. EKHOLM, L. D. KOHN and S. H. WOLLMAN. Published 1989 by Plenum Press, New York. No. of pages: 416. ISBN: 0-306-43380-X.

This volume presents the proceedings of the *Symposium on the "Control of the Thyroid Gland; Regulation of its Normal Function and Growth"* held at the National Institutes of Health, Bethesda, MD on 20–21 March 1989.

The motivation for the organization of this symposium was the fast development in recent years of the understanding of the regulation of the thyroid—and the progress in the field of cell regulation in general—which have led to profound modifications of the view of the control of the thyroid. Not so many years ago the thyroid was thought to be controlled by one regulator, the pituitary TSH, which with cyclic AMP in the role of second messenger was considered to express or regulate most or all processes in the gland. In the last several years it has been well documented that hormones other than TSH and various growth factors are involved in thyroid growth control and it has been increasingly clear that several hormones and neurogenic agents are obligate participants in the regulation of thyroid function. In addition, not only new agonists acting on the thyroid have been revealed, but new transducer and second messenger systems have been discovered. In particular the interest has been—and is—focused on the signals emanating from the hydrolysis of the inositol phospholipids, comprising the inositol trisphosphate/Ca^{2+} pathway and the diacylglycerol/protein kinase C pathway. Since these new signal systems must be coordinated with the "old" systems, the regulatory network has become very complex. Parallel with the development of these new areas in the field of thyroid regulation the understanding of the TSH system has been modified and essentially improved with respect to the pituitary–thyroid interrelation, the structure and function of TSH and of its receptor.

The proceedings deal with almost all aspects of thyroid regulation and summarize the current state of understanding of this biologically and clinically important issue. The main sections are as follows:

—The pituitary–thyroid axis;
—Thyroid regulators: neurogenic agents, hormones, iodide;
—Signals and transduction;
—Regulation of growth and function.

This book would be useful not only to thyroidologists and endocrinologists in general, but also to clinicians, biologists, and people working in other fields who are interested in cell regulation.

DNA–Protein Interactions in Transcription. UCLA Symposia on Molecular and Cellular Biology, Vol. 95. Edited by J. D. GRALLA. Published 1989 by Liss, New York. No. of pages: 350. ISBN: 0-8451-2694-6.

This volume is the result of a symposium entitled *"DNA–Protein Complexes in Transcription"*, held at Keystone, Colorado, on 4–10 April 1988. When planning first began in 1986, it was anticipated that a meeting of modest size would be held, presenting a broad view of a specialized topic. At that time, very few eukaryotic transcription factors had been isolated, and little was known about them. The phenomenon of transcriptional control at a distance seemed to be restricted to eukaryotic genes, and there was little experimental support for proposed mechanisms of action at a distance. Hints were just beginning to emerge that DNA was more flexible than had been thought and that this might have implications for its recognition by control proteins. Gene activation mechanisms in general were obscure, and critical details were missing even from the well-characterized *Escherichia coli* systems. It seemed like an excellent time to bring together experts in eukaryotic and bacterial systems, ranging from biologists to physicists, to exchange ideas and results.

By the time of the meeting in 1988, the field of study had changed almost beyond recognition. This is reflected in the articles in this volume which discuss aspects of the mechanism of action of dozens of transcription factors. Such enormously important details as which factors direct tissue-specific transcription, how some factors cooperate during transcriptional activation, how they can act over long distances via DNA looping, and how some bind DNA at the atomic level are now known. That all of this could have happened over a two-year period is remarkable and a testament to the health and vigor of the international research community.

The book is divided into the following main sections:

—Prokaryotic transcriptional control:
Repression,
Activation;
—Factors in eukaryotic transcription:
mRNA,
Stable RNA;
—Mechanisms in eukaryotic transcription;
—Chromatin.

This book would be very useful for geneticists, chemists, biochemists, molecular and cellular biologists, microbiologists, and immunologists.

Establishing a Successful Human Pregnancy, Serono Symposia Publications from Raven Press, Vol. 66. Edited by R. G. EDWARDS. Published 1990 by Raven Press, New York. No. of pages: 300. ISBN: 0-88167-512-1. Price: $79.50.

This book presents the proceedings of a conference held in Cambridge to honour the work of Patrick Steptoe who died in 1988 after a long and distinguished career in obstetrics and gynaecology. Its constituent papers reveal the astonishingly rapid advances in our understanding of many fundamental events in reproductive physiology and embryology, and their current application in clinical medicine. Paradoxically, they also show how much remains to be discovered to help patients with infertility or the threat of conceiving children with inherited disease, and how much remains to be discovered about conception and the initial stages of embryonic growth.

The following chapters are included:

—Introduction: A tribute to Patrick Steptoe;
—Ovulation, fertility and infertility: lessons from basic research;
—Clinical use of LHRH agonists;
—Gonadotrophins of the menstrual cycle and implantation;
—Follicular growth to ovulation;
—The endocrinology and paracrinology of the ovary;
—The induction of oocyte maturation in mammals;
—Biochemical changes in the fertilizing spermatozoon;
—Biochemistry and functions of mouse zona pellucida glycoproteins;
—Fertilization mechanisms in animals and man: current concepts;
—The cytoskeleton of the oocyte: its role in the generation of normal and aberrant pre-embryos;
—The environment of the preimplantation embryo;
—Induction, gene activation and embryonic differentiation;
—Mechanism and consequences of genomic imprinting for development and genetic disorders;
—Preimplantation diagnosis by biochemical or DNA microassay in a single cell;